

Topic: Bacterial infections

Paper number: 1013

Presentation type requested: Poster Presentation

PSOAS MUSCLES ABSCESES DUE TO MYCOBACTERUM TUBERCULOSIS IN IRANIAN CHILD

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BACKGROUND AND AIMS: T.B Muscle Abscess is currently an uncommon clinical Entity .
METHODS: CASE REPORT
RESULTS: 3/5 Y/O Iranian girl Known case of T.B. lymph adenitis from early child hood and recived Anti T.B medication for several time admitted in hospital complaining of progressive left side Back pain over 7 mounth Prior to admission, That associated with an enlargement of soft tissue mass in the region of her discomfort. her vaccination was completed. She had intermittent subjective fever, chills and night sweats. Physical examination, Revealed a 5 × 4cm, no tender, non fluctuated mass palpated in at the superior margin cf the left iliac crest without costoverteberal angle tenderness . Other Examinations were normal .except several lymphadenopathy on neak, axilla and inguinal area.

WBC counth was 5400/mm² (lymph: 61%) Hb, PLT, ESR ,Biochemical test and CXR were normal.PPDtest was negative. Sonography of the abdomen. Performed on admission revealed a hypo echo mass with size of 19 × 21 × 80 mm on left psoas muscle with pressure effect on left ureter and also thoracho lumber MRI revealed no involvement of vertebral column.

The left psoas was aspirated but no pus drinaged. but Biopsy was compatible with tuberculosis .

The patient treated with INH. Rifampin. Ethombuthol and pyrozinomide.

After that the PT. underwent surgical Debridment and lacolated abscess and Necrotic tissue on Psoas muscle were drained, but AFB smear and PCR and culture were negative

CONCLUSIONS:

medical treatment continues to be the cornerstone of treatment for psoas abscesses caused by M. tuberculosis(7).

Topic: Bacterial infections

Paper number: 1018

Presentation type requested: Poster Presentation

TUBERCULOSIS OR MALIGNANCY? A CASE REPORT

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BACKGROUND AND AIMS: Tuberculosis is today a more frequent diagnosis in Sweden because of increasing immigration from high prevalence countries. The diagnosis must be kept in mind. It is, however, important to be aware of other diagnoses at the same time. **METHODS:** Retrospective review of a clinical case. **RESULTS:** A fourteen year old boy with ethnic origin from Somalia, born in Sweden, is admitted to the hospital with two months of cough, weight loss, enlargement of lymph nodes of the neck as well as back-pain since two weeks. BCG vaccinated as infant, scare negative. He has no known contact to tuberculosis. TST negative, Quantiferon positive, ESR: 72, HIV sero-negative.

Imaging studies will be presented with pathology in chest radiography, ultrasound of abdomen and MRI thorax and spine. Bronchoscopy and gastric aspiration showed negative results for PCR and cultures of tuberculosis.

Results from histology of nodular biopsy supported the diagnosis of malignancy, Hodgkin's lymphoma.

The treatment was shifted from tuberculostatic to chemotherapy. The boy is improving.

CONCLUSIONS: Not all youngsters with background from Somalia and symptoms as above have tuberculosis. Lymphoma is not unusual in this age. Malignancy should be taken into consideration as differential diagnosis.

Topic: Bacterial infections

Paper number: 1028

Presentation type requested: Poster Presentation

CYTOPATHOGENECITY AS BIOLOGICAL PROPERTY OF CAMPYLOBACTER

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BACKGROUND AND AIMS: The purpose of this work was to study of the cytopathogenic activity (CPA) in vitro to intervened cellular culture HEP-2 of Campylobacter genus bacteria. **METHODS:** CPA was studied in 196 Campylobacter strains isolated from different sources. 24-hours bacteria cultures grown at the temperature of 42°C in microaerophilic gas on ferrum-erythrit agar were used in the experiment. Tenfold dilution of microbe suspension in concentration 10¹ – 10⁸ colony producing units (CPU) per milliliter were put simultaneously into 4 test-tubes with monolevel HEP-2 for each solution. Evaluation and calculation of CPA₅₀ was performed in accordance with the Kerber's method after 48 hours of incubation. According to the level of cytopathogenicity Campylobacter strains were divided into highly cytopathogenic with CPA₅₀ within the limits of 0,1x10⁸ – 1,0x10⁹; cytopathogenic: 0,1x10¹⁰ – 1,0x10¹¹ and acytopathogenic: ≥0,1x10¹². **RESULTS:** It was determined that 84,7 % of the studied strains had CPA on the cellular culture. 31,6% of there are highly cytopathogenic; 53,1% are cytopathogenic, and 15,3% are acytopathogenic. CPA was determined as follows: 94,7% of clinical isolates; 91,2% of hens' strains; 85,3% of pigs' strains; 83,3 % of calves' strains and 75% of the environment's objects strains (p>0,05). **CONCLUSIONS:** It has been proved that cytopathogenicity is a biologic feature of Campylobacter genus bacteria irrespective of a source of its isolation. Certain quantity of acytopathogenic strains (15,3%) certifies that cytopathogenicity is not only a determinant of pathogenicity of these agents.

Topic: Bacterial infections

Paper number: 1031

Presentation type requested: Oral Presentation

BILATERAL BLOODY OTORRHOEA: DIAGNOSTIC DILEMMAS

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BACKGROUND AND AIMS: We present the case of a 3 year old boy admitted to an acute paediatric unit, with a 9 day history of bilateral bloody otorrhoea, fixed torticollis and cervical lymphadenopathy. **METHODS:** Examination revealed hepatosplenomegaly, with a pancytopenia. Ear swabs grew metronidazole sensitive anaerobes. The patient became increasingly septic requiring invasive ventilation and ionotropic support. Computed tomography and magnetic resonance imaging confirmed a large retropharyngeal abscess with bilateral mastoiditis. Bilateral cerebellar infarcts and a right venous sinus thrombosis were also noted. Drainage of the retropharyngeal abscess and bilateral mastoidectomy was performed. Intra-operative pus was found to be sterile on primary and secondary culture. A bone marrow aspirate did not reveal acute leukaemia, but did show significant numbers of blasts and atypical cells. **RESULTS:** Initial antimicrobial therapy of flucloxacillin and ceftriaxone was changed to meropenem pre-operatively. The patients' recovery was complicated by a right sided sinus draining serosanguinous fluid. On day twenty five of therapy, the patient had improved clinically and intravenous meropenem was changed to oral clindamycin. 16S rRNA PCR was performed on a sample of discharge fluid, using published primers. Sequencing of the PCR product confirmed *Fusobacterium necrophorum*. As the organism was not cultivable in our hands, susceptibility testing was not performed. A second bone marrow aspirate demonstrated left shift with normal cytogenetics, although reticular staining was noted. Four months after follow-up, the patient is clinically well, with no residual neurological or haematological problems. **CONCLUSIONS:** This case highlights the fact that Lemierre's disease poses diagnostic challenges, and emphasises the importance of molecular methods.

Topic: Bacterial infections

Paper number: 1050

Presentation type requested: Oral Presentation

INFECTION MARKERS IN CRITICALLY ILL NEONATES, INFANTS AND SMALL CHILDREN WITH SUSPECTED SEPSIS

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BACKGROUND AND AIMS: Early diagnosis of sepsis in neonates and infants is difficult, but crucial for optimal management. The aim of this project was to evaluate the diagnostic accuracy of different infection-markers to identify patients with sepsis. **METHODS:** All patients <2 years with suspected sepsis were included in the project during a 36-month period. The first evaluation included white blood cell count (WBC), IT-ratio, CRP, lactate, IL-8 and blood culture. A second blood sample was collected within 12-24 hours. **RESULTS:** 1225 children were admitted to our ICU, including 303 term or preterm neonates and infants. 65 episodes of sepsis were suspected in 47 patients. Based on the test-results, episodes were divided into 3 groups: probable sepsis in neonates (group 1, n=24), probable sepsis in infants and in small children <2 years (group 2, n=32), and localized/viral infection in infants (group 3, n=9).

First sample: Comparing groups 1 & 2 with group 3, significant differences were found for IT-ratio ($p=0.014$), IL-8 ($p=0.005$) and lactate ($p=0.028$). Significant difference for IT-ratio ($p<0.001$) but not for CRP, IL-8 and lactate was found between groups 1 and 2 (Mann-Whitney-Test).

Second sample: Significant increase in CRP ($p<0.001$) and decrease of IL-8 ($p<0.001$) and lactate ($p=0.005$) in comparison with the first sample. Significant correlation between lactate/IL-8 in both samples ($r=0.71$), and lactate/CRP ($r=0.33$) in the second sample.

CONCLUSIONS: IL-8 proved to be a good sepsis-marker with early increase and rapid decrease under antibiotic therapy. CRP showed delayed reaction. IT-ratio was a useful parameter in neonates.

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Paper number: 1054

Presentation type requested: Oral Presentation

PREVALENCE OF GROUP C AND G STREPTOCOCCUS IN CHILDREN WHO HAVE ACUTE TONSILLOPHARYNGITIS SYMPTOMS

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BACKGROUND AND AIMS: Group C and G streptococcus cause acute tonsillopharyngitis with symptoms like group a streptococcus. These types of streptococcus can not be treated effectively because it is not confirmed by rutin throat culture.

This study was planned to determine the prevalence of group C and G streptococcus in the cases acceded acute tonsillopharyngitis.

METHODS: 172 children with acute tonsillopharyngitis symptoms participated cross sectionally in study between December 2006 and July 2007. Throat culture samples were in bloody agar without any delay and grouping according to lancefield latex agglutination. **RESULTS:** 172 children who had diagnosis of acute tonsillopharyngitis were between the age of 2-16 (mean age 8+-4) and the ratio of F/M: 0.8. Causes of admission to hospital were respectively 96.5 % sore throat and 83.1 % fever. 61.6 % of all cases had headache and 37.2 % of stomachache or vomiting. In the physical examination we detected exudative tonsillitis in 74.4 % and laryngitis 37.7 %.

Throat culture findings were 19.1 % group a, 3.4% group C, 1.7 % group B, 1.7 % group F, 1.1% group G

CONCLUSIONS: Group C and G streptococcus are such microorganisms that should be treated. In our country group C and G streptococcus frequently have pyogenic and immune complications. So we think it is necessary to isolate the group C and G streptococcus from the throat culture.

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Paper number: 1057

Presentation type requested: Poster Presentation

IN VITRO INFERIORITY OF CEFTAZIDIME COMPARED WITH OTHER B-LACTAMS FOR VIRIDANS GROUP STREPTOCOCCUS BACTERIAEMIA IN PAEDIATRIC ONCOLOGY PATIENTS

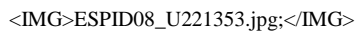
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BACKGROUND AND AIMS: Viridans Group Streptococcus (VGS) is a leading cause of bacteraemia in paediatric oncology patients with Acute Myeloid Leukemia and following Hematopoietic stem cell transplant. **METHODS:** We identified all positive blood cultures for VGS in oncology patients from May 2004 to April 2007. Etest analysis of 32 original frozen isolates was performed for penicillin (PEN), cefotaxime (CTX), ceftazime (CAZ) and piperacillin/tazobactam (PIP/TAZ). **RESULTS:** PEN MIC was predictive for CTX and PIP/TAZ MIC's. On the other hand, MIC for CTZ was consistently higher for each of the isolates (table 1). The geometric mean MIC for CTZ was 9, 12 and 19 folds higher than PEN, PIP/TAZ and CTX respectively. Susceptibilities using CLSI breakpoints showed the following: PEN S=72%, I=16%, R=12%; CTX S=78%, I=7%, R=15%. In extrapolating published breakpoints for CTX, CAZ data showed: S=59%, I=13, %, R=28%. Similarly, using PEN breakpoints for PIP/TAZ showed: S=66%, I=19%, R=15%. There was no temporal trend in susceptibilities observed during the study. **CONCLUSIONS:** These results underscore the in vitro inferiority of ceftazidime compared with others β -Lactams for VGS blood stream infections in patients with febrile neutropenia.



Topic: Bacterial infections

Paper number: 1061

Presentation type requested: Oral Presentation

PNEUMONIA WITH HIGH PROCALCITONIN LEVEL AND PNEUMOCOCCAL VACCINE IN FRANCE : A 5-YEARS STUDY

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BACKGROUND AND AIMS: Procalcitonin (PCT) is high in pneumococcal pneumonia (PCT > 4 ng/ml in 10/11 patients with positive blood culture, ADC 2001) and can be used for diagnosis.

Objective of the study: To determine prevalence of community-acquired pneumonia with high PCT among hospitalized children from emergency department in a French hospital from 2003 to 2007, postulating that PCT > 4 ng /ml is a good marker of pneumococcal pneumonia.

METHODS: During these 5 years, 3% (in 2003) to 70% (in 2007) of these children were partially or totally vaccinated with Prevenar. PCT was performed at admission in 230 children from 1 months to 15 years with a clinically severe CAP requiring hospitalization. **RESULTS:** The rate of children with CAP and PCT > 4 ng/ml decreased during these 5 years : 36% in 2003 to 18% in 2007, with a more important decrease in children < 2 years of age (11,7 to 2%). In 2007, 7/9 patients with PCT >4 were aged 2 to 5 years, attending day care center or school and were fully vaccinated. Recently, it was demonstrated in vaccinated patients from French day-care centers a dramatic increase of non-vaccine pneumococcal serotypes in nasopharyngeal carriage (mainly 19A) **CONCLUSIONS:** Our hypothesis is that in areas with high rate of children attending day care centers , pneumococcal serotypes not included in vaccine could determine pneumococcal pneumonia with high PCT level.

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Paper number: 1070

Presentation type requested: Oral Presentation

COMPARISON OF BINAX NOW URINE ANTIGEN TEST AND BLOOD PNEUMOCOCCAL PCR FOR DETECTION OF INVASIVE PNEUMOCOCCAL DISEASE IN MALAWIAN CHILDREN

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BACKGROUND AND AIMS: The definitive diagnosis of invasive pneumococcal disease (IPD) is difficult in culture-negative cases. The study aimed to compare the Binax NOW Urine Antigen Test and quantitative pneumococcal blood PCR for the detection of IPD in Malawian children. **METHODS:** Children who presented with meningitis and pneumonia were recruited as cases and healthy asymptomatic children as controls. A nasopharyngeal swab (NPS), urine sample for Binax NOW antigen testing and a blood sample for pneumococcal PCR were collected. **RESULTS:** We recruited 118 asymptomatic controls and 77 children with meningitis or pneumonia (of which 48(62%) had confirmed IPD). In the first 88 controls the NPS was performed before the blood sample, 66/88 (75%) had a positive pneumococcal PCR, and median pneumococcal bacterial load was 586 copies/ml (range 0 to 511,518 copies/ml). In the next 30 controls the NPS was performed after the blood sample, 5 (17%) had a positive pneumococcal PCR, with bacterial loads range 0 to 263, 597 copies/ml. Binax was positive in 22/50(44%) controls with pneumococcal carriage and 35/37 (95%) cases with IPD.

For predicting IPD	Sens	Spec	PPV	NPV
BINAX	95%	70%	70%	95%
Pneumococcal PCR	77%	91%	88%	82%

Using a cut-off of 100 copies/ml, pneumococcal PCR had an AUC of 0.85, sensitivity of 77%, specificity 91%, PPV 88%, NPV 82%, in diagnosing IPD.

CONCLUSIONS: BINAX has a high sensitivity and NPV but a high false positive rate for detecting IPD. Blood pneumococcal DNA with a cut-off bacterial loads above 100 copies/ml is a more reliable test for detecting IPD.

Topic: Bacterial infections

Paper number: 1072

Presentation type requested: Oral Presentation

THE NEUROPEPTIDES SUBSTANCE P (SP), CALCITONIN GENE RELATED PEPTIDE (CGRP) AND NEUROPEPTIDE Y (NPY) IN THE PATHOPHYSIOLOGY OF MENINGOCOCCAL DISEASE.

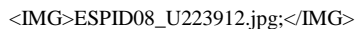
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BACKGROUND AND AIMS: To assess the role of neuropeptides in the pathophysiology of meningococcal disease (MCD). **METHODS:** Children presenting to Alder Hey Children's Hospital over a 19 month period, with clinically suspected MCD, were recruited. Blood was collected on admission and concentration of neuropeptides in plasma was determined using commercial ELISA's. **RESULTS:** Between October 2004 and May 2006, 70 children presented with suspected MCD. 38 children had confirmed or probable MCD, 32 children had a final diagnosis of probable viral illness; these were compared to 40 control patients with no evidence of infection. Data are presented in the table as medians and interquartile ranges.

CGRP levels were higher in the children with MCD compared to the patient group without MCD and controls ($P < 0.01$). SP levels were lower in the children with MCD and those without MCD compared to the controls ($P < 0.001$). NPY levels were significantly lower in the children with MCD compared to those without MCD ($P < 0.01$), whom had lower NPY levels compared to the controls ($P < 0.001$). SP was significantly lower in those children with more severe disease (GMSPS of ≥ 8).

CONCLUSIONS: CGRP has anti-inflammatory activity; SP and NPY, pro-inflammatory. Our results support the concept that the neuroendocrine system, through the release of CGRP and inhibition of SP may exert a critical role in the pathogenesis of sepsis, NPY release being modulated to attenuate the inflammatory response.



Topic: Bacterial infections

Paper number: 1073

Presentation type requested: Oral Presentation

TAUROLOCK™ SIGNIFICANTLY REDUCES CATHETER-ASSOCIATED GRAM POSITIVE INFECTIONS IN PEDIATRIC CANCER PATIENTS

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BACKGROUND AND AIMS: Taurolidin/Citrate (TauroLock™), a non toxic antimicrobial lock solution, may prevent BSIs due to Gram-positive bacteria (CoNS/MRSE) in pediatric cancer patients with long term intravascular catheters (CVAD).
METHODS: Single center prospective 48-months cohort study comparing all patients receiving anticancer chemotherapy from April 2003 to March 2005 (group 1, heparin lock with 200 IU/ml sterile normal saline 0.9%; Canusal® Wockhardt UK Ltd, Wrexham, Wales) and all patients from April 2005 to March 2007 (group 2; taurolidine 1.25% / Sodium Citrate 4%; TauroLock™, Tauropharm, Waldbüttelbrunn, Germany).
RESULTS: In group 1 (heparin), 90 patients had 98 CVAD in use during the surveillance period. Three of these had to be removed because of a Gram-positive BSI (MRSE) in Ports. 14 (47% of all BSI) were allocated to the category 'primary Gram-positive BSI due to CoNS (n=4) or MRSE (n=10)'. The corresponding incidence density (ID; events per 1000 inpatient CVAD-utilization days) was 2.30. In group 2, 95 patients had 101 CVAD in use during the surveillance period. No CVAD had to be removed because of a 'primary Gram-positive BSI due to CoNS or MRSE'. Only 3 (11% of all) BSI were due to CoNS. The corresponding ID was reduced significantly to 0.43 (P=0.003).
CONCLUSIONS: Our investigation confirmed that the use of Taurolidin/Citrate (TauroLock™) significantly reduced the numbers and incidence density of primary catheter-related BSIs due to CoNS and MRSE in pediatric cancer patients. This displays an important impact from the perspective of the patients and their families but also in significant in terms of costs.

Topic: Bacterial infections

Paper number: 1074

Presentation type requested: Oral Presentation

BLOODSTREAM INFECTIONS IN A GERMAN PEDIATRIC ONCOLOGY UNIT: PROLONGATION OF INPATIENT TREATMENT AND ADDITIONAL COSTS

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BACKGROUND AND AIMS: Bloodstream infections (BSI) substantially increase the costs of care in pediatric inpatients. Sufficient data on the prolongation of hospital stay and the corresponding additional costs related to bloodculture-positive BSI in pediatric cancer patients are lacking. **METHODS:** Retrospective single-center matched cohort study. Clinical data from 43 pediatric cancer patients with bloodstream infection (BSI) were compared with 43 thoroughly matched control patients without BSI. **RESULTS:** BSI led to a median additional length of inpatient treatment of 12 days (IQR, 8.5-16 days), accounting for median additional expenses of € 4,400 (IQR, € 3,145 – 5,920) per patient. This corresponds to a median cost expense of 6,072 (IQR, 4,340 – 8,169) US Dollar. **CONCLUSIONS:** BSI meant impaired quality of life for the patients and their families and substantially increased financial resources required for BSI treatment. These data compiled from a pediatric cancer unit may be utilized to estimate the cost benefit ratio of targeted preventive measures.

Topic: Bacterial infections

Paper number: 1075

Presentation type requested: Poster Presentation

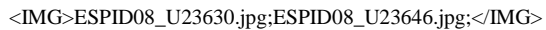
A COMPARISON OF SOLUBLE TREM (STREM), PROCALCITONIN AND C-REACTIVE PROTEIN IN THE DIAGNOSIS OF CHILDREN PRESENTING WITH SUSPECTED MENINGOCOCCAL DISEASE.

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BACKGROUND AND AIMS: To compare sTREM, PCT and CRP in diagnosing meningococcal disease in children presenting with a fever and petechial rash. **METHODS:** Children presenting to Alder Hey Children's Hospital over a 19 month period, with clinically suspected MCD were recruited. Blood was collected on admission and concentration of analytes was determined using commercially available methods. **RESULTS:** Between October 2004 and May 2006, 70 children presented with suspected MCD. 38 children had confirmed or probable MCD, 32 children had a diagnosis of probable viral illness; these were compared to 40 controls. Data are represented as median values. TREM, PCT and CRP were significantly higher ($P < 0.001$) in those children with MCD compared to those children without MCD and control patients.

Plasma PCT had the highest discriminative value, with an area under the receiver-operating characteristic (ROC) curve (AUC) of 0.92, followed by TREM (AUC, 0.87) and CRP (AUC, 0.84). A cut off of 15 pg/mL TREM yielded a sensitivity of 92% and a specificity of 63%. At a cut off of 2ng/mL PCT yielded a sensitivity of 97% with a specificity of 75%. **CONCLUSIONS:** sTREM is increased in children with MCD. A high sTREM concentration is a marker of bacterial infection but is less sensitive and specific than PCT. PCT predicts MCD in children presenting with a fever and a non-blanching rash with a greater degree of accuracy.



Topic: Bacterial infections

Paper number: 1079

Presentation type requested: Poster Presentation

PIPERACILLIN/TAZOBACTAM RESISTANCE OF ESCHERICHIA COLI AND KLEBSIELLA PNEUMONIAE: AN EMERGING PROBLEM OF COMPLEX MUTANT TEMS (CMT)-TYPE BETA-LACTAMASE ?

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BACKGROUND AND AIMS: To reduce extended-spectrum β -lactamase (ESBL) prevalence in our institute, the use of extended-spectrum cephalosporins was restricted and use of β -lactam/ β -lactamase inhibitor such as piperacillin/tazobactam (TZP) has been encouraged since 2002. The intensive use of inhibitors could be followed by an evolution of β -lactamase. Recently, CMTs that combine the inhibitor-resistant TEM- and ESBL-type substitutions have been identified in Enterobacteriaceae and showed a high level of resistance to inhibitors. **METHODS:** The antibiotic susceptibility was determined by the disc diffusion method and/or E-test. Types of ESBLs or AmpC β -lactamases were identified by analytical IEF, PCR for and/or sequencing of β -lactamase genes. **RESULTS:** From 1999 through 2005, a total of 252 isolates of *E. coli* (n=128) and *K. pneumoniae* (n=124) were isolated from blood, and the susceptibility to TZP did not decrease significantly despite increased use of TZP. Overall, 6.7% isolates including 3.1% (4/128) of *E. coli* and 10.5% (13/124) of *K. pneumoniae* were non-susceptible to TZP. Among TZP-non-susceptible isolates, AmpC β -lactamases were detected only in 2 isolates of *E. coli* and 4 isolates of *K. pneumoniae*. The remaining 2 isolates of *E. coli* produced both TEM-52 and TEM-1-like with pI 5.4; and *K. pneumoniae* (n=7) produced both TEM-1-like with pI 5.4 and SHV-12 or SHV-2a or CTX-M-14. Additionally, 2 isolates of *K. pneumoniae* did not detect as ESBL-producers because of their high level of resistance to β -lactamase inhibitor. **CONCLUSIONS:** *E. coli* and *K. pneumoniae* producing phenotypical CMTs came into the limelight in Korea, which could be an emerging problem for ESBL detection.

Topic: Bacterial infections

Paper number: 1094

Presentation type requested: Poster Presentation

PAEDIATRIC BACTERAEMIA; A 'POSITIVE' CHANGE?

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BACKGROUND AND AIMS: Bacteraemia is an important cause of mortality and morbidity in children. The study aims to identify trends in aetiology. **METHODS:** The majority of hospital microbiology laboratories within England and Wales voluntarily report clinical, microbiological and demographic data on bacteraemia to the HPA. Cases reported from children aged 0-15 years, within between 1997 and 2006 were analysed. **RESULTS:** Over 63,000 bacteraemias were reported over the 10 year period, with 54% of all infections reported in males (84.79/100,000 population) compared to females (71.58/100,000).

Younger children predominated with 75% of cases in children under 5, and a third of these from infants aged less than one month.

Although over 100 species of bacteria were reported, over half the cases were accounted for by the 4 gram-positive species namely coagulase-negative staphylococci (CoNS) (21%), *S. aureus* (13%), pneumococci (10%) and viridans streptococci (7%).

The importance of specific organisms changed over time and varied between age groups. For example, meningococci which were the dominant pathogen in children aged >28 days between 1998-2000, were superseded thereafter by gram-positive bacteria, particularly CoNS. The overall proportion of gram-positive infections ranged from 80% in children aged <28 days, to 68% in 5-16 year olds, with a marked increase in *S. aureus* seen in the latter age group, increasing from 3.52/100,000 in 1997 to 4.20/100,000 in 2006. **CONCLUSIONS:** Paediatric bacteraemia has a complex and evolving aetiology, with gram-positive species increasing in importance. This has implications for national antibiotic treatment guidelines for the septic child.

Topic: Bacterial infections

Paper number: 1096

Presentation type requested: Oral Presentation

RECOGNITION OF SIRS FOR EARLY SEPSIS DIAGNOSIS IN PEDIATRIC HOSPITAL

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BACKGROUND AND AIMS: Sepsis has been recognized as a significant health problem among children population. In Latvia during 1995 – 2000 lethal outcomes of sepsis were observed in 24.4% cases, due to delayed diagnosis of sepsis. In the International pediatric sepsis consensus conference sepsis was defined as SIRS associated with suspected or proven infection. The aim of this study was to assess the prevalence of SIRS and sepsis among hospitalized children with fever in the Children's Clinical University hospital. **METHODS:** Two time periods, each 24 h, randomly chosen were used in descriptive prospective point prevalence study and patients were followed-up until discharge from hospital. All children (n=943) treated in hospital were screened and those with fever (n=92) were included in the study. The prevalence of SIRS among patients with fever was detected with 95% CI. **RESULTS:** Results: Overall SIRS was diagnosed in 72% (n=66) patients with fever, 8 % (n=5) of SIRS patients developed sepsis. 50% (n=8) of children with fever from surgical, 75% (n=12) of children with fever from pediatric non infectious and 88% (n=44) children from infectious diseases wards had SIRS. All children who developed sepsis were from infectious diseases wards. **CONCLUSIONS:** SIRS prevalence among children with fever was $72\pm 9,2\%$. SIRS had been present in all children who developed sepsis. Timely recognition and diagnosis of SIRS in every day clinical practice could be applied as a simple sepsis screening method.

Topic: Bacterial infections

Paper number: 1107

Presentation type requested: Poster Presentation

PREVALENCE OF RICKETTSIAL INFECTIONS IN PAEDIATRIC PATIENTS IN CHANIA

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BACKGROUND AND AIMS: Rickettsial infections are considered uncommon in childhood, but are probably underestimated as clinical presentations are often nonspecific.

We aim to analyze the clinical and laboratory characteristics, hospital course and responsiveness to therapy of hospitalized children diagnosed with rickettsioses.

METHODS: Retrospective analysis of 52 hospitalized children diagnosed with rickettsioses from 01-2005 to 12-2007.

RESULTS: All patients were hospitalized for fever of unknown origin, after a mean of 5+/- 2 days. 52% were girls and 48% were boys. The mean age was 8,95 years old. Most cases, (60,46%), were reported in July, August, September. 59,50% came from rural areas with daily contact with animals (cats, dogs, sheep, goats) and 40,50% from urban areas. Common clinical features were: fever (100%) with a mean of 9,2 days (5-23 days), maculopapular rash (65,2%) appearing on the fifth day of fever, hepatosplenomegaly (60,46%), anorexia (40,3%), headache (40,1%), myalgias (23%), arthralgias (23%), cough (22%), lymphadenitis (17,3%), abdominal pain (21%), diarrhoea (13,4%), vomiting (7,7%) and neurological involvement (1,9%). Laboratory abnormalities included: leukopenia (45%) thrombocytopenia (50%), elevated serum transaminases (57,2%), hyponatremia (30%) and elevated ESR (25%). In 29 children was administered doxycycline orally (30mg/Kg÷2), in 11 chloranfenicol iv (50-100mg/Kg÷4), in 7 ciprofloxacin orally, in 3 cefotaxime iv (150mg/Kg÷3) and in 2 penicilline G iv (150.000IU/Kg÷4). All children became defervescent on the third day of treatment. One presented with ataxic gait on the ninth day. The serological results were: R.Typhi (83%), R Conorii (12,50%) and Coxiella Burnetii (4,5%).

CONCLUSIONS: From our experience, rickettsioses is not an uncommon disease and should be considered in cases of prolonged fever.

Topic: Bacterial infections

Paper number: 1109

Presentation type requested: Poster Presentation

SHIGELOSIS IN CHILDREN - THE CHIMIOSENSIBILITY OF SHIGELLA CORRELATED WITH ANTIMICROBIAL TREATMENT

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BACKGROUND AND AIMS: Bacterial dysentery and dysentery-like syndrome is a frequent cause of hospitalized on child and newborn. In this retrospective study we have propose to established the susceptibility of strain of Shigella isolates on antimicrobial agents. **METHODS:** We have studied the cases of bacterial dysentery and dysentery-like syndrome admitted in Pediatric Department of National Institute of Infectious Diseases €œMatei Bals€ Bucharest. The diagnostic of bacterial dysentery was established with clinical parameters, biological markers and stool culture. The isolates of Shigella strain were identified with specific immune serum and the test of sensibility on antimicrobial drugs with Expression ABG-5 method. We were studied the sensibility of Shigella to 8 antimicrobial agents use in shigellosis treatment: ampicillin, colistin, cotrimoxazole, tetracycline, nalidixic acid, ciprofloxacin, ceftriaxone and ertapenem. **RESULTS:** During 2007, in our institute, hospitalized 3027 children with acute diarrhea disease. 323 cases were admitted with dysenteric syndrome. We were isolated 24 strains Shigella isolates on children hospitalised with dysentery-like enterocolitis: 11 isolates Shigella Flexneri and 13 Shigella sonnei. The sensibility of Shigella strain on antimicrobial agents were: ciprofloxacin, colistin and ertapenem €“ 100 %, ceftriaxone and nalidixic acid €“ 91, 6 %, tetracycline €“ 75 %, cotrimoxazole €“ 37,5 % and ampicillin €“ 25 %. **CONCLUSIONS:** The Shigella strains were susceptible to ciprofloxacin, ceftriaxone, colistin, nalidixic acid and ertapenem. Ampicillin and cotrimoxazole are not recomanded on dysentery-like enterocolitis of children because Shigella is resistant or low sensibility to this antimicrobial agents.

Topic: Bacterial infections

Paper number: 1110

Presentation type requested: Poster Presentation

SUSCEPTIBILITY OF STREPTOCOCCI TO ANTIBIOTICS AND BIOCIDES ISOLATED FROM SAUDI ARABIA AND UK

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BACKGROUND AND AIMS: The assessment of the in vitro activities of 16 antibiotics, 10 biocides and 6 metallic compounds against clinical isolates of *Streptococcus pyogenes* (group A) from UK and Saudi Arabia and its control strains from UK.

METHODS: 16 antibiotics (benzylpenicillin, erythromycin, lincomycin, methicillin, rifampicin, trimethoprim, vancomycin, ampicillin, chloramphenicol, fucidic acid, gentamicin, kanamycin, nalidixic acid, novobiocin and streptomycin), 10 biocides (3 phenolics: chlorocresol, cresol, phenol; 4 parabens: methyl, ethyl, butyl and propyl esters of para-4-hydroxybenzoic acid); a bisbiguanide: chlorhexidine diacetate; 2 quaternary ammonium compounds: cetylpyridinium chloride and benzethonium chloride) and 6 metallic compounds (mercuric chloride, phenylmercuric nitrate, cadmium chloride, cupric chloride, zinc chloride and silver nitrate) were tested by the disc diffusion method and the determination of minimal inhibitory concentration (MIC).

RESULTS: All strains of *Streptococcus pyogenes* (group A) were β -lactamase-negative. All British strains were sensitive to all of the antibiotics tested, except gentamicin and streptomycin. Some of the Saudi strains were resistant to gentamicin and erythromycin and all were resistant to lincomycin. The British and Saudi Arabian strains showed the same order of response to phenols and parabens. Similarly, the British and Saudi Arabian strains were equally sensitive to phenylmercuric nitrate, however, response to other metallic compounds were variable.

CONCLUSIONS: This is the first report from Saudi Arabia about susceptibility to biocides. It is concluded that the isolated Group A *Streptococcus* strains were resistant to most of the biocides studied in this paper.

Topic: Bacterial infections

Paper number: 1122

Presentation type requested: Oral Presentation

EVIDENCE FOR TRANSMISSION OF VANCOMYCIN RESISTANT ENTEROCOCCI IN NICU AND PEDIATRIC WARDS IN IRANIAN HOSPITALS

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BACKGROUND AND AIMS: Neonates, particularly those born prematurely, are at an increased risk of bacterial infection. Enterococcus spp. are a component of the human intestinal flora and may be found naturally in the birth canals of women. Intrapartum antibiotic prophylaxis of pregnant women with vancomycin, has led to increased VRE in the parturient and her child. As bacterial strains become increasingly resistant to standard antimicrobial therapy, measures to control and prevent this problem are essential. Current effort have focused on monitoring the vancomycin resistant enterococci in NICU and Pediatric wards in Iran.

METHODS: The enterococci isolates were collected from patients in three hospitals in Tehran. The structure of vancomycin resistance genes of VRE isolates were studied by PCR amplification of the regions of ORF1, ORF2, vanS-vanH, vanHAX, vanX-vanY, vanY-vanZ, and vanZ. The isolates were typed by Pulsed-field gel electrophoresis (PFGE).

RESULTS: Out of 50 VRE isolates, 4 were isolated from neonatal intensive care unit and Pediatric ward. All of 4 VRE isolates showed a high level vancomycin resistance ($MIC \geq 128$) and harbored vanA gene. The amplification of internal regions in vanA cluster exposed the presence of 3 types among the 4 isolates. Genotyping by PFGE using SmaI enzyme revealed the presence of 3 types.

CONCLUSIONS: The prevalence of VRE infections among NICU patients and Pediatric ward have been rare in Tehran. Two isolates collected from NICU and Pediatric wards showed two identical types with the same vanA gene cluster. This result may suggest a possibility of transmission of VRE isolates between two wards.

Topic: Bacterial infections

Paper number: 1125

Presentation type requested: Poster Presentation

COMPARATIVE PROTEOMIC STUDIES OF PLASMA FROM CHILDREN WITH PNEUMOCOCCAL PNEUMONIA

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BACKGROUND AND AIMS: Streptococcus pneumoniae is the primary pathogen causing community-acquired pneumonia in children. Despite the progress in medicine, the prevalence of complicated pneumococcal pneumonia became increased without apparent explanations. **METHODS:** We used a combination of techniques, including two-dimensional gel electrophoresis (2-DE), image analysis, and mass spectrometry (MS), to compare the plasma protein profiles from pneumococcal pneumonia children with different severities and healthy individuals. Complicated pneumonia was defined by the presence of pleural fluid parameters consistent with empyema, and/or a computed tomographic image compatible with necrotizing pneumonitis. **RESULTS:** Plasma samples from 14 children, 7 with complicated and the other 7 with uncomplicated pneumococcal pneumonia, were analyzed. The normal control group included 7 age-matched volunteers. By comparing the plasma proteins of patients with different severities using 2-DE and MS, 4 proteins with significant differences were identified. The up-regulated proteins were haptoglobin and immunoglobulin kappa chain C region. The down-regulated ones were apolipoprotein A-I (Apo-AI) and transthyretin. The alterations of haptoglobin and Apo-AI were further confirmed by enzyme-linked immunosorbent assay (ELISA) and Western blot. **CONCLUSIONS:** All these proteins, which showed significant changes in the complicated pneumonia group, are acute phase proteins (APPs). They are known to take part in the inflammation reaction, which implicates the active innate immune responses in severe infections of S. pneumoniae. Besides, the up-regulated haptoglobin, which protects lung tissues against oxidative damage by the clearance of hemoglobin, can also act as an inflammatory inhibitor. Thus, there is some mechanism that sustains the inflammation balance in the occurrence of complicated pneumococcal pneumonia.

Topic: Bacterial infections

Paper number: 1127

Presentation type requested: Oral Presentation

COMMUNITY-ACQUIRED COMPLICATED INTRA-ABDOMINAL INFECTIONS (CA-CIAI) IN CHILDREN HOSPITALIZED DURING 1995-2004 AT THE PEDIATRIC SURGERY DEPARTMENT

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BACKGROUND AND AIMS: To investigate the epidemiologic, clinical, microbiologic and therapeutic characteristics of CA-CIAI in children <15 years old. **METHODS:** Medical charts and microbiology data of all children hospitalized with CA-CIAI were retrospectively examined. CIAI were defined as infections extending beyond the viscus of origin into peritoneal space, with development of abscess/peritonitis. **RESULTS:** 123 patients (80% >5 years age) were included. 113 (92%) had complicated acute appendicitis (AA): 93/113, 82%, with perforation and 20/113, 18%, with gangrenous appendicitis. 12/123 (10%) patients underwent CT-guided percutaneous periappendicular abscesses drainage. Mean rate of CA-CIAI among AA patients was 10%. Positive intra-abdominal cultures were recorded in 97/108 (90%) evaluable patients. 65/97 (67%) patients had mixed bacterial growth. 190 pathogens (86% aerobes) were isolated. E. coli was the most common pathogen (94 isolates, 57%). The susceptibility of E. coli and Klebsiella to ampicillin was low (39% and 6%, respectively). In vitro amoxicillin/clavulanate (A/C) coverage of E. coli (81%) and Klebsiella (86%) was modest. 80/123 (65%) patients received ampicillin/gentamicin/ metronidazole (A/G/M) and 43 (35%) A/C. A/G/M was more appropriate microbiologically than A/C (3/80, 4%, resistant in vitro pathogens vs. 8/43, 19%, P=0.02). Post-operative complications occurred in 33/123 (27%) patients. Time till defervescence was shorter in periappendicular abscesses than in generalized peritonitis (6±4 vs. 4±3 days, P=0.009). **CONCLUSIONS:** 1) Most CA-CIAI occurred due to AA; 2) CA-CIAI rates among patients with AA were low; 3) Mixed flora was isolated from abdominal cavity in most cases and E. coli was the most frequent pathogen; 5) A/C provided only partial coverage for CA-CIAI pathogens.

Topic: Bacterial infections

Paper number: 1137

Presentation type requested: Oral Presentation

ANTIBIOTIC PRESCRIBING FOR OTITIS MEDIA IN CHILDREN IN UK PRIMARY CARE: HAVE THE NATIONAL GUIDELINES AFFECTED GP PRESCRIBING PRACTICE?

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BACKGROUND AND AIMS: Since autumn 1998 national guidelines have advocated reduced antibiotic prescribing for children with otitis media. The aim of this research was to investigate whether the national guidelines have affected GP prescribing practice. **METHODS:** A time-trend analysis was conducted using the UK General Practice Research Database. Children aged 3 months to 15 years registered with the GPRD between 1st January 1990 and 31st December 2006 were eligible for inclusion. The incidence of otitis media diagnoses and the proportion of affected children treated with antibiotics, over time and by age, was determined. **RESULTS:** 1,210,237 episodes of otitis media were identified: 68% (818,006) were treated with an antibiotic. 22% (267,335) of episodes were classified as acute otitis media, 85% (227,335) of which received an antibiotic. Incidence of treatment for any otitis media declined by 41% from 1995 and plateaued from 2000 onwards, largely predating the national guidelines. During the same period, prescribing for acute otitis media increased by 52% for children less than two years of age, with similar but weaker trends in older age-groups. Trends in prescribing closely paralleled diagnoses in all age-groups. **CONCLUSIONS:** We found no evidence that national guidelines reduced GP antibiotic prescribing for otitis media. The increase in prescribing for acute otitis media in association with the overall decline in prescribing for any otitis media may be explained by GPs attempting to justify treatment, particularly in young children. Parallel trends for prescribing and diagnoses suggest that the decision to treat drives the diagnosis of acute and non-acute otitis media.

Topic: Bacterial infections

Paper number: 1139

Presentation type requested: Oral Presentation

TRANSCRIPTOME PROFILES OF CHILDREN SUFFERING FROM MENINGOCOCCAL SEPSIS

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BACKGROUND AND AIMS: Meningococcal sepsis remains an important cause of childhood morbidity and mortality. It is widely appreciated that it is a complex disease, but most studies only assess the kinetics of a limited number of molecules. We conducted a microarray-based transcriptome study to analyse the kinetics of RNA expression during the course of meningococcal sepsis. **METHODS:** In this prospective case-control study, six children with (suspected) meningococcal sepsis and age, sex and ethnically matched controls were included. Blood was drawn for RNA isolation from lymphocytes, monocytes and granulocytes, as well as from whole blood on admission to the PICU and during the course of the disease. Affymetrix microarray technology was used to assess RNA expression profiles. **RESULTS:** On admission LCN2, LTF and IL1R2 expression were most increased (48-, 40- and 18-fold, respectively) when compared to controls, while KLRB1 and MME expression was decreased (8.5- and 7.4-fold, respectively). Expression profiles in lymphocytes were mostly decreased when compared to controls, while expression in monocytes, and whole blood overall showed increased expression. Besides expected differential expression in pro- and anti-inflammatory pathways, we observed increased expression of pathways involved in oxidative stress response, insulin receptor pathway, apoptosis, and protein ubiquitination pathway. The expression patterns differed significantly between the cellular subtypes. **CONCLUSIONS:** RNA expression patterns revealed a complex multiple pathway involvement in the pathogenesis of meningococcal sepsis with differential expression between leukocyte subtypes.

Topic: Bacterial infections

Paper number: 1146

Presentation type requested: Poster Presentation

PANSINUSITIS COMPLICATED WITH POLIMICROBIAL FACIAL AND PALATAL ABSCESES.

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BACKGROUND AND AIMS: Among the complications of sinusitis, those that involve the orbital region are the most frequent. Complications affecting palate region are uncommon. The differential diagnosis of palatal masses includes the palatal abscess, benign and malignant bone and salivary gland neoplasms, the benign neural tumors, and the traumatic or irritation fibroma. **METHODS:** a case of acute, severe bacterial pansinusitis complicated with facial and palatal abscess is herein reported. **RESULTS:** 15 year-old boy with history (seven days) of facial pain and purulent nasal discharge, fever and left-sided facial tumefaction. Clinical examination revealed nose and left lower eyelid oedema with tenderness to palpation in both left maxillary region and glabella, and a retropharyngeal tumour that protruded into the buccal cavity spreading across the midline. A CT scan was performed showing left pansinusitis, mainly affecting ethmoidal and maxillary sinus and left-sided facial and palatal abscesses. No signs of bone destruction or ocular involvement were observed. Leucocytosis and neutrophilia with left shift were present in blood tests and intravenous antibiotic therapy with amoxicillin clavulanate was started at that point. Surgical drainage of maxillary and palatal abscesses were performed with good clinical and radiological outcome. Blood culture were negative but abscess culture yielded *Streptococcus pneumoniae*, *S. viridans* and *Staphylococcus aureus*. **CONCLUSIONS:** Although orbital and intracranial are the commonest complications of acute bacterial sinusitis, processes affecting the palate area should be considered. Treatment must include surgical drainage and intravenous antibiotic therapy.

Topic: Bacterial infections

Paper number: 1149

Presentation type requested: Poster Presentation

ESBL IN PAEDIATRIC INTENSIVE CARE UNIT-THREE YEARS OF EXPERIENCE

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BACKGROUND AND AIMS: Extended-spectrum-beta-lactamase (ESBL)-producing pathogens are gaining in importance in microbial colonisation and infections in patients in paediatric intensive care units (PICU). The exceeding use of cephalosporine, lead to regional increased occurrence of ESBL like in teh area Zagreb/Croatia. Due to the geographic situation croatian children from this area suffering from heart failures are getting surgery in our hospital in Graz. Since these children are usually long time inpatients before their operation, they show a higher incidence of colonisation with ESBL and were the main part of our ESBL colonised patients. We want to describe our clinical experience with ESBL.**METHODS:** All patients aged between 0 and 16 years that had been admitted to the PICU between 2005-2007 showing a colonisation with ESBL pathogen, were included. Consequent infection control was conducted by using gloves and cloaks.

RESULTS: ESBL pathogens were detected in 21 patients. 17 patients were from croatia, 1 from iraque, and 3 from Austria. 20 patients suffered from heart failure, one patient had holoprosencephaly. 10 patients showed more than one ESBL pathogen. About 50% of the patients had Escherichia coli and Klebsiella about 25 % had Citrobacter, Enterococci and Proteus. 8 patients showed co-colonisation with Pseudomonas and 4 patients with MRSA. Nosokomial infections were not observed at PICU.**CONCLUSIONS:** ESBL was mainly imported from abroad. Consequent infection control and careful child care can prevent from nosokomial infections and from higher postoperative morbidity due to ESBL.

Topic: Bacterial infections

Paper number: 1154

Presentation type requested: Poster Presentation

TICK-BORNE BORRELIOSIS IN CHILDREN IN WESTERN SIBERIA

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BACKGROUND AND AIMS: Tick-borne borreliosis is one of the most widespread tick-borne infections in Western Siberia. With aim to research structure of clinical forms 233 cases of borreliosis in children 1-14 years of age after their having been treated at the Kemerovo Neurological Hospital between 2000 and 2007 were analyzed. **METHODS:** In each case diagnose was confirmed by serological tests. Paired samples of the blood serum were tested for the presence of antibodies to *B. burgdorferi* by means of ELISA. In all the cases tick-borne encephalitis was excluded serologically. **RESULTS:** Acute general infection syndrome as clinical form was the most frequent manifestation (92 cases – 39.5%). In 17 (7.3%) cases - erythema, in 15 (6.4%) cases - lymphadenopathy and in 13 (5.6%) cases - their combinations were dominant symptoms. Serous meningitis was in 74 cases (31.7%). In Bonnwarth syndrome (7 cases – 3%) clinical manifestation of meningitis was weakly expressed. Mononeuritis was in 9 cases (3.9%). Acute polyradiculoneuritis was in 6 cases (2.6%), in one of them there was myelopolyradiculoneuritis. Patient clinical conditions did not correlate to level of inflammatory changes of cerebrospinal fluid. **CONCLUSIONS:** According to results borreliosis in children was characterized by early forms with high quantity of general infection syndrome and meningitis. The disease in its duration is not characterized by specifically expressed periods. Chronic or relapsing borreliosis with erythema, arthritis and central nervous system impairment were not observed in children. In most of cases nonspecific manifestations were dominant in clinical picture.

Topic: Bacterial infections

Paper number: 1165

Presentation type requested: Oral Presentation

PREVALENT BACTERIAL INFECTIONS IN INTENSIVE CARE UNITS OF SHIRAZ UNIVERSITY OF MEDICAL SCIENCES TEACHING HOSPITALS, SHIRAZ, IRAN

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BACKGROUND AND AIMS: Intensive care unit (ICU) acquired infections can bring some degree of morbidity and mortality to the ICU patients. In this study the prevalent bacterial infections among ICU patients in two major university hospitals in Shiraz was investigated. **METHODS:** A cross sectional prevalence study was performed on all the patients hospitalized longer than 48 hours in a total of 8 intensive care units at two Shiraz university teaching hospitals. Samples were microbiologically cultured. Rates of infection and death, microbiological isolates and their resistance profile to most commonly available antibiotics were detected. **RESULTS:** 123 specimens from 89 patients aged 1 month to 80 years (38.3 ± 13.4) were studied. 46 patients (51.7%, 95%CI:41.3 -62.1%) showed infection based on culture and clinical finding. 43 patients (48.3%) had no defined type. 37 patients (41.6%) had more than one, and 9 patients (10.1%) had only one ICU-related nosocomial infections. The overall mortality rate for ICU acquired infections was 10.9% (5 patients) and bacteremia with gram-negative microorganisms being the cause of death. Gram negative bacteria were significantly more involved in infections than Gram- positive bacteria ($p < 0.05$). The most frequently reported infections were urinary tract (84.7%), respiratory tract (65.2%), wound (32.6%), and blood (23.8%). The most frequently isolated bacteria were *Pseudomonas* (39.1%) which was mainly sensitive to amikacin and ceftazidime. **CONCLUSIONS:** The potential effects of such rates of ICU infections and the outcome emphasize the importance of specific measures for infection control in critically ill patients in ICUs especially when using urinary catheters.

Topic: Bacterial infections

Paper number: 1175

Presentation type requested: Oral Presentation

GENETIC BASIS OF VI CAPSULE-NEGATIVE SALMONELLA ENTERICA SEROVAR TYPHI ISOLATES FROM CHILDREN IN KATHMANDU, NEPAL

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BACKGROUND AND AIMS: S. Typhi virulence factor (Vi) polysaccharide (ViPS) is used as a vaccine against typhoid fever. Despite reports of acapsulate S. Typhi in nature little information exists on the genetic basis for the non-expression of the capsule. We examined the presence of genes that encode ViPS, in acapsulate isolates of S. Typhi from children presenting with fever to Patan Hospital in Kathmandu, Nepal. **METHODS:** 4 of 68 isolates tested negative for the capsule in serological agglutination tests. Genomic DNA from these isolates was analysed using a novel, multiplex PCR detection assay. PCR analysis to detect the 5 capsular synthesis genes (tviA, tviB, tviC, tviD, tviE), 5 capsular transportation genes (vexA, vexB, vexC, vexD, vexE) and 4 regulatory genes (rcsB, rcsC, ompR, envZ) was also performed. **RESULTS:** All acapsulate isolates tested positive in the multiplex PCR assay; amplification of aroC and fliC pairs confirmed that the isolates belonged to the genus Salmonella and serovar Typhi respectively while amplification of vexB and tviB confirmed the presence of the viaB operon on the salmonella pathogenicity island 7 (SPI-7) in their genomes. Similarly, amplicons corresponding to each of the 14 genes were detected in all isolates tested. **CONCLUSIONS:** Although one isolate has been previously described as having a deletion of SPI-7, acapsulate S. Typhi isolates in this study demonstrate the presence of the 14 genes that influence the expression of the capsular polysaccharide. Mutations in the nucleotide sequence, phase variation in capsular expression or false-negative results in serological assays may account for the acapsulate phenotype of these isolates.

Topic: Bacterial infections

Paper number: 1178

Presentation type requested: Poster Presentation

THE PLACE OF BRONCHOSCOPY IN THE DIAGNOSIS OF TUBERCULOSIS

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BACKGROUND AND AIMS: The majority of children with tuberculosis infection develop no signs or symptoms at any time. Occasionally, infection is marked by low-grade fever and mild cough.

METHODS: Case: 6-year old boy was admitted to our emergency room with fever and cough. Chest radiography showed the right upper lobar consolidation. He had no contacts of people with confirmed or suspected contagious tuberculosis. The initial diagnosis was bacterial pneumonia and he treated with non-specific antibiotic therapy. Tuberculin skin test (TST) was negative (he had no BCG vaccination).

RESULTS: At the 9th day, ultrasonographic examination showed pleural effusion on the right. Diagnostic thoracentesis was performed and the antibiotic therapy was changed to teicoplanin + meropenem. The culture of pleural fluid was negative. Acid-fast smears, the PCR of the pleural fluid, smear staining of sputum and 3 consecutive morning gastric aspirates were also negative. His serum immunoglobulin levels and sweat test were in normal ranges. *Echinococcus* IHA was negative. In the 7th day of teicoplanin + meropenem therapy he had no clinical recovery and his chest CT showed a miliary pattern. On the 20th day of hospital admission he referred to bronchoscopy. The bronchoscopic findings revealed right endobronchial lymph node and acid-resistant bacteria was detected in bronchoalveolar lavage (BAL). We started the treatment of tuberculosis with 4 drugs and corticosteroid was initiated.

CONCLUSIONS: Satisfactory amelioration in clinical and radiological parameters was managed, with antituberculous treatment. This case was reported to emphasize that TST and other laboratory tests are not always helpful to diagnose the tuberculosis. Bronchoscopy is indicated if there is high clinical suspicion of tuberculosis even if the other tests are negative.

Topic: Bacterial infections

Paper number: 1185

Presentation type requested: Poster Presentation

PONCET DISEASE: REACTIVE ARTHRITIS DUE TO TUBERCULOSIS

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BACKGROUND AND AIMS: Musculoskeletal manifestations are the common form of tuberculosis (TB). Besides septic TB arthritis, rare examples of non-suppurative reactive arthritis have been described in association with TB known as Poncet's disease. **METHODS:** A case of arthritis with pulmonary tuberculous infection as a final diagnosis was presented in this report as Poncet's disease. **RESULTS:** A previously healthy nine-year-old boy was admitted to hospital with swelling and pain in his elbow. His complaints have begun two months ago, migratory oligoarthritis, involvement ankles and right elbow. His right elbow was swollen and tender. Laboratory work-up was done for the differential diagnosis of rheumatologic disease and was negative. Hilar lymphadenomegaly was seen on chest X-ray. The patient had BCG vaccination history and his induration of the tuberculin skin test (TST) was 18 mm. QuantiFERON-TB Gold was positive. Computed tomography of thorax showed subcarinal, bilateral mediastinal and hilar multiple lymph nodes. There is primary focus from upper lobe to the apical segment in right lung. Gastric aspirate culture is positive for Mycobacterium tuberculosis but synovial fluid Ziehl-Nielsen staining and cultures for TB were negative. Isoniazid, rifampin, ethambutol were given for pulmonary tuberculosis disease. In the family screening his father, a policeman, was diagnosed as tuberculosis. Arthritis was resolved after TB therapy. The large joint arthritis accompanying TB without any bacilli in synovial fluid was reactive to TB and was diagnosed as Poncet's disease. **CONCLUSIONS:** In conclusion, the differential diagnosis of patients at risk for TB presenting with arthritis should definitely include Poncet's disease.

Topic: Bacterial infections

Paper number: 1187

Presentation type requested: Oral Presentation

ERADICATION OF PSEUDOMONAS AERUGINOSA IN CYSTIC FIBROSIS PATIENTS

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BACKGROUND AND AIMS: Antibiotic intervention, commenced at first signs of colonisation, may delay chronic airway infection with *Pseudomonas aeruginosa* (PA), and thus may improve survival of cystic fibrosis (CF) patients. In this paper we present a retrospective analysis of our eradication strategy. **METHODS:** In 1999 we introduced an eradication regimen against PA into the clinical routine of our centre, consisting of iv. anti-PA therapy for three weeks, followed by oral ciprofloxacin for six weeks and twice daily inhaled anti-PA therapy for two years. Evaluation of this eradication regimen was done by microbiological studies from bronchoalveolar lavage (BAL) fluid two weeks after stopping oral ciprofloxacin and consecutive sputum samples every three months continued until today. **RESULTS:** We performed 37 eradication attempts at first PA positivity. In 31 patients, eradication therapy was successful, and the subsequent BAL study showed a PA negative result. In six patients, the subsequent BAL study still showed a PA positive result meeting the definition of persistent PA infection; three of these patients immediately underwent a second eradication therapy and then were PA negative. In addition, nine further eradication attempts were performed in seven patients when new acquisition of PA occurred. At present, 34 out of the 37 patients treated with the eradication regimen are still PA free. Their PA free period after successful eradication has a median duration of 51 months (range: 4 to 104). **CONCLUSIONS:** These findings indicate that PA may be eradicated successfully from the respiratory tract of CF patients by aggressive anti-PA therapy commenced at initial sputum PA positivity.

Topic: Bacterial infections

Paper number: 1190

Presentation type requested: Oral Presentation

HEALTHCARE USE AND SOCIETAL BURDEN DUE TO CHILDHOOD OTITIS MEDIA IN 7 EU COUNTRIES

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BACKGROUND AND AIMS: The burden of otitis media (OM) is substantial but difficult to assess due to varying medical practices, the multiplicity of healthcare providers and the number of cases not seeking medical help. **METHODS:** An internet-survey was conducted in 7 EU-countries: France (F), Great Britain (GB), Germany (D), Spain (E), Italy (I), the Netherlands (NL), Belgium (B). Questions regarding the most recent childhood-illness-episode included symptoms, medical-help sought, type of help, diagnosis given. Data were analyzed for OM-episodes. **RESULTS:** 14916 parents of children (<5 years) reported a child-illness-episode in the previous year, completing an e-mailed 17-question-survey. A total of 1479 OM-episodes were reported, the estimated annual prevalence ranged from 13.8% (GB) to 35.1% (F). The proportion of parents seeking medical help ranged from 47% (NL) to 88.7% (E). A general practitioner (GP) was most often consulted in F, GB, E, B, NL; a paediatrician in D, I. In E, 27.9% of parents attended the Emergency Room, 10-15% (D, I, GB); 2-4% (NL, B, F). An ENT specialist was seen in 28.9% of cases (D); 19.4% (I); 10-12% (F, E); 4.8% (GB); 1% (B, NL). Antibiotics were prescribed for 60-87.1% of children; hospitalisation was required for 3.6-7.7% for an average 1.4-6.8 days. Children had an average 2.2-2.7 episodes in the previous year; 28-57% had had ≥ 3 episodes in the previous year. 13-22% parents took a median of 10-16 days off work. The total societal cost per episode varied from 168.89€ (NL) to 498.31€ (GB) with direct medical costs representing 24-40% of the total. **CONCLUSIONS:** This survey revealed differences in OM occurrence and healthcare use between EU-countries, but consistently confirmed the substantial public-health and economic burden. OM could cost societies 450-950 Million€ in E, I, GB, F, D, and 19-32 Million€ in B, NL.

Topic: Bacterial infections

Paper number: 1210

Presentation type requested: Poster Presentation

INCREASED STREPTOCOCCUS PNEUMONIAE BETA-LACTAMINE RESISTANCE IN CHILDREN WITH MEASLES

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BACKGROUND AND AIMS: Between 2005-2006 in Romania evolved a measles epidemic; we monitored the superimposed pneumococcal infections during epidemic, compared with the pre and postepidemic patterns. **METHODS:** Retrospective study including 138 children, hospitalized in the Infectious Diseases Clinic III of the "Dr.V.Babes" Hospital in a 24 month period (01.11.2004-31.10.2006). **RESULTS:** 148 Streptococcus pneumoniae strains were isolated from: pharyngeal exudate (66), conjunctive secretion (36), nasal exudate (34), sputum/ tracheal secretion (18), otitic secretion (5), cutaneous wound (1). SP pathology was as follows: conjunctivitis (36), otitis (24), pneumonia (17), acute bronchitis (8), meningitis (1) and a number of 70 patients were SP carriers. Antibiotic resistance analysis evidenced: 121 strains Oxacillin-resistant; 79 strains Penicillin-resistant (48% comparing to the 36% penicillin resistance media for the hospital); E-test for Penicillin performed for 93 strains showed 22,3% intermediary resistance and 25,7% high resistance. E-test for Ceftriaxone performed for a number of 38 strains with high Penicillin-resistance showed: 11,42% Ceftriaxone-resistance (9,14% were high resistant). 71 patients (51,44%) from the total number of 138 had measles. 79 patients were institutionalized children or had recent previous hospitalizations. In the measles epidemic period penicillin resistance was 53,48% vs. 32,6% in the non-epidemic period.

CONCLUSIONS: Penicillin-resistance of the SP strains isolated in our clinic in the epidemic period was significant elevated comparing to the media resistance for the hospital as well as compared to the pre and postepidemic period.

Topic: Bacterial infections

Paper number: 1213

Presentation type requested: Oral Presentation

CLINICAL MANIFESTATIONS AND MOLECULAR CHARACTERISTICS OF INVASIVE PEDIATRIC GROUP A STREPTOCOCCAL INFECTION IN CHILDREN

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BACKGROUND AND AIMS: Group A Streptococcal (GAS) molecular characteristics are of key importance to understand their pathogenicity. We described clinical and molecular characteristics of invasive GAS infections in children where few data are available. **METHODS:** Clinical data of children diagnosed with an invasive GAS infection (April 1999 - November 2007) were collected retrospectively. Molecular characterisation of GAS was performed including emm-typing and PCR of virulence genes (speA, speB, speC, smeZ, ssa, sic, silC). **RESULTS:** Among 33 children included during study period, 15 were diagnosed in the last two years. Data were available for 25/33 children with a median follow-up of 5.3 months (range: 0- 76).

Median age was 2.8 years (1.2-17.2). Diagnoses were: osteomyelitis/arthritis 52%, necrotizing fasciitis/soft tissue infections 24%, pulmonary infections 12% and STSS 12%. At least 1 risk factor was reported in 18 cases. Intensive Care Unit hospitalisation rate was 24% and mortality rate 4%.

Emm-type 1 was predominant (36%), followed by emm-type 3 (12%) and emm-type 12 (12%). SpeA gene was detected in 52%, smeZ in 48%, ssa in 20%, all with restricted emm-type distribution. SpeC gene was detected in 20%.

Two strains, both emm-type 12, were macrolide resistant (respectively associated to erm(B) and mef(A) gene).

There was no significant relation between emm-typing and type of infection although 67 % of emm-type 1 infections were osteomyelitis/arthritis.

CONCLUSIONS: Recent increase of invasive GAS infections has been observed. Bone/articular infections were the most common and the main emm-type was 1. Larger pediatric studies are needed to improve knowledge of severe GAS infections.

Topic: Bacterial infections

Paper number: 1218

Presentation type requested: Poster Presentation

BRUCELLOSIS PRESENTING WITH PANCYTOPENIA

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BACKGROUND AND AIMS: Brucellosis is one of the zoonotic infections encountered all over the world. The disease begins with nonspecific signs and symptoms and affects multiple systems like hematopoetic, gastrointestinal, nervous and musculoskeletal systems. We present a six year-old girl with fever and arthralgia. For she was pancytopenic we excluded malignancy and the other causes of pancytopenia in differential diagnosis. After several tests our diagnosis was brucellosis. The patient completely recovered following combined antibacterial treatment of gentamicin and trimethoprim-sulfamethoxazole(TMP-SMZ).
METHODS: A previously healthy six year- old girl was admitted to our clinic with complaints of fever and arthralgia at her right knee. She had 39° C fever, cervical microlymphadenopathy and hyperemia of the oropharynx.
RESULTS: Hematological values were: leucocyte: 3100/mm³, hemoglobin:7.7 gr/dl, PLT: 71.000/mm³, 46% lymphocyte, 38% PNL, 12% stab, 4% monocyte and CRP:6.5 mg/dl. The serum biochemical parameters except AST and ALT, sinus and lung roentgenograms, urinalysis and lumbal puncture were normal. The bone marrow aspiration revealed changes of infectious origin. Ceftriaxone was chosen for antibiotherapy. The serology for HAV, HBV, HCV, HIV, CMV, Rubella, Toxoplasma, Parvovirus B-19, HSV-1 and the Gruber Widal test were all negative. Haemophilus parainfluenza was isolated from the blood culture. The standart tube agglutination test for Brucella was positive at a titer of 1/10240. The child recovered with gentamicin (2 weeks) and trimethoprim-sulfamethoxazole (6 weeks) therapy. The hematologic abnormalities resolved in the second week of the treatment
CONCLUSIONS: Brucellosis should be kept in mind for the differential diagnosis of children presenting with fever, arthralgia, pancytopenia and elevated of transaminases

Topic: Bacterial infections

Paper number: 1220

Presentation type requested: Poster Presentation

PEDIATRIC CERVICOFACIAL ACTINOMYCOSIS: A CASE REPORT.

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BACKGROUND AND AIMS: Actinomycosis is a rare soft tissue infection caused by a gram-positive, anaerobic bacteria. Actinomyces infections are infrequent in children but are underrecognized. The cervicofacial actinomycosis is the most commonly form. Actinomycosis is often difficult to diagnose as it can mimic numerous infectious disease such as tuberculosis and noninfectious disease such as malignant tumors. Biopsies for culture and histopathologic evaluation are usually essential for diagnosis. The treatment of actinomycosis was high dose penicillin administered over a prolonged period. **METHODS:** We presented a 14-years old boy with cervicofacial actinomycosis. He presented with a six months history of an enlarging left submandibular mass. The patient had been evaluated in the Plastic and Reconstructive Surgery clinic. Firstly, surgical excision of lesion due to differential diagnosis of cervicofacial mass had performed. The patient diagnosed with cervicofacial actinomycosis by histopathological exam. Gram stains of the tissue revealed gram-positive, filamentous organisms oriented radially around sulfur granules. The patient was referred our Department of Pediatric Infectious Disease. None residual or additional mass were detected by computed tomography scan of head, neck and paranasal sinus tract. A abdominal ultrasonographic evaluation that performed due to evaluation of abdominal actinomycosis was normal. The patient was started amoksisiline-clavuclanic acid treatment. **RESULTS:** **CONCLUSIONS:** In conclusion, cervicofacial actinomycosis is rare infectious disease in children and it is still a difficult differential diagnosis for pediatricians. This infectious disease should be included differential diagnosis in children with cervicofacial mass.

Topic: Bacterial infections

Paper number: 1229

Presentation type requested: Poster Presentation

**SEPSIS IN CHILDREN HOSPITALIZED AT PEDIATRIC DEPARTMENT OF GENERAL HOSPITAL CELJE,
SLOVENIA**

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BACKGROUND AND AIMS: To establish the prevalence of hospitalization of children for sepsis (S), the causative agents and antibiotic sensitivity. **METHODS:** Medical documentation of children hospitalized for S at the Pediatric Department of General Hospital in Celje in the year 2007 was evaluated. Diagnostic criteria for S were: SIRS and the presence of proven infection. **RESULTS:** Among 2883 hospitalized children aged 1 week to 18 years 11 children were hospitalized for S (0,4 %). The median age of children with S was 18,5 months (4 weeks to 5 years). 73% of affected children were girls. All of 11 children fulfilled all 4 criteria for SIRS. The origin of infection was pneumonia in five children (45,5), middle ear infection in four (36,5%), urinary tract infection in one (9%) and purulent coxitis in one child (9%). Positive blood cultures were found in 6 children (54,5%). Streptococcus pneumoniae was isolated most often (in four children – 66%), Staphylococcus aureus in one and Streptococcus alpha haemolyticus in one child. In 5 children blood cultures were negative (45,5%).

All of bacteria isolated from blood samples were sensitive to vancomicine, 83% to clindamycin, 67% to amoxicilin and cephalosporine 2. and 3. generation, 50% to eritromycine and penicilline.

CONCLUSIONS: Sepsis is not a frequent reason for hospitalization of children in our ward. Causative agents were isolated from blood culture in half of the patients, most often Streptococcus pneumoniae. All proven bacteria were sensitive to usual antibiotics.

Topic: Bacterial infections

Paper number: 1244

Presentation type requested: Poster Presentation

TRANSIENT AND CHRONIC CYTOPENIAS IN FEBRILE CHILDREN : AETIOLOGY, EPIDEMIOLOGY AND OUTCOME.

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BACKGROUND AND AIMS: Aim of the study is to identify the relationship of acquired cytopenias with febrile infections in childhood and assess their course and outcome. **METHODS:** All 117 febrile children, 4.0±3.8 y old (range:0-14), admitted to the Pediatric Ward and presenting with cytopenia during a 3y period , were investigated with: indices of infection, cultures of body fluids and serological tests. **RESULTS:** 66/117 (56.4%), 3.3±3.8y, presented with neutropenia/leucopenia, 19/117 (16.2%), 5.0±3.4y with thrombocytopenia, while involvement of 2or 3 cell lines was found in 32/117 (27.4%), 4.8±4.0y old.

An infectious agent was identified in 54/117 (46.2%). Thus 34/117 had viral , 12/117 bacterial and 8/117 parasitic infection.

In 85/117(72.4%), cytopenia recovered within 2 mo, in 12/117 (10.2%) lasted between 2-6 mo (transient cytopenia, TC), while in 20/117 (17.0%) >6 mo (chronic cytopenia, CC).

In all age-groups (0-2 y, 2.1-5 y, >5 y), TC was predominantly associated with viral infections of short duration (<1 mo) and of mild/moderate severity.

Among the 20 children with CC, 14 had neutropenia (7/14 autoimmune), 3 had ITP, 2 finally were diagnosed with acute lymphoblastic leukemia and one with systemic lupus erythymatosus.

One year after diagnosis, all children initially diagnosed with cytopenia were reassessed. Cytopenia had subsided in all characterized as having TC and in 4/20 of those characterized as CC. **CONCLUSIONS:** In conclusion, cytopenia in childhood is usually transient, often following common bacterial and viral agents and in the majority resolves spontaneously. However in a non negligible percentage (17.0%), it becomes chronic, with outcome dependent on the etiology.

Topic: Bacterial infections

Paper number: 1245

Presentation type requested: Oral Presentation

“RISK FACTORS FOR ACUTE OTITIS MEDIA IN CHILDREN 6 TO 24 MONTHS OLD”

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BACKGROUND AND AIMS: Acute otitis media (AOM) is the most frequent bacterial pathology in childhood. Modifiable risk factors should be researched in order to prevent its occurrence.

Objectives: Evaluate risk factors for AOM in portuguese children 6 to 24 months old.

METHODS: Prospective study, from September to December 2007. We analysed gender, race, parents schooling, breastfeeding, day-care attendance, gestational or passive smoke exposure, supine position during feeding, pacifier use, regurgitation, allergy, pneumococcal vaccine, number of siblings, parental history of ear infection and number of visits paid to shopping malls were summed in a multivariate analysis with SPSS13.0. **RESULTS:** 202 cases of AOM, mean age 12,8±4,9 months, 104 (51,5%) male gender. Previous upper respiratory tract infection disease in 72,2% and 16,8% had an older sibling with a respiratory infection. In the multivariate analysis of 202 cases and 165 controls, were identified as risk factors for AOM: mother's low educational status (OR=5,71; p<0,05; 95%CI:3,32-9,84); day-care attendance (OR=5,54; p<0,00; 95%CI:3,52-8,71); supine positioning during feeding (OR=5,66; p<0,00; 95%CI:2,78-11,52); maternal history of ear infection (OR=5,11; p<0,07; 95%CI:2,42-10,79); paternal history of ear infection (OR=3,35; p<0,02; 95%CI:1,74-6,46) and frequent shopping mall visiting (OR=4,24; p<0,03; 95%CI:2,71-6,63). **CONCLUSIONS:** This study confirms some risk factors already known and brings new data about new ones. Shopping mall and day-care attendance can be related to increased exposure to pathogenic agents leading to respiratory tract infections and subsequently AOM. The elevated risk associated with parental history of ear infection can be due to parents devaluating the question in the control group. A broader study is needed to access this issue.

Topic: Bacterial infections

Paper number: 1247

Presentation type requested: Poster Presentation

SEVERE PNEUMONIA AFTER NONTYPHOIDAL SALMONELLA GASTROENTERITIS

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BACKGROUND AND AIMS: Nontyphoidal Salmonella infection cause in most cases a self-limited gastroenteritis. However, a limited number of individuals develop bacteriemia, sepsis and/or focal infections. Routine antimicrobial treatment of uncomplicated gastroenteritis caused by Salmonella species is not advised. **METHODS:** **RESULTS:** We report the case of a 15 year old girl, previously healthy, who was admitted with the diagnosis of acute severe gastroenteritis with fever secondary to food ingestion (six family members also affected). She had severe dehydration and acute renal failure that was difficult to control. Salmonella enteritidis was isolated from stool and she was not medicated with antibiotics. On day 3 after admission, she developed sudden clinical deterioration, with hypertension, right extensive pneumonia with hypoxemia and mild bilateral pleural effusion, pericardial effusion, and clinical and laboratorial sepsis. She initiated cefotaxime, gentamicine and metronidazol, with progressive recovery. Blood cultures were negative. Human immunodeficiency virus serology and auto-immunity evaluation were negative. Lymphocyte counts and immunoglobulins were normal. **CONCLUSIONS:** The clinical course of nontyphoidal Salmonella infection may be affected by host factors such as age, underlying disease and immunosuppression. A severe infection by Salmonella enteritidis in an otherwise healthy patient implies exclusion of an immune system dysfunction or an underlying disorder. We also discuss the importance of early antimicrobial therapy in cases of severe Salmonella gastroenteritis, in adolescents, in order to prevent further evolution to invasive disease.

Topic: Bacterial infections

Paper number: 1251

Presentation type requested: Oral Presentation

PREVALENCE OF HAEMOPHILUS INFLUENZAE TYPE B CARRIAGE IN CHILDREN IN URBAN KATHMANDU, NEPAL.

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BACKGROUND AND AIMS: Haemophilus influenzae type b (Hib) has a significant global disease burden despite the availability of a highly effective vaccine. We have previously identified a high burden of pneumonia and meningitis, but low rates of Hib isolation from blood and CSF, among febrile children presenting to Patan Hospital, Kathmandu where Hib vaccine is currently unavailable. This study was undertaken to document the oro-pharyngeal carriage rates of Hib in Nepali children. **METHODS:** Children aged 3 months – 12 years were recruited from the outpatient clinic at Patan Hospital, urban schools and orphanages. A single oropharyngeal swab was taken and plated on Hib antiserum agar plates. Colonies that exhibited iridescence and/or precipitation were confirmed as Hib using X & V dependence and slide latex agglutination.

RESULTS: Of 2185 children recruited to the study, 104 (4.8%) had Hib isolated from throat swabs. Of those children recruited from the out-patient clinic or the school environment (1951), the carriage rate was highest in children aged 1-4 years at 5.4% (30 of 559). Overall, the rate of carriage among children in the orphanages was highest at 9.0% (21 of 234).

CONCLUSIONS: These data provide evidence of ongoing significant transmission of Hib among children in Kathmandu, with a carriage rate that is similar to that identified elsewhere in regions where high disease rates have been documented.

Topic: Bacterial infections

Paper number: 1257

Presentation type requested: Oral Presentation

PAEDIATRIC FORM OF BOUTONNEUSE FEVER IN ALGERIA.

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BACKGROUND AND AIMS: In Oran, the incidence of mediterranean spotted fever (MSF) was 13/100 000 inhabitants in 2005. The aim of the study was to analyze the clinical and laboratory characteristics of children with MSF.

METHODS: the patients diagnosed with MSF in period 2004 – 2005., were under fifteen years old. An indirect immunofluorescence assay for *Rickettsia conorii* was performed for diagnosis.

RESULTS: Most cases were encountered in July and August. The median age was 4.5 years and the sex ratio was 0.71. A history of a tick-bite was given in 9 (37.5%) cases. Direct contact with dogs was reported in 83.3% cases. All children but one had fever. A rash was observed in all the children but one. An inoculation eschar was observed in 20 (83.3%) children. It was in majority (16/20) localized in cephalic region. The eschar was unique in 18 patients (90%), while two patients presented two eschars. Local lymphadenopathy was observed in 12 cases (50%). Arthralgia and myalgia (40.5%) of the lower limbs and only in two (8.3%) cases restricted children's mobility. Four patients presented with meningism (16.6% in children between 1-5 years old). Other signs included splenomegaly, vomiting, diarrhoea, hepatomegaly, headache, cough, and epistaxis in one case. Two children presented with seizure.

Intravenous chloramphenicol was used as a first-line drug in 8 children who presented with vomiting. It was switched for oral josamycine (5 cases), doxycycline (2 cases) or thiophenicol (1 case).

CONCLUSIONS: The disease was mild in children in Algeria except four who presented meningism and convulsion.

Topic: Bacterial infections

Paper number: 1269

Presentation type requested: Oral Presentation

PREVALENCE OF PLASMID-MEDIATED AMPC B-LACTAMASES AMONG CLINICAL ISOLATES OF ESCHERICHIA COLI AND KLEBSIELLA PNEUMONIAE FROM FIVE CHILDREN'S HOSPITALS IN CHINA

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BACKGROUND AND AIMS: To investigate the prevalence of plasmid-mediated AmpC β -lactamases in *E. coli* and *K. pneumoniae* from five Children's Hospitals in China. **METHODS:** Isolates of 494 *E. coli* and 637 *K. pneumoniae* were collected from 5 Children's Hospitals in China from 2005 to 2006. The isolates with decreased susceptibility to cefoxitin were subjected to confirmation test with 3-aminophenyl boronic acid. Polymerase chain reaction amplification of the blaAmpC, blaTEM, blaCTX-M, blaSHV genes and their gene sequencing were performed. Transconjugants were achieved by conjugation experiments. **RESULTS:** Plasmid-mediated AmpC β -lactamases were found in 10.1% in *K. pneumoniae* (64/637) and 2.0% in *E. coli* (10/494) strains. The proportion of plasmid-mediated AmpC-producing strains significantly increased from 2005 (2.6%) to 2006(9.3%) ($p < 0.001$). The DHA-1-producing isolates were the most prevalent type (93.2%, 69/74). The sequences of blaDHA-1 genes were all identical to those from GenBank. Strains of blaCMY-2 were isolated from 5 isolates (6.8%), which were all from *E. coli*. One sequence of blaCMY-2 differs from blaCMY-2 in the GenBank. Eighteen of the 74 (24.3%) AmpC-producing *K. pneumoniae* and *E. coli* isolates coproduced an ESBL. Cefoxitin resistance was transferred to 15 of the 74 positive strains (20.3%). **CONCLUSIONS:** Our study demonstrated the occurrence of plasmid-mediated AmpC β -lactamases in *E. coli* and *K. pneumoniae* in Chinese pediatrics and DHA-1 type AmpC enzymes had the highest prevalent rate. CMY-2 AmpC β -lactamases from the children's hospital in China were firstly reported. Hence continuous surveillance of the prevalence and evolution of AmpC β -lactamase is important.

Topic: Bacterial infections

Paper number: 1273

Presentation type requested: Poster Presentation

TRENDS IN SEROTYPE DISTRIBUTION OF CLINICAL ISOLATES OF STREPTOCOCCUS PNEUMONIAE: A SINGLE CENTER EXPERIENCE FROM 2001 TO 2007

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BACKGROUND AND AIMS: We investigated whether there had been any change in the epidemiology of Streptococcus pneumoniae in Korea before and after introduction of heptavalent pneumococcal conjugate vaccine (PCV7). **METHODS:** Between September 2001 and August 2007, clinical isolates were collected from patients with pneumococcal infection in Severance Hospital, Seoul, Korea. We analyzed trends in serotype distribution and antibiotic resistance before and after the introduction of PCV7. **RESULTS:** There were 402 strains of Streptococcus pneumoniae isolated from clinical specimens; 143 before and 259 after PCV7 introduction. The predominant serotypes, in order of decreasing frequency, were 19F, 19A, 23F, 6B, 6A, 3, 9V, 14, 11A, 4, 29, and 18C; 168 isolates (41.8%) belonged to types included in PCV7. The proportion of clinical isolates that were nonsusceptible to penicillin increased from 58.8% in 2001 to 92.3% in 2007 (P=0.006). There was no significant diminution in pneumococcal infection caused by vaccine serotypes after the introduction of PCV7. In children younger than age 2 years, the proportion of clinical isolates that were vaccine serotypes was higher than in persons older than age 15 years (58.3% vs 37.8%, P=0.020). **CONCLUSIONS:** There was no significant diminution in pneumococcal infection caused by vaccine serotypes after the introduction of PCV7, therefore more universal pneumococcal immunization program is recommended especially for children younger than age 2 years.

Topic: Bacterial infections

Paper number: 1274

Presentation type requested: Poster Presentation

A MULTI-COUNTRY ANALYSIS OF ANTIBIOTIC USE FOR OTITIS MEDIA IN CHILDREN AGED 5 YEARS OR YOUNGER

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BACKGROUND AND AIMS: The prescription of antibiotics for the treatment of childhood acute otitis media (AOM) adds to the cost burden of the disease and is a likely factor in the development of antibiotic resistance. Treatment of OM caused by antibiotic-resistant pathogens increases the economic and societal burden. **METHODS:** Antibiotic prescriptions for OM in children ≤ 5 years were assessed both in terms of types (by ATC class), volume and estimated economic value for 7 countries (Australia, Canada, France, Germany, Mexico, South Korea, Spain). From prescription data in each country, the proportion and types of antibiotics prescribed for OM in children aged ≤ 5 years were determined, and the total volume estimated from sales figures. The estimated value was calculated using public price figures. **RESULTS:** The proportion of the general systemic anti-infectives market prescribed for OM in children aged ≤ 5 years ranged from 6% (South Korea)–46% (Canada) of the total. In absolute figures the annual budget for general systemic anti-infectives prescribed for OM in children aged ≤ 5 years ranged from €1.7M (Australia)– €53M (France). Antibiotics used most widely were country specific and included broad-spectrum penicillin, cephalosporin and combinations, and macrolides and similar types. **CONCLUSIONS:** Prescription of antibiotics for treatment of OM in children aged ≤ 5 years is substantial. Also it is known that increasing antibiotic resistance due to over/miss-use of antibiotics contributes to increased healthcare resource use, plus higher morbidity and mortality. To overcome this increasing concern, prevention of OM by vaccination should be considered because it has the potential to reduce antibiotic use and reduce the rise of antibiotic resistant pathogens.

Topic: Bacterial infections

Paper number: 1275

Presentation type requested: Poster Presentation

THORACIC ACTINOMYCOSIS: WHEN THINKING ABOUT IT EARLIER?

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BACKGROUND AND AIMS: Thoracic actinomycosis is a rare anaerobic infection, with a high morbidity related to a delayed diagnosis, although a simple and effective treatment is available.

Objective: To determine the frequency of thoracic actinomycosis in a paediatric university centre and to identify characteristics that could promote an earlier diagnosis.
METHODS: A 10-year retrospective review of paediatric thoracic actinomycosis was performed (1997-2007) in the Lille University Hospital, using the 10th International Classification of Diseases. Every chart was analysed in detail. Clinical, biological and radiological findings were computed and compared to identify common signs for each case.
RESULTS: Only three patients with thoracic actinomycosis, 4 to 11 years-old, were identified during the study period. The delay before diagnosis was important: 4 months to 3 years. Fever, asthenia, pain, weight loss and sweats were the most common complaints. Predisposing factor such as tooth decays was systematically observed. Chest X-Rays and CT scans revealed irregular subpleural nodules with bronchiectasis, and an infiltrative nature through the pleura. Biological tests showed a non specific inflammatory syndrome. Definitive diagnosis was histological revealing suppurative necrosis surrounded by granulation tissue and intense fibrosis. Gram stain revealed gram positive branching filaments within the so called sulfur granules, typical of actinomyces. Usual anaerobic tests were never performed.
CONCLUSIONS: Thoracic actinomycosis should be researched in patients with tooth decays, local pain, persistent low-grade fever, asthenia and weight-loss, when a chest radiologic evidence of distal nodules is observed, with a non specific biologic inflammatory syndrome. Then, anaerobic bacteriological tests and histology should be performed.

Topic: Bacterial infections

Paper number: 1277

Presentation type requested: Poster Presentation

CLINICAL IMPACT OF VANCOMYCIN-RESISTANCE ENTEROCOCCI (VRE) ISOLATED FROM PEDIATRIC BURN ICU

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BACKGROUND AND AIMS: Bacterial resistant strain remains a major problem in the management of burn victims today. Vancomycin-Resistance Enterococci(VRE) most commonly result in intestinal colonization. The increasing prevalence of methicillin resistance Staphylococcus aureus and coagulase-negative staphylococci was high (89.5%). So vancomycin use increased dramatically, probably contributing to the emergence of VRE recently. This study was designed to investigate the increasing rate of VRE and antimicrobial resistance characteristics since January 2000 through May 2007 in Han-Gang Burn Center, Korea.
METHODS: We reviewed the procedures before VRE detection as well as antibiotic sensitivity of detected organisms. Bacterial identification and antimicrobial susceptibility test were performed by ATB(Automated Test Bacteriology) and Vitek system.
RESULTS: We experienced 16 patients of VRE in pediatric burn ICU between January 2000 and May 2007. All of them were Enterococcus faecium. The VRE organism were cultured from rectal swab(12 cases), wound(3 cases) and catheter(1 case). The mean period from admission to VRE appearance were 27 days. All of them antibiotics were used especially 3rd generation cephalosporin with aminoglycosides. Almost all antibiotics were resistant to VRE. The rate of VRE isolation have been increasing since 2002.
CONCLUSIONS: The VRE strains are rapidly changes to multi-drug resistance organism during the past 7 years in pediatric burn ICU. A certain antimicrobial agents more associated with risk of VRE colonization than others. In a murine model, ceftriaxone and ticarcillin/calvulanate promoted the establishment of high-level VRE colonization, whereas piperacillin/tazobactam did not. So we will change places the empirical antibiotics ceftriaxone with piperacillin/tazobactam in pediatric burn ICU.

Topic: Bacterial infections

Paper number: 1279

Presentation type requested: Poster Presentation

BRAIN ABSCESSES IN CHILDREN. RETROSPECTIVE STUDY IN A TERTIARY REFERRAL CENTRE IN SPAIN (1996-2007).

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BACKGROUND AND AIMS: Brain abscess (BA) is an uncommon but life-threatening condition. New imaging procedures, refinements in neurosurgical technique and the use of newer antimicrobial agents have contributed to a better prognosis.
METHODS: Medical charts of 11 paediatric patients with BA admitted to our hospital between January 1996-December 2007 were retrospectively reviewed. Demographics, predisposing factors, clinical presentation, radiological and microbiological investigations, antibiotic therapy and outcome were analysed.
RESULTS: Eleven patients were collected. Seven were males (M:F 1.7:1). Median age: 9 years (16 days-15 years). Predisposing factors were present in 9 patients: paranasal sinusitis (4), congenital heart disease (2), head trauma (1), mastoiditis (1) and petrositis (1). Most common clinical features were: headache (8/11) and fever (6/11). The abscesses were detected by contrast-enhanced CT in all but 3 cases (MRI in one and ultrasonography in two).

Abscess fluid was available in all patients: *Streptococcus viridans* (3), *S. pneumoniae* (2, serotypes 3 and 6B), *Staphylococcus aureus* (1), coagulase-negative staphylococci (1), gram-positive cocci and gram-negative bacilli rods (1) and no growth (3). All patients started broad spectrum intravenous antibiotic therapy (cefotaxime and metronidazole with cloxacillin or vancomycin in 6) that was narrowed according to susceptibility results when feasible. All patients were treated surgically (8 stereotactic aspiration and 3 open craniotomy). All patients are alive, but with neurological sequelae in 3 (epilepsy, hydrocephalus and motor deficiencies).

CONCLUSIONS: Recent advances in diagnostic and therapeutic modalities have improved the prognosis of BA. Although cases of pneumococcal brain abscess have rarely been reported, this possibility should be considered

Topic: Bacterial infections

Paper number: 1295

Presentation type requested: Poster Presentation

CHLAMYDIA .P IN CHILDREN WITH RHINOSINUSITIS

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BACKGROUND AND AIMS: Introduction:Chlamydia pneumoniae is a common respiratory pathogen which is often found in our paediatric populations. Many patients with community-acquired pneumonia caused by C. pneumoniae have symptoms suggestive of sinusitis.

Goal of this study is to determine role of Chlymidia.p in children with rhinosinusiits

METHODS: This case control study was done in the pediatric and ENT clinics of Hazrat Rasul Hospital in Tehran (2002-2003). This study based on diagnostic parameters for rhinosinusitis cases and controls .IgG & IgM detected in 51 blood samples of cases and 31 controls.

Nasopharyngeal swabs for detection the Chlamydia.p –DNA by PCR done in all cases and controls.

RESULTS: The mean age of rhinosinusitis cases was 4.3 ± 2.5 year.70% of cases < 5 years .58.7% male; 41.7% female.

Acute infection(IgM)in 11%(6/51) and previous immunity(IgG)in none(0/51)cases.Acute infection(IgM)in6.5%(2/31);previous immunity(IgG) in 13.3%(4/31) of controls.Acute infection had not significant difference (CI 95%;P= 0.7) between cases and controls.Previous infection was significantly higher in controls (0.007). Previous immunity was dependent to age of patients (p=000).There were not correlation between presence of acute or previous Chlamydia infection with sex;duration and site of sinus involvement in cases.

CONCLUSIONS:we did not find active Chlamydia.p infection not by PCR nor serology in cases.These serological results had different results with its role in pneumonia cases but it was closer to adenoid study.We recommend specific antibiotics for ChlamydiaP (appropriate for age)including erythromycin,or othernew macrolids in resistant sinusitis to usual drugs. Especially in cases accordance with adenoiditis and adenoid hypertrophy before surgery.

Topic: Bacterial infections

Paper number: 1313

Presentation type requested: Oral Presentation

CHILDHOOD TUBERCULOSIS IN A LOW INCIDENCE COUNTRY: DIAGNOSIS, INTRAFAMILIAL SPREAD AND CLINICAL PRESENTATION.

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BACKGROUND AND AIMS: In Belgium, a low tuberculosis (TB) incidence country, cases of childhood TB appear every year. **METHODS:** We retrospectively analysed the demographic characteristics, the circumstances leading to the diagnosis, intrafamilial transmission and clinical presentation for all children evaluated for TB in our department between 1998 and 2007. **RESULTS:** 119 children were evaluated, median age 5y, and 69 had TB (87.7% of foreign origin). Familial-, contact-, risk group- screening, or clinical symptoms lead to the diagnosis in respectively 45/69, 3/69, 5/69 and 16/69 patients.

The 69 patients belonged to 38 families, and in 15/38 families 2-6 children were infected. The source of infection was found in 26/38 families and was an adult family member in 22/26 cases. In case of intrafamilial transmission, the infected children were younger than in case of extrafamilial or unknown source of infection, mean age 5y versus 12y.

32/69 patients had active TB: 23 pulmonary, 6 extrapulmonary and 3 disseminated disease. 37/69 had latent TB.

Microbiologic confirmation of TB was obtained in 13 patients with pulmonary and 5 with extrapulmonary disease.

CONCLUSIONS: 1. Vertical transmission of TB in families is high. Especially young children are infected by adults.

2. The high proportion of cases with active disease, reflects rapid progression of TB in children and the diagnostic delay in adults in low incidence countries.

3. Familial- or contact screening, performed after a known contact or in new cases of childhood TB, form the key for the diagnosis of TB in children and for prevention of further spread.

Topic: Bacterial infections

Paper number: 1325

Presentation type requested: Poster Presentation

IN VITRO SUSCEPTIBILITY OF ANTIBIOTICS AGAINST S. PNEUMONIAE AND H. INFLUENZAE FROM PAEDIATRIC PATIENTS WITH OTITIS MEDIA IN CRETE

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BACKGROUND AND AIMS: S. pneumoniae and H. influenzae still remain the major pathogens of otitis media in the era of antipneumococcal vaccination. Appropriate empirical antibiotic treatment should be based on the susceptibility of the causative agents to antibiotics. **METHODS:** 201 samples were obtained from children with otitis media between January 2006 and December 2007. 34 samples were considered as superinfections and were excluded from the total number. The susceptibility test was performed by MIC for penicillin and cephalosporines for S. pneumoniae and by the disk diffusion method for H. influenzae, according to the NCCLS. **RESULTS:** In 35 samples S. pneumoniae was isolated as a unique pathogen, in 11 both S. pneumoniae and H. influenzae and in 15 H. influenzae was the only pathogen. 34,8 % of the isolates with S. pneumoniae were resistant to penicillin while 23,2% of the isolates were also resistant to ceftriaxone. 26,9% of the isolates with H. influenzae were resistant to ampicillin while 19,2% were also resistant to amoxicillin –clavulanate. **CONCLUSIONS:** The resistant rates of S. pneumoniae to penicillin and in ceftriaxone are high. The resistant rate of H. influenzae in amoxicillin –clavulanate is also high. According to these rates, the most effective empirical treatment in outpatients with otitis media is high-doses amoxicillin. Nevertheless, resistant rates of antibiotics in otitis media should continue to be recorded.

Topic: Bacterial infections

Paper number: 1340

Presentation type requested: Poster Presentation

ECTHYMA GANGRENOSUM IN CHILDREN, NEARLY ALWAYS THE CLUE TO THE DIAGNOSIS OF IMMUNODEPRESSION.

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BACKGROUND AND AIMS: Ecthyma gangrenosum is a characteristic dermatological manifestation of severe and invasive infection commonly caused by *Pseudomonas aeruginosa*, mainly in immunocompromised patients. Few cases have been described in healthy children.
METHODS: All cases of ecthyma gangrenosum admitted to our hospital in the last five years were reviewed. Baseline characteristics, underlying diseases, clinical and microbiological manifestations and outcome are discussed.
RESULTS: Four patients were collected. 3 were males. No previous disorders were diagnosed. Ecthyma gangrenosum was the clue to the diagnosis of immunosuppression in 3 cases (X-linked agammaglobulinemia, Severe Congenital Neutropenia and Acute Lymphoblastic Leukemia). The fourth case presented transient hypogammaglobulinemia and neutropenia that resolved spontaneously. Complete immunological evaluation was normal. All patients presented fever associated with an acute cutaneous exanthema, consisting of a papule evolving to a necrotic scare. A severe decrease in peripheral blood neutrophils was detected in all of them. Skin smear culture yielded *P. aeruginosa* in all cases and blood cultures were positive in two. Intravenous broad spectrum antibiotic therapy was started and was narrowed according to susceptibility results in all cases. Outcome was good in the healthy patient, but the others suffered multiple complications, related both to *P. aeruginosa* infection and underlying disease, requiring prolonged admission in the Pediatric Intensive Care Unit before fully recovering.
CONCLUSIONS: Ecthyma gangrenosum is almost always a sign of immunosuppression. The likelihood of recovery is related to the severity of patient's underlying disease. A high level of suspicion is necessary in order to establish an early diagnosis and to improve outcome.

Topic: Bacterial infections

Paper number: 1378

Presentation type requested: Poster Presentation

INTRANASAL FLUTICASONE PROPIONATE SPRAY AS AN ADJUNCT TO ORAL ANTIBIOTIC THERAPY FOR ACUTE SINUSITIS IN CHILDREN

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BACKGROUND AND AIMS: The role of topical corticosteroids in the treatment of acute sinusitis has not been well established in children. An attempt was made to determine the impact of topical corticosteroids as an adjunct to antibiotic treatment in the management of childhood sinusitis. **METHODS:** We investigated the clinical value of intranasal fluticasone propionate in acute sinusitis in 206 children with acute maxillary sinusitis. We randomly divided them into two groups: group 1 received oral pseudoephedrine (2 x 30 mg) and amoksisilin (90 mg/kg) for 10 days, and group 2 received fluticasone propionate (1 x 100 microg) and amoksisilin (90 mg/kg) for 10 days. Symptoms of headache, cough, and nasal stuffiness and signs of nasal discharge were graded before and after treatment. **RESULTS:** The patients whose symptoms and signs completely normalized after treatment were considered to have recovered, and those with persisting symptoms and signs after treatment as having not recovered. Clinical symptoms and signs decreased significantly in both treatment groups in comparison to baseline ($P < .01$). We detected a significant improvement in the scores of the cough and nasal discharge at the end of treatment in the fluticasone propionate group when compared with placebo ($P < .05$). No adverse drug effects were determined during the study period. **CONCLUSIONS:** These findings suggest that topical steroids may be a useful adjunctive agent in the treatment of earlier in the course of acute sinusitis of children without apparent side effects and can possibly hasten the resolution of symptoms.

Topic: Bacterial infections

Paper number: 1387

Presentation type requested: Poster Presentation

STAPHYLOCOCCAL SCALDED SKIN SYNDROME : CLINICAL AND MICROBIOLOGICAL CHARACTERISTICS

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BACKGROUND AND AIMS: To describe the characteristics of 9 cases of Staphylococcal Scalded Skin Syndrome (SSSS) diagnosed between January 2006 and December 2007 in Barcelona, Spain.
METHODS: We studied retrospectively patients admitted to our center diagnosed of SSSS. Diagnosis was based on typical skin lesions and a positive culture for Staphylococcus aureus identified by standard microbiological methods. Antimicrobial susceptibility was determined by the disk diffusion method in Mueller Hinton agar. We used polymerase chain reaction to determine the presence of exfoliative toxins type A and B and Pantone-Valentine leukocidin.
RESULTS: We identified 9 patients (5 male, 4 female). 2 were newborns and the other 7 had a median age of 4 years (range 1 to 5,3). 6 cases were considered generalized forms of SSSS and 3 were localized. At the moment of diagnosis only 2 patients had fever, the mean leucocyte count was 11900X10⁹/liter and the mean CRP was 0.27 mg/dl.

S.aureus was recovered from skin lesions (6/9), conjunctiva (4/6), throat (3/7) and blood (2/9). All of the S.aureus strains were oxacillin sensitive. 7/9 belong to fagogroup type II. 8/9 strains tested were positive for exfoliative toxins (5 type A, 2 type B , 1 types A and B). 1/9 was positive for the Pantone-Valentine leukocidin.

CONCLUSIONS: During the last two years we have seen more cases of SSSS in children than in newborns. In spite of important cutaneous manifestations, our patients had only mild systemic inflammatory reaction. We detected genes encoding exfoliative toxins A and/or B in 8/9 cases.

Topic: Bacterial infections

Paper number: 1392

Presentation type requested: Oral Presentation

OCCURRENCE OF QNR-POSITIVE CLINICAL ISOLATES IN KLEBSIELLA PNEUMONIAE PRODUCING ESBL OR AMPC-TYPE BETA-LACTAMASE FROM FIVE PEDIATRIC HOSPITALS IN CHINA

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BACKGROUND AND AIMS: The plasmid-mediated quinolone resistance qnr gene in clinical isolates among adult have been described in different countries, however, the frequency of their occurrence has not been detected in pediatric patients. The objective of this study is to screen for the prevalence and distribution of qnr gene in clinical isolates of *Klebsiella pneumoniae* producing ESBL or AmpC β -lactamase recovered from Chinese pediatric patients. **METHODS:** A total of 410 clinical isolates of *Klebsiella pneumoniae* identified as producers of an extended-spectrum β -lactamase (ESBL) or AmpC β -lactamase were collected from five children's hospitals in China during 2005 to 2006. The isolates were screened for the presence of the qnrA, qnrB, and qnrS genes, and then the harboring qnr gene isolates were detected for bla gene coding for TEM, SHV, CTX-M, and plasmid mediated ampC gene by PCR experiment. **RESULTS:** Ninety-two isolates (22.7%) were positive for qnr gene, including 10 of qnrA (2.4%), 25 of qnrB (6.1%), and 62 of qnrS (15.1%). Eighty-one of the ninety-two (88.0%) qnr-positive isolates carried at least one of bla gene for TEM, SHV, CTX-M, or DHA-1. The ciprofloxacin resistance increased 16 to 256-fold and ofloxacin resistance increased 2 to 32-fold in transconjugants, respectively. **CONCLUSIONS:** The plasmid-mediated qnr quinolone resistance gene among *Klebsiella pneumoniae* isolated from Chinese pediatric patients was qnrS, followed by qnrB, and qnrA. Most of the isolates also carried bla gene coding ESBL or ampC gene coding DHA-1.

Topic: Bacterial infections

Paper number: 1409

Presentation type requested: Poster Presentation

INVASIVE PNEUMOCOCCAL DISEASE (IPD) IN A GERMAN PEDIATRIC HOSPITAL BEFORE THE INTRODUCTION OF ROUTINE CONJUGATE PNEUMOCOCCAL VACCINATION

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BACKGROUND AND AIMS: 7-valent pneumococcal conjugate vaccination (PCV7) for children up to 24 months of age has been recommended by the German vaccination board (STIKO) in July 2006. The objective was to determine the incidence, clinical and microbiological characteristics of IPD in the pre-vaccination period in a large tertiary care children's hospital.

METHODS: We retrospectively analyzed all children with IPD between 1999 and 2006, defined by a positive culture of *S. pneumoniae* from blood, cerebrospinal or joint fluid. Clinical characteristics and outcome, underlying disorders, microbial resistance and pneumococcal serotypes were analyzed.
RESULTS: We identified 29 children with IPD between 1 month and 11 years of age (median age:

1.0 y; male/female: 63.6%/36.3%). Six of 29 (20.7%) patients had an underlying chronic disease. The IPD diagnoses were meningitis (n=9; 31.0%), sepsis (n=9; 31.0%), pneumonia (n=9; 31.0%) and arthritis/osteomyelitis (n=2/ 6.9%). The yearly number of cases increased from 2-3 cases/year between 1999-2003 to 5-6 cases/year between 2004-2006. Three patients (10.3%) with underlying chronic disease died following complication of IPD. Additional 3 patients had permanent or possibly permanent sequelae (2x hearing loss, 1x epilepsy). Twenty-four of the *S. pneumoniae* isolates were serotyped. Seventeen/24 (70.8%) cases of IPD were potentially preventable by PCV7. No Penicillin-G resistant, but 2 (7.4%) intermediately susceptible strains were found among 27 *S. pneumoniae* isolates tested. Five (18.5%) isolates showed resistance to Erythromycin and 3 (11.1%) to Cotrimoxazole.

CONCLUSIONS: These results may be helpful to monitor changes in pneumococcal epidemiology and microbiology after introduction of PCV7 routine vaccination in children.

Topic: Bacterial infections

Paper number: 1411

Presentation type requested: Poster Presentation

DISSEMINATED BCG DISEASE IN SINGAPORE CHILDREN

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BACKGROUND AND AIMS: Bacille Calmette-Guérin (BCG) vaccination at birth in Singapore is part of the National Immunisation Programme. From 2003, there was an increase in the number of BCG-related complications, including disseminated BCG disease at KK Women's and Children's Hospital, Singapore. Aim of the study is to evaluate the risk factors, microbiological findings, treatment and outcome in children with disseminated BCG disease. **METHODS:** Retrospective review of the case records of all patients with disseminated BCG disease in KK Hospital from January 2003 to January 2008. **RESULTS:** All 5 patients were immunodeficient. Age at diagnosis ranged from 2 to 28 months. The BCG strains were resistant to pyrazinamide, isoniazid and ethionamide. All children underwent treatment with at least 4 anti-tuberculous drugs- rifampicin/rifabutin, ethambutol, ciprofloxacin/levofloxacin and amikacin. Duration of therapy ranged from 4 months (at the time of death) to 2 years. Surgical intervention was necessary in 4 patients. To correct the underlying immunodeficiency, 2 patients with SCID underwent bone marrow transplants, recombinant gamma-interferon therapy was given to the child with likely interleukin-12/gamma-interferon defect and HAART was initiated in the infant with advanced HIV disease. The last patient with primary immunodeficiency of unknown cause succumbed to Parainfluenza 3 pneumonitis. **CONCLUSIONS:** Treatment of disseminated BCG disease in immunodeficient children remains a challenge. This is further compounded by the multiple drug resistance patterns seen in BCG strains in Singapore children. However, good outcome is associated with early diagnosis, aggressive and prolonged anti-tuberculous treatment, timely surgical intervention if necessary and correction of the underlying immunodeficiency.

Topic: Bacterial infections

Paper number: 1418

Presentation type requested: Poster Presentation

**BORRELIOSIS IN CHILDREN OF THE UNIVERSITY CLINIC OF PAEDIATRICS AND ADOLESCENT MEDICINE
GRAZ, AUSTRIA FROM 2000 TO 2006**

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<pre>BACKGROUND AND AIMS:</pre>To report a retrospective analysis of all inpatients treated for Lyme borreliosis at the University Clinic of Paediatrics and Adolescent Medicine Graz between January 2000 and December 2006.
<pre>METHODS:</pre>All medical records with the ICD-diagnosis "borreliosis" at discharge were reviewed systematically concerning demographic data, clinical symptoms, serologic tests and cerebrospinal fluid (CSF) parameters.
<pre>RESULTS:</pre>Within seven years 83 patients (incidence 9/100,000 children) aged 23 months to 16.1 years (mean 8.3 years) were treated either for neuroborreliosis (NB) (81/83; 97.6%) or Lyme arthritis (2/81; 2.4%).

60/81 (74.1%) patients were classified as having confirmed NB according to clinical picture, CSF pleocytosis and either intrathecal antibody synthesis (58/60; 96.6%) or positive CSF *Borrelia* culture (1/60; 1.7%) or both (1/60; 1.7%). In 19/81 (23.5%) children clinical picture, serologic IgM or IgG antibodies and CSF pleocytosis were interpreted as most likely NB. 2/81 (2.4%) patients with clinical symptoms and positive IgM and/or IgG serum antibodies were classified as having possible NB. Lyme arthritis was diagnosed on positive *Borrelia* culture from joint fluid.

62/81 (76.5%) children suffered from facial palsy, which could be assigned to 46 (74.2%) confirmed, 15 (24.2%) most likely, one (1.6%) possible NB. 7/81 (8.6%) children with paralysis of other cranial nerves (III, IV, VI) had confirmed NB. In 13/81 (16%) patients recurrent headaches was the leading symptom of eight (61.5%) confirmed, four (30.8%) most likely, one (7.7%) possible NB.
<pre>CONCLUSIONS:</pre>Borreliosis is a common disease in children. Facial palsy is the most frequent symptom of that disease in this age group.

Topic: Bacterial infections

Paper number: 1423

Presentation type requested: Oral Presentation

4600G/G GENOTYPE OF THE ENDOTHELIAL PROTEIN C RECEPTOR GENE ASSOCIATES WITH SUSCEPTIBILITY AND SKIN LESIONS IN CHILDREN WITH SYSTEMIC MENINGOCOCCEMIA

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BACKGROUND AND AIMS: Meningococcal disease may present as sepsis, meningitis or a combination of both. The endothelial protein C (PC) receptor (EPCR) facilitates PC activation by the thrombin-thrombomodulin complex. A soluble form of this receptor (sEPCR) inhibits both activated PC activity and PC activation by competing for PC with membrane-associated EPCR. Two polymorphisms in the EPCR gene (4600A/G and 4678G/C) have been shown to affect EPCR levels. In patients with meningococcal sepsis, low PC levels have been correlated with increased severity and poor outcome. This prospective, multicenter study examined the relationship between meningococcal disease, skin lesions and the EPCR polymorphisms. **METHODS:** 190 previously healthy children with meningococcal infection from 97 pediatric hospitals in Germany, Switzerland, Italy, and Austria and 190 healthy controls were included in the study. **RESULTS:** Significant differences in genotype frequencies between patients and controls were only observed in the EPCR 4600C/T variant: The rare GG genotype was more frequent in patients (2.1%) compared to healthy controls (0.5%, $p=0.02$). In the patient group, the G allele was more prevalent (13%) in patients with skin lesions than others (4%, $p=0.07$). **CONCLUSIONS:** In our study we provide first evidence that the EPCR 4600A/G polymorphism is not only associated with development of skin lesions in meningococemia but also the risk for meningococcal disease. In agreement with these data others have shown that the G allele is associated with elevated levels of soluble EPCR.

Topic: Bacterial infections

Paper number: 1427

Presentation type requested: Poster Presentation

MYCOBACTERIUM BOHEMICUM: 4 CHILDREN WITH CERVICAL LYMPHADENITIS

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BACKGROUND AND AIMS: Nontuberculous mycobacteria (NTM) are a common cause of cervicofacial lymphadenitis in children. In 1998, a novel species, *Mycobacterium bohemicum*, was

described. As a cause of cervicofacial lymphadenitis so far, published data on *M. bohemicum* are limited to the original species description and 5 additional case reports worldwide.

METHODS: We performed a retrospective study in 3 pediatric hospitals of Austria.

M. bohemicum was identified with PCR-based sequence analysis of the 16S ribosomal RNA gene which can be used for the effective differentiation from other *Mycobacterium* species.

RESULTS: We report on 4 children with cervical lymphadenitis caused by *M. bohemicum* in Austria. Two were females, two were males, their age was between 2 and 3,5 years. Lymph node excision was performed in all patients. Histology demonstrated granulomatous and partly necrotizing inflammation with multiple giant cells and perinodal fibrosis. In 3 patients the affected lymph node was completely removed and no antibiotic treatment was performed. In 1 patient only incomplete removal of the affected lymph node was possible and treatment with clarithromycin and rifampicin was applied for three months.

All patients showed uncomplicated wound healing and remained healthy for more than 12 months after the end of therapy.

CONCLUSIONS: Our observations suggest, that infections with *M. bohemicum* might be more common than previously thought. We believe that *M. bohemicum* is worth to be listed among the species which cause nontuberculous mycobacterial infection.

Topic: Bacterial infections

Paper number: 1445

Presentation type requested: Oral Presentation

QUANTIFERON-TB GOLD TEST (QTF) AND DIAGNOSIS OF LATENT TUBERCULOUS INFECTION (LTBI) AND TUBERCULOSIS (TB) IN CHILDREN

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BACKGROUND AND AIMS: To compare levels of agreement between QTF and tuberculin test (TST) in BCG vaccinated and non-vaccinated children, and in patients with and without risk factors for tuberculosis. To study the impact of age and malnutrition in QTF's results. To compare levels of IFN-gamma in LTBI and TB.

METHODS: Multi-centric, prospective study excluding immunocompromised children. TST and QTF were compared in three groups: immigrants, TB contacts and TB. Agreement was measured using Kappa coefficient. To compare data ANOVA, chi2 and Spearman coefficient were used.

RESULTS: 212 children were included: 145 non-infected children, 32 LTBI and 35 TB. Mean age was $4,85 \pm 3,65$ years. 56% had received BCG. The overall agreement between QTF and TST was good (k 0,79). Agreement in BCG vaccinated children (k 0,32) and LTBI (k-0,06) was poor and excellent in non-vaccinated (k 0,9), non infected patients and TB (k 0,95). Patients with high risk of TB (non-vaccinated exposed children) presented better agreement than other patients ($p < 0,05$). There were no differences between age/malnutrition and IFN production. IFN levels were similar in LTBI and TB. We observed a correlation between mm of TST reaction and IFN production ($p < 0,01$) and a higher rate of indeterminate results in TB ($p = 0,027$).

CONCLUSIONS: In non-vaccinated children, non-infected patients, and TB patients the agreement between QTF and TST is excellent. In vaccinated children and LTBI the agreement is poor. Age or malnutrition do not influence QTF's results. Patients with TB present a high rate of indeterminate results, suggesting transient immunosuppression. The IFN levels do not differentiate LTBI from TB.

Topic: Bacterial infections

Paper number: 1461

Presentation type requested: Oral Presentation

PANTOEA AGGLOMERANS AS A CAUSE OF LOBAR PNEUMONIA IN A CHILD WITH HEREDITARY SPHEROCYTOSIS- A CASE REPORT

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BACKGROUND AND AIMS: Pantoea agglomerans is a gram-negative aerobic bacillus in the family Enterobacteriaceae. Pantoea infections are rare in humans, usually associated with plant thorn injuries or outbreaks traced to contaminated parental nutrition, intravenous anesthetics or packed erythrocytes. Spontaneously occurring bacteremia has rarely been reported, especially in children, and the role of P. agglomerans as a pathogen in such circumstances is unclear. **METHODS:** We report a case of a 13-year-old boy with Hereditary Spherocytosis with no previous hospital admissions and with not known previous vegetative trauma who developed lobar pneumonia caused by P. agglomerans. **RESULTS:** On examination he was unwell, feverish, jaundiced and pale. The air entry on the right middle and lower lobe was reduced and his spleen was palpable 5 cm below the costal margin. A CXR revealed a right lower lobe consolidation. He had mild leucocytosis with neutrophilia, severe hemolytic anemia, moderately elevated ESR and CRP and pneumococcal antigen in urine negative. He was started on high-dose Cefotaxime and had several blood transfusions. On day 3 of his admission continued to have fever above 39°C, increased oxygen requirements and a rise of CRP and ESR. He then was started on Imipenem-cilastatin and Vancomycin. P. agglomerans was the sole pathogen isolated, once, on the initial blood culture, susceptible to most antibiotics. After a 14-day course of antibiotics had a full recover. **CONCLUSIONS:** P. agglomerans is a very uncommon cause of infection in children. This is the only known case to us of spontaneous P. agglomerans bacteremia causing pneumonia.

Topic: Bone, joint and soft tissue infections

Paper number: 1048

Presentation type requested: Poster Presentation

CLINICAL REVIEW OF THE ORBITAL AND PERIORBITAL CELLULITIS IN SOUTH KOREAN CHILDREN

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BACKGROUND AND AIMS: Orbital cellulitis is a rare but serious complication of sinusitis in children. Periorbital cellulitis is often difficult to distinguish from orbital cellulitis. Orbital cellulitis can result in significant complications, including blindness, cavernous sinus thrombosis, meningitis, subdural empyema, and brain abscess. The purpose of this study is to describe the clinical features of orbital and periorbital cellulitis in a pediatric population and to assess the predisposing factors and their complications. **METHODS:** 41 patients less than 18 years old who were admitted between January 2000 and December 2006 to Hanil General Hospital and Kyunghee University Hospital under the diagnosis of orbital or periorbital cellulitis. The analyses included clinical characteristics of orbital and periorbital cellulitis, dermatographics, past history, predisposing factors, clinical presentations, treatments, and complications, retrospectively. **RESULTS:** Among 41 patients, 34 patients had periorbital cellulitis, 7 patients had orbital cellulitis. While paranasal sinus disease was the most common predisposing cause in orbital cases, skin lesion, insect bite, dacryocystitis and conjunctivitis were the common causes in periorbital cases. In comparison with periorbital cases, orbital cases had higher level of white blood cell count, erythrocyte sedimentation rate, and C-reactive protein. Blood cultures were taken in many patients, but only one *Staphylococcus aureus* from blood was isolated. **CONCLUSIONS:** From the results of our data, when patients show periorbital erythematous swelling with ophthalmoplegia, chemosis and proptosis, orbital CT scan are required to make diagnosis of orbital cellulitis and follow by recommending proper antibiotic administration. If there is no clinical improvement, repeat CT scan and/or surgical intervention should be considered.

Topic: Bone, joint and soft tissue infections

Paper number: 1135

Presentation type requested: Poster Presentation

CERVICOFACIAL ACTINOMYCOSIS IN CHILDREN A DIFFICULT INDEX OF SUSPICION

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<pre>BACKGROUND AND AIMS:</pre>Cervicofacial actinomycosis in children may mimick true tumor unless thoroughful bacteriological investigation is achieved; the aim of this poster is to guideline facial tumors diagnosis investigations in children.<pre>METHODS:</pre>Tumor imaging: facial CT scan, RMI

Surgical exploration: Bone and tissue biopsy

Extensive bacteriological analysis including aerobic and anaerobic cultures

<pre>RESULTS:</pre>A young teenager is referred for facial swelling, localized paresthasias of the right cheek, induration, localized pain of the angle of jaw, headaches lasting for several months accounting for the diagnosis of a pseudoinflammatory tumor of the jaw based upon biopsic histological findings; secondary clinical appearance of a temporal subcutaneous abscess surgically drained leads to microbiological diagnosis of cervicofacial actinomycosis. After surgical drainage and prolonged antibiotherapy, complete healing of lesions is obtained<pre>CONCLUSIONS:</pre>Actinomycosis is rare in childhood because of a better care of teeth and a large use of antibiotics. The diagnosis is always difficult and must always rely on microbiological identification.

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Topic: Bone, joint and soft tissue infections

Paper number: 1234

Presentation type requested: Poster Presentation

RISKS OF CYCLOSPORINE THERAPY IN PEDIATRIC AGE

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BACKGROUND AND AIMS: Cyclosporine has been found to be effective in a variety of inflammatory skin disorders such as psoriasis in adults and severe childhood atopic dermatitis. It acts by reducing the number of activated T-cells expressing interleukin 2 receptors. Nevertheless, cyclosporine's use has not been systematically investigated in paediatric age.

METHODS: **RESULTS:** Two children, aged 4 and 13 years, with atopic dermatitis refractory to topical corticotherapy and one children, aged 2 years, with severe erythrodermic psoriasis, were treated with cyclosporine.

The first case of atopic dermatitis showed clinical improvement with reduction of scaly crusts but developed secondary impetigo. Cyclosporine was interrupted and after antibiotherapy, the patient started topical tacrolimus and had no relapses afterwards. The second case of atopic dermatitis, with severe eczema and impetigo, developed severe facial herpes simplex infection and cyclosporine was suspended accordingly. The third case, with severe psoriasis and impetigo, was treated with flucloxacillin and cyclosporine. The child developed an anaphylactic reaction with generalized oedema and urticariform lesions. This was interpreted as a beta lactam hypersensitivity reaction, although it's not possible to exclude cyclosporine toxicity. None of the patients developed hypertension or renal impairment. All patients were investigated and excluded for primary immunodeficiency.

CONCLUSIONS: Cyclosporine should be used in single or intermittent short courses for all, except in the most severe cases. The potential role of cyclosporine in erythrodermic psoriasis and atopic dermatitis remains under scope and although the three cases reported don't allow definitive conclusions, caution is advised.

Topic: Bone, joint and soft tissue infections

Paper number: 1310

Presentation type requested: Poster Presentation

AN UNUSUAL CASE OF CERVICAL LYMPHADENITIS CAUSED BY MYCOBACTERIUM INTERJECTUM

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BACKGROUND AND AIMS: With molecular biologic methods many non-tuberculous mycobacterial (NTM) strains, previously thought to be saprophytes, have been recognized to cause infections in non immunocompromized patients.
METHODS: We report the case of a previously healthy girl with a cervical adenitis. Serologic investigation is negative and initial treatment by amoxicilline-clavulanate is ineffective.
RESULTS: Suspecting an atypical mycobacterium infection, a complete resection of the lymph node is realized. Fluorescent staining shows 8 acid-fast bacilli and the PCR result (BDProbe Tec®) is compatible with Mycobacterium tuberculosis. Conventional anti-tuberculous therapy is started while awaiting the culture. Nevertheless result of the culture was not compatible for M tuberculosis and a reverse hybridization DNA probe assay is performed (INNO-LIPA®) on the DNA extracted from the culture, but no reaction occurs with the probes present on the strip. Consequently a 16s rRNA gene sequencing is realized, identifying finally a Mycobacterium interjectum. Anti-tuberculous treatment is stopped and no recurrence occurred.
CONCLUSIONS: Gene sequencing can determine rapidly and accurately the strain and permits the classification of previously undescribed species.

Reviewing the published literature, our report is the ninth case of cervical adenitis caused by Mycobacterium interjectum, since the identification of the strain in 1993 by Springer et al and demonstrates the pathogenic role of M. interjectum. Henceforth we will compare the clinical course, the treatment and outcome of these published cases with our data.

Topic: Bone, joint and soft tissue infections

Paper number: 1323

Presentation type requested: Poster Presentation

NECROTIZING FASCIITIS OF ABDOMINAL WALL - COMPLICATION ASSOCIATED WITH VARICELLA (CASE REPORT)

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<pre>BACKGROUND AND AIMS:</pre>Necrotizing fasciitis is a distinctive soft tissue infection usually caused by group A streptococcus.<pre>METHODS:</pre>We present a case of necrotizing fasciitis of the abdominal wall in a 6-year-old boy with preexisting varicella infection. Hospitalisation was complicated during the fourth day of chickenpox infection.<pre>RESULTS:</pre>A satisfactory outcome depends on early diagnosis and aggressive surgical debridement, along with appropriate antibiotic therapy. <pre>CONCLUSIONS:</pre>The incidence of invasive diseases due to Streptococcus pyogenes in children has increased.

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Topic: Bone, joint and soft tissue infections

Paper number: 1353

Presentation type requested: Poster Presentation

BCG OSTEITIS CAUSED BY BCG TOKYO STRAIN CONFIRMED WITH ANALYSIS OF REGION OF DIFFERENCE

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BACKGROUND AND AIMS: Bacille Calmette-Guérin (BCG) osteitis is a rare complication of BCG vaccination. In Korea, 95% to 99% of children have been vaccinated by BCG vaccine within the first month of life, but culture-proven BCG osteitis has not been reported yet. The aim of this study was to distinguish BCG substrain from other mycobacterium species. **METHODS:** An 11-month-old boy with tenderness of the right knee and a 14-month-old girl with swelling of the left ankle were admitted to out clinic. Having no tuberculosis contact history, they had been vaccinated with BCG Tokyo strain with multipuncture device at 3-week-old. Mycobacterium were cultured in the curettage specimens. **RESULTS:** AccuProbe test (Gen-Probe Inc. San Diego, CA) and the real-time PCR for the IS6110 region were not helpful to distinguish BCG strain from *M. tuberculosis*. A designed multiplex PCR for the *senX3-regX3* intergenic region and the deletion of region of difference 1 (RD1) revealed that the pathogens were BCG strains, not *M. tuberculosis* strains. The distinct fingerprint patterns for RD8 and RD14 are useful for differentiating between BCG Pasteur and BCG Tokyo strain. **CONCLUSIONS:** We report the first cases of BCG osteitis identifying the pathogen as BCG Tokyo strain, especially differentiated from *Mycobacterium tuberculosis* or other nontuberculous mycobacteria (NTM), by using multiplex PCR.

Topic: Bone, joint and soft tissue infections

Paper number: 1439

Presentation type requested: Poster Presentation

SEPTIC PULMONARY EMBOLI PRESENTING WITH DEEP VENOUS THROMBOSIS ASSOCIATED WITH SEPTIC ARTHRITIS AND ACUTE OSTEOMYELITIS.

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BACKGROUND AND AIMS: Septic pulmonary embolism, deep vein thrombosis and bone or joint infections a triad which is rarely seen in children. This clinical syndrome is a life threatening disorder which requires prompt diagnosis and aggressive treatment.**METHODS:** We report a 14 year old boy who was diagnosed with septic pulmonary embolism, deep vein thrombosis and disseminated staphylococcal disease associated with septic arthritis and osteomyelitis. He presented with right knee pain, right extremities edema, fever, cough and erythematous rash of 5 days duration. The diagnosis of septic arthritis was confirmed by radiological and cytological evaluation. A chest radiograph and chest computed tomography showed bilateral multiple nodular densities. Doppler ultrasound revealed subcutaneous thrombosis of the right femoral vein and popliteal vein. Antibiotic and anticoagulation treatment was begun. Both blood and synovial fluid cultures grew *Staphylococcus aureus*. On the 24th day, his bone radiographic findings showed acute osteomyelitis of the right femur. On the 38th day of his hospitalization, lung lesions and edema of right lower extremity resolved. However, after a 12 week course of appropriate antibiotic treatment femur radiograph were consistent with chronic osteomyelitis.**RESULTS:** **CONCLUSIONS:** In conclusion, the evaluation of patient who present septic pulmonary embolism, it is necessary to consider deep vein thrombosis and bone or joint infections. The early diagnosis and appropriate treatment is crucial in this clinical syndrome.

Topic: Central nervous system infections

Paper number: 1014

Presentation type requested: Poster Presentation

MULTIPLE BRAIN ABSCESSSES IN 3 PEDIATRIC PATIENTS DURING TREATMENT FOR ACUTE LYMPHOBLASTIC LEUKEMIA

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BACKGROUND AND AIMS: Brain abscesses in children with leukemia are a rare complication, caused mainly by fungi, but also by bacteria and rare organisms. **METHODS:** We report three boys aged 2, 4, and 15 years who were treated for acute lymphoblastic leukemia (ALL) according to the ALL-BFM 2000 protocol. After 4-5 weeks of dexamethasone therapy and preceding pancytopenia the patients manifested focal neurologic signs: hemiparesis (n=3), aphasia (n=1) and seizures (n=1). CSF-analysis showed increased protein and mild pleocytosis in 2 patients, and was normal in one. MRI revealed multiple supratentorial brain abscesses in all patients. In spite of brain biopsy in one patient, the infectious agent could not be identified; in the two other patients CSF-PCR yielded the diagnosis of acanthamoeba and toxoplasma gondii, respectively. All patients received broad-spectrum antibiotics and liposomal amphotericin-B in combination with hyperbaric oxygen therapy; the patient with acanthamoeba received additional specific therapy with fluconazole, iv pentamidine and miltefosine, the one with toxoplasmosis trimethoprim/sulfametrol. After an interval of 19, 14 and 10 days, respectively, antileukemic therapy was restarted. **RESULTS:** All 3 patients survived and showed complete resolution of neurological and MRI findings within 4 months. To date, all patients are in remission from their ALL, two are still on therapy. **CONCLUSIONS:** Brain abscesses are a rare and potentially fatal complication of ALL-therapy that requires treatment with empiric multimodal therapy including broad-spectrum antibiotics and antimycotics. HBO can be used as supportive measure. In our experience, surgical intervention was not indicated. Antileukemic treatment should be restarted as soon as possible.

Topic: Central nervous system infections

Paper number: 1081

Presentation type requested: Poster Presentation

BRAIN ABSCESS IN CHILDREN- A CASE SERIES OF 20 YEARS

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BACKGROUND AND AIMS: Brain abscess is rare in children. Predisposing factors are found in almost 85% of the cases. Overall, 25% of brain abscesses develop in children, mostly in the 4-7 years age group.

The aim of our study was to characterize children with brain abscesses treated in our hospital, identify risk factors, pathogens, and short term outcome.

METHODS: A retrospective cohort of 20 years period, (1987-2007) included 23 children (0- 18 years). Medical records were analyzed for age, gender, presenting symptoms and signs, predisposing factors, laboratory tests, imaging, microbiology results, treatment and outcome. **RESULTS:** 65% (15/23) were males. Mean age was 6.5 years (43% > 5 years old). 52% were referred from other hospitals. Predisposing factors were identified in 74%. Main symptoms and signs included headaches, vomiting, fever, neurological signs convulsions, (40%, 30%, 78%, 74%, and 44% respectively). Parietal and / or frontal lobes were mainly involved (71%). White blood cell count was normal in 65%. Surgical intervention included burr hole and open craniotomy (76%, 24% respectively). Ceftriaxone and Metronidazole were commonly used as initial therapy. Cultures from abscesses were positive in 52%. There were 21 diverse isolates; Aerobes in 57%, anaerobes in 38%, and Candida in 1 case. All patients survived. **CONCLUSIONS:** Manifestations of brain abscess may be subtle. A high index of suspicion and early imaging are warranted. Mortality is rare. Limited number of positive cultures may reflect prior antibiotic therapy or difficulty in culturing anaerobic microorganisms.

Topic: Central nervous system infections

Paper number: 1104

Presentation type requested: Poster Presentation

A FATAL CASE OF MENINGOCOCCAL SEPTICAEMIA

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BACKGROUND AND AIMS: The following case adds to the clinical manifestations and course of meningococcal disease. **METHODS:** Describe the case of a 6-years old girl with a history of epileptic seizures treated with carbamazepine who presented at the emergency department because of vomiting (2 episodes). **RESULTS:** Clinical and laboratory findings: mild psychomotor delay with excellent level of consciousness, BP: 100/60mmHg, temperature: 39°C, skin pallor, normal turgor, without rash, red throat without pus, normal lymph glands, mild abdomen's tenderness, no neck stiffness or meningismus, cardiorespiratory system normal. WBC: 5070 (P 88.7%, L 9.5%), RBC: 4.57x10⁶, Hgb: 12.5, HCT: 37.1, PLT: 195.000, ESR: 32, Urea:34, Cr:0.6, Glu:159, SGOT:33, SGPT:26, K:3.7, Na:139 CRP:4.1. The patient was considered to suffer from a viral gastroenteritis and was discharged with dietary instructions. 4 hours later she presented acutely with widespread purpuric rash, deterioration of consciousness level and BP: 65/50mmHg. Antibiotics, dexamethazone, fresh frozen plasma and inotropes were immediately initiated with the suspicion of meningococcal septicaemia. Coagulation tests were found very prolonged and fibrinogen value low (<50mg/dl). Despite all efforts the patient died after 2 hours. Cerebrospinal fluid analysis: WBC 200 (poly:93%, lymph:7%), RBC:9850, Glu:112, Tot.protein:63. PCR of CBF and blood culture: *Neisseria meningitidis* Group B.

CONCLUSIONS: The rapid evolution of septicaemia in our case is outstanding. The question is whether the underlying epileptic disorder and/or the use of carbamazepine contribute as independent factors to the fatal spread of meningococcus. Finally, paediatricians should be cautious evaluating children with psychomotor delay as clinical manifestations of a serious illness might be underestimated.

Topic: Central nervous system infections

Paper number: 1108

Presentation type requested: Poster Presentation

THE BACKGROUND OF PATIENTS SUFFERING FROM BACTERIAL MENINGITIS -A STUDY BASED ON QUESTIONNAIRE FOR PATIENT' FAMILY MEMBERS-

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BACKGROUND AND AIMS: The information on bacterial meningitis was analyzed to clarify the key symptoms at the early stage and the background of bacterial meningitis. **METHODS:** In 2007, the questionnaire was e-mailed to the family members in The Organization for the Protection of Children from Bacterial Meningitis in Japan. Answers were mailed or e-mailed back by 29 members. **RESULTS:** The causative bacteria were Haemophilus influenzae type b in 17 cases, Streptococcus pneumoniae in eight cases, Group B hemolytic streptococcus in two cases, and others in three cases. The average ages of the patients were 23.0 ± 13.8 months for Hib and 10.4 ± 6.0 months for Streptococcus pneumoniae, the age for Streptococcus pneumoniae being significantly lower ($p=0.0043$). The mortality rate was 16% and the sequela-rate was 36%. On comparison of the interval between the onset of fever and the effective therapy, the interval was found to be significantly shorter for the cured cases (1.5 ± 1.0 days) than for the death or sequela cases (5.4 ± 10.2 days) ($p=0.0348$). There was no significant difference in the prognosis between middle-sized hospitals and the large-sized hospitals. Among the children attending day care centers, 90% of the children suffered from meningitis within a year. The major symptoms were vomiting, headache and stiff neck. In 9/29 cases (31%), it appeared that the initial suggestion of a viral infection cold might have caused the parents to delay the following consultation. **CONCLUSIONS:** It was clarified that the early diagnosis of bacterial meningitis was very difficult, and that the interval of three days is the critical limit for a good prognosis.

Topic: Central nervous system infections

Paper number: 1151

Presentation type requested: Poster Presentation

CLINICAL OUTCOMES OF TICK-BORNE ENCEPHALITIS IN CHILDREN IN SIBERIA

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BACKGROUND AND AIMS: Kuzbass (Western Siberia) is considered to be characterized as an endemic place for tick-borne encephalitis (TBE). Children 1-14 years of age annually account for 20-30% of TBE cases. The most severe outcomes occur in cases after focal forms of acute period of TBE.

The aim of investigation was to revise clinical outcomes of focal forms of TBE in children in their duration.

METHODS: We analyzed duration of neurological status in 82 children who had suffered focal forms of TBE and were treated at the Kemerovo Neurological Hospital between 1997 and 2007. TBE was diagnosed on the basis of clinical manifestations and epidemiological anamnesis. The diagnosis in each case was serologically confirmed. Paired samples of the blood serum and cerebrospinal fluid were tested by means of ELISA and hemagglutination inhibition test. **RESULTS:** Most patients (72 cases, 87%) suffered from persistent paresis. In 48 cases (58.5%) repeated courses of treatment resulted in a partial regression of paresis. In 16 patients (19.5%) full recovery of the motor functioning was achieved within four-six months after the acute period. In 18 cases (22%) the outcome of TBE was manifested as tetraplegia with the total cognitive impairment. In 38 cases (46.3%) the hyperkinetic syndrome was diagnosed which combined with Kojevnikoff's epilepsy and motor disturbances. **CONCLUSIONS:** Prognosis for the patients can be unfavorable because of entailing persistent neurological disturbances. This leads to partial or complete loss of previously acquired skills, impairment of speech, intellectual disorganization and reducing of adaptation potential.

Topic: Central nervous system infections

Paper number: 1156

Presentation type requested: Poster Presentation

TUBERCULOUS MENINGOENCEPHALITIS IN IMMUNOCOMPETENT CHILDREN

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BACKGROUND AND AIMS: The high morbidity and mortality of tuberculous meningoencephalitis (TBM) warrants an early diagnosis and treatment. In Constanta County during the last 3 years we didn't had any case of TBM. In Romania BCG vaccine is obligatory and has been proven to reduce the incidence of severe disseminated disease in children.

We report 5 cases of TBM, their evolution and complications.

METHODS: Retrospective study about 5 cases of TBM hospitalized in Children Infectious Diseases Department of Clinical Infectious Diseases Hospital of Constanta. We analyze aspect of cerebrospinal fluids, pulmonary X-ray, inflammatory tests from blood and cerebral CT/MRI examination.
RESULTS: We diagnosed 5 cases of TBM who were hospitalized in Children Infectious Diseases Department at the beginning of year 2007. Median age was 2 years and 5 months (ranges: 6 months and 5 years). Contact tracing revealed that TB had been transmitted by a household contact person with proven pulmonary TB in all cases. Early diagnosis of TBM was delayed in one case. We reported a toxic hepatitis to antituberculosis treatment in one case. Hydrocephalus was present with different degree in all 5 cases. In one case we noticed transitory decreased of visual acuity and in another one definitive lost of it and transitory decreased of hearing. Both cases of children with age less than 2 years survived with severe neurological deficits. No deceased were reported.
CONCLUSIONS: TBM still represents a threatening disease in infants. It draws attention to importance of TBM as a differential diagnosis in children with suspected viral meningoencephalitis.

Topic: Central nervous system infections

Paper number: 1204

Presentation type requested: Poster Presentation

NEUROLOGICAL COMPLICATIONS OF VARICELLA IN CHILDREN

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BACKGROUND AND AIMS: Clinical, paraclinical and terapeutical evaluation of neurological complications in children with varicella.
METHODS: We analyzed 639 children with varicella admitted in Clinical Hospital of Infectious and Tropical Disease "Dr.V.Babes" Bucharest from January 2001 to December 2007.
RESULTS: 22 children (3,44%) had neurological complications as follows : 16 – acut cerebellar ataxia, 5 – cerebellar ataxia and meningitis; and one had encephalitis. We established the diagnosis on the basis of clinical aspects (including neurological examination),cerebrospinal fluid examination and electroencephalogram. Neurological sings were diagnosed starting from day 7 after the onset of rash and consisted of : gait disorders (17), cerebellar ataxia (14), fever (10), vomiting (7), neck stiffness (5), nistagmus (4), seizures, confusion and coma (1). In 12 cases CSF showed limphocytic pleiocytosis (36/mm^c -197/mm^c) and elevated levels of protein (0,66g% – 0,99g%); 10 cases had CSF normal. Electroencephalogram showed dominant theta wave with totally or partially supresion of alpha activity in all patients. All cases showed clinical and EEG improvement at the end of the treatment.
CONCLUSIONS: The most frequent neurological manifestation was cerebellar. The evolution was good under treatment, with no sequelae at 1 month of follow up.

Topic: Central nervous system infections

Paper number: 1221

Presentation type requested: Oral Presentation

SPINAL EPIDURAL ABSCESS IN AN INFANT

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BACKGROUND AND AIMS: Spontaneous spinal epidural abscess is rare in children. **METHODS:** The authors present a case of a spinal epidural abscess in an infant. **RESULTS:** A previously healthy 1-month-old girl, with no past history of trauma, was admitted to our hospital with a 2 days history of low grade fever, a dorsal spinal mass with inflammatory signs but without any other visible skin abnormalities. There were no neurological deficits. Leukocyte count was 29,560/ul and C Reactive Protein was 9 mg/dl.

Ultrasound and MRI of the vertebral column were performed and showed a posterior epidural abscess from T6 to T11 with medular compression and subcutaneous infiltration. There were no signs of osteomyelitis. Surgical drainage was performed and vancomycin and cefotaxime were started. Oxacillin-sensitive *Staphylococcus aureus* was isolated. Vancomycin was continued for 4 weeks. During the hospital stay, she was afebrile, without focal neurological deficits or meningeal signs. MRI of the spine done postoperatively on day 14, showed no residual fluid collection in the epidural space and no anatomic defects. A primary immunodeficiency was excluded.

Ten months later the child is doing well without neurological sequelae.

CONCLUSIONS: In spinal epidural abscesses there may initially be few signs and symptoms. However, in this case the presence of a dorsal mass led to prompt investigation. Delay in the diagnosis and treatment increases the risk of neurological sequelae. Therefore, one must have high index of suspicion for early diagnosis and initiation of appropriate therapy.

Topic: Central nervous system infections

Paper number: 1223

Presentation type requested: Poster Presentation

EVALUATION OF CHILDREN WITH INVASIVE MENINGOCOCCAL DISEASE HOSPITALIZED BETWEEN 2003-2007

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BACKGROUND AND AIMS: We aimed to evaluate the cases of invasive meningococcal disease hospitalized in our clinic. **METHODS:** The dermographic, clinical and laboratory features of 16 patients with invasive meningococcal disease who were hospitalized between 2003-2007 were investigated retrospectively. **RESULTS:** Of 16 children (8 girls, 8 boys) with invasive meningococcal disease the exact diagnosis was: 56.25% meningococemia, 31.25% meningococemia (+) meningitidis, 12.5% meningitidis. Their age: 22.93±21.42 months, hospitalisation duration: 9.83±8.62 days, mortality rate: 43.75%. Neisseria meningitidis was isolated with a rate 56.25% in blood- and 12.5% in CSF cultures. In 25% of the cases Gram (-) diplococci were observed on the Gram stain from the petechial skin lesions. Prognostic factors for survival were as follows: time between the onset of fever and the admission to the hospital, time between the onset of rash and the admission to the hospital, leucocyte count, serum AST and CRP levels, and presence of respiratory support treatment.

The patients were separated according to their diagnosis and were compared with each other for prognostic factors: age, time between the onset of fever and admission to the hospital, leucocyte count and serum AST levels were significantly different ($p < 0.05$) between meningococemia and meningococemia(+) meningitis subgroups

CONCLUSIONS: Invasive meningococcal disease has still high mortality and morbidity rate. Time between the onset of fever and the admission to the hospital, time between the onset of rash and the admission to the hospital, leucocyte count, serum AST and CRP levels, presence of respiratory support treatment were prognostic factors for survival.

Topic: Central nervous system infections

Paper number: 1239

Presentation type requested: Poster Presentation

HERPES SIMPLEX ENCEPHALITIS (HSE): A CASE OF SECONDARY NEUROLOGICAL DETERIORATION WHILE ON ACYCLOVIR THERAPY

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BACKGROUND AND AIMS: Nowadays, despite acyclovir therapy, HSE is still associated with poor neurological outcome. Based on the latest genetic research a new treatment with interferon has been proposed. Secondary neurological deterioration has been reported but its pathogenesis is usually unclear, posing diagnostic and therapeutic difficulties.

METHODS:

RESULTS: A 7 month old infant, presented with febrile focal seizures and the MRI showed multiple bilateral, T2-weighted, hyperintense lesions. HSE was confirmed by PCR of HSV-1/DNA in the cerebrospinal fluid (CSF) and acyclovir was started with clinical improvement. After 12 days, he presented fever and irritability. Interferon alpha-2b was started but, because of haematological toxicity and no noticed improvement, was discontinued after 8 days. At day 23, he presented choreoathetosis, increased level of total CSF IgG and high CFS IgG-index (4,36) with oligoclonal bands, HSV1 PCR was negative and no new lesions were seen on the MRI. Methylprednisolone was started with transient improvement. Choreoathetosis management was difficult and, after four months, he maintains important developmental delay. Our patient showed weak interferon production in response to HSV-1, "in vitro", although no genetic defect has been yet identified.

CONCLUSIONS: Despite the abnormal interferon response to HSV-1, our patient didn't improve with interferon therapy. This could be attributed to the delay in its beginning, although the experience in humans is very limited.

An immune-mediated cause was suspected based on choreoathetosis and intrathecal immune activation. However, the improvement after methylprednisolone was transitory and the natural history of the disease may have played a definite role in the outcome.

Topic: Central nervous system infections

Paper number: 1259

Presentation type requested: Poster Presentation

CHRONIC MENINGITIS IN A CHILD

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BACKGROUND AND AIMS: Chronic meningitis is a challenging syndrome to be managed. The etiologic differential diagnosis is broad and may be unsuccessful despite the development of modern diagnostic techniques. **METHODS:** We present a case of chronic meningitis in a child. **RESULTS:** A 7-year-old boy with headache, vomiting, and insomnia for the last year was admitted to the Emergency Department. The family reported past antituberculosis treatment without improvement. Physical examination showed nuchal rigidity. Cerebrospinal Fluid (CSF) examination revealed 400 white blood cell/mm³, lymphocytes 50%, reticulomonocytes 25%, plasmacells 2%, neutrophils 21%, monocytes 2%, protein 362mg/dL, glucose 29mg/dL, without any evidence of bacterial, mycobacterial or mycological infection. Isoniazid, rifampin, pyrazinamid, and prednisone were re-started at appropriate dosages. Two months later, a following CSF examination found 80 white blood cell/mm³, lymphocytes 61%, reticulomonocytes 27%, plasmacells 5%, neutrophils 6%, monocytes 1%, protein 139mg/dL, glucose 37mg/dL and complaints were the same. Then, ethambutol was added and ceftriaxone and vancomycin were given without any CSF or clinical improvement. The family reported also cognitive deterioration. Magnetic Resonance Imaging demonstrated hydrocephalus due to a membrane at the distal extremity of the aqueduct of Sylvius. Amphotericin B was given for 3 months and full recovery was achieved. The last CSF examination showed 25 white blood cell/mm³, lymphocytes 67%, reticulomonocytes 29%, plasmacells 1%, neutrophils 1%, monocytes 2%, protein 45mg/dL, glucose 51mg/dL. The patient is doing well and attending school successfully. **CONCLUSIONS:** In patients with chronic meningitis fungal infections must be in mind.

Topic: Central nervous system infections

Paper number: 1294

Presentation type requested: Oral Presentation

SEQUELAE OF BACTERIAL MENINGITIS: NEURODEVELOPMENTAL AND ENT OUTCOMES

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BACKGROUND AND AIMS: Developmental, neurologic and hearing deficits are potential sequelae of bacterial meningitis in children. In our hospital, a collaboration follow-up protocol has been implemented, including Infectious Diseases, Development and Ear-Nose-Throat (ENT) clinics. We are presenting the outcomes of the first two years of this protocol. **METHODS:** Retrospective case-analysis of children in the protocol between 2006-2007 with bacterial meningitis, regarding demographic, clinical and microbiological findings and sequelae, namely hearing impairment and neurologic and cognitive problems. We also looked for correlations between pathogen and sequelae. **RESULTS:** Thirty-two cases were reviewed (22 female, 10 male, mean age: 2 years), with meningitis confirmed by positive cultures in 26 cases (81%) and probable in the remaining six. Deficits were identified in thirteen children (40%): ENT problems in four, neurologic in five and developmental in nine. Three children had cognitive impairment, eight had language problems and two had Attention-Deficit Hyperactivity Disorder. The level of impairment was severe in two cases, moderate in four and mild in seven. Neisseria meningitidis was involved in seven children with sequelae, but Streptococcus pneumoniae was implicated in all with severe and in half with moderate impairment. All the children with developmental problems were referred to educational support and speech and language therapy. **CONCLUSIONS:** A significant proportion of bacterial meningitis results in some type of sequelae and although meningococcus is the most frequent, pneumococcus is responsible for the worst cases. This protocol improved the inter-disciplinary approach to children with bacterial meningitis, maximizing the identification of sequelae and their further referral.

Topic: Central nervous system infections

Paper number: 1303

Presentation type requested: Poster Presentation

A CASE WITH RELAPSED LISTERIA MONOCYTOGENES MENINGITIS

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BACKGROUND AND AIMS: Listeria monocytogenes, an uncommon foodborne pathogen, can cause life threatening central nervous system infection. We report a 18 months-old boy with meningitis due to Listeria monocytogenes. Despite apparent initial therapeutic success the child died from relapse of listerial infection after three months.

METHODS: A previously healthy 18 months-old boy referred to our clinic with complaint of fever. He had 39 C fever, bulging fontanel and oropharyngeal hyperemia. The examination of the others systems were normal

RESULTS: The child had leucocytosis, thrombocytosis, CRP seropositivity. CSF revealed purulent meningitis. Listeria monocytogenes was isolated from blood and CSF. The child recovered completely with ampicillin and gentamicin treatment for 4 weeks. His control CT imaging and neurologic examination was normal. After three months the child came with right hemiparesis. In cranial MR imaging brain edema, abscess formation on both temporal lobes were observed. On the third day of hospitalisation, the child needed ventilatory support. Listeria monocytogenes was isolated from blood. the clinical condition was attributed as relaps/reinfection of Listeria infection. Immunologic tests were normal. Despite intensive treatment the child died on the seventh day of hospitalisation.

CONCLUSIONS: Listeria monocytogenes can be the cause of meningitis in healthy children and relapse/reinfection can be observed despite apparent therapeutic success

Topic: Central nervous system infections

Paper number: 1314

Presentation type requested: Poster Presentation

PREDICTION OF LYME MENINGITIS BASED ON A LOGISTIC REGRESSION MODEL USING CLINICAL AND LABORATORY DATA

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BACKGROUND AND AIMS: A prediction model based on clinical and cerebrospinal fluid (CSF) analysis has been proposed in the USA for differentiation of Lyme meningitis (LM) from non Lyme aseptic meningitis (AM).
METHODS: The medical charts of all children over 2 years of age admitted in our hospital from January 1996 to December 2006 with a final diagnosis of LM were retrospectively compared with those with a diagnosis of AM not related to Lyme borreliosis. Retrospective chart review included duration of symptoms, the presence of cranial neuropathy and CSF analysis. Using a logistic regression analysis, a prediction model was derived from 4 variables (duration of symptoms, cranial neuropathy, CSF percent mononuclear cells and protein level).
RESULTS: Results A total of 96 patients were included (LM: 29 patients; non Lyme AM: 67 patients). Patients with LM, when compared with AM, statistically had more frequent cranial neuropathy (69% vs 4.4%), displayed a longer duration of symptoms before admission (8.5 vs 1.8 day), had a higher CSF protein level (71 vs 38 mg/d) and a higher CSF percent mononuclear cells (97% vs 49%). The prediction model including these four variables had a 100% sensitivity and 97% specificity for a probability cutoff ≥ 0.5 .
CONCLUSIONS: Our prediction model had a high negative predictive value and may help the physician to better manage AM while awaiting serological test, especially in Lyme endemic region .

Topic: Central nervous system infections

Paper number: 1336

Presentation type requested: Poster Presentation

BACTERIAL MENINGITIS IN CHILDREN IN ESTONIA IN 1980-1989 AND 1998-2007

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BACKGROUND AND AIMS: Despite improved intensive therapy and use of dexamethasone

(DXM), bacterial meningitis (BM) is still associated with serious disability. Routine vaccination against Hib was initiated in Estonia in September 2005. We aimed to describe epidemiology and outcome of childhood BM in 1998-2007 (Period B) and compare it with respective data from 1980-1989 (period A).

METHODS: All hospital records of patients (age 2 mo to 18 years) admitted in 1998 to 2007 with BM into major Children's hospitals were retrospectively reviewed. Historical data on BM in South Estonia from 1980 to 1989 were used for the comparison.

RESULTS: A total of 198 cases were identified in 1998-2007 and 199 in 1980-89. The prevalence of BM in latter time period was lower than in former (9 vs 26/100 000 children < 14 year old, respectively). In period A 38% of cases were caused by *N.meningitidis* and in period B, *H.influenzae* predominated and was seen in 52% of cases. The total mortality rate of BM decreased from 9% in period A to 3% in period B; however, the total disability rate (except hearing disturbances) remained almost the same being about 14% in both periods. The rate of hearing disturbances in period A, during which about 30% of patients received DXM, was 8.3% compared to 20% in period B, during which all patients had been treated with DXM. **CONCLUSIONS:** BM is still a serious disease; despite decreased prevalence and mortality rates the frequency of disabilities including hearing disturbances has remained almost unchanged.

Topic: Central nervous system infections

Paper number: 1374

Presentation type requested: Poster Presentation

TICK-BORNE ENCEPHALITIS IN A COMPLETELY VACCINATED CHILD

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BACKGROUND AND AIMS: Tick-borne encephalitis (TBE) virus is the most common cause of pediatric meningoencephalitis in Slovenia. Vaccine efficacy after complete vaccination is very high and TBE cases in completely vaccinated patients are rarely reported, especially in children. **METHODS:** An 11-year-old previously healthy boy developed signs and symptoms of meningoencephalitis 3 weeks after a tick bite. The patient completed primary immunisation against TBE virus with FSME-IMMUN (Baxter BioScience) in conventional 3 dose schedule (0, 1.5, 11 months). The interval between the last dose of TBE vaccine and the onset of meningoencephalitis was 37 months. **RESULTS:** The clinical course of meningoencephalitis was moderately severe with fever up to 40°C, drowsiness, severe headache, photophobia, nausea and tremor. Cerebrospinal fluid analysis revealed sterile neutrophilic pleocytosis 77 cells/ μ L (64 neutrophils, 13 lymphocytes). TBE was confirmed by high titers of specific serum IgM and IgG antibodies, although the production of IgM antibodies was rather delayed (IgM negative, IgG positive on day 3, IgM and IgG positive on day 24). HSV and enteroviral infections were excluded. The outcome was favourable with the patient reporting occasional headaches and slight tremor in left hand being present at follow up visits up to 12 months post TBE. **CONCLUSIONS:** TBE should be suspected in fully vaccinated children when they present with symptoms compatible with TBE. Patients with TBE after vaccination can be easily overlooked because specific IgG are present early and specific IgM antibodies tend to develop late in the disease. Timely booster vaccination 3 years after primary immunisation is recommended.

Topic: Central nervous system infections

Paper number: 1402

Presentation type requested: Poster Presentation

**INCIDENCE AND CLINICAL OUTCOME OF NEONATAL MENINGITIS: A SINGLE-CENTER CASE-CONTROL
RETROSPECTIVE ANALYSIS**

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BACKGROUND AND AIMS: Neonatal meningitis demonstrates a decreasing frequency during these last years. This is valid also for mortality although neurodevelopmental disorders remain stable. **METHODS:** Retrospective analysis of frequency, causes and clinical outcome of neonatal meningitis cases in a well-determined single-center cohort of neonates. **RESULTS:** 1934 neonates that were hospitalized in our department from January 2004 until December 2007, were extensively reviewed. 606/1934 (31.3%) neonates needed a lumbar puncture mainly for ruling out central nervous system infection. Meningitis was clinically detected in 39/1934 (2%). In 10/39 (25.6%) cerebrospinal fluid (CSF) cultivation turned out positive for various species (Staphylococcus: 3 aureus; 1 haemolyticus; 1 hominis, 1 Streptococcus group B, 1 Enterobacteroides, 1 Pseudomonas aeruginosa, 1 Serratia liquefaciens and 1 Candida albicans). In the blood samples of 12/39 (30.8%) neonates infectious agents were cultured, mainly Gram (+) cocci. All neonates underwent a brain ultrasound which in 7 of them (17.9%) demonstrated abnormal findings. All subjects survived except from 1 (28 weeks gestation, CSF and blood cultures positive for Pseudomonas aeruginosa). Severe motormental retardation developed in 3/39 (7.7%) infected neonates during follow-up. **CONCLUSIONS:** Mortality due to neonatal meningitis in our cohort of hospitalized neonates was low (1/39, 2.5%) following the low overall incidence of this infectious disease (2%). We continue to follow-up the few cases with severe motormental retardation for future learning or other disorders.

Topic: Central nervous system infections

Paper number: 1488

Presentation type requested: Poster Presentation

NEONATAL CHRYSEOBACTERIUM MENINGOSEPTICUM MENINGITIS: REPORT OF SIX CASES

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BACKGROUND AND AIMS: Chryseobacterium meningosepticum, formerly known as Flavobacterium meningosepticum and recently named as Elizabethkingia meningosepticum (or meningoseptica) by some authors is a Gram negative bacillus that can occasionally cause neonatal meningitis and a wide variety of infections among immunocompromised patients. It belongs to the family of Flavobacteriaceae which can inhabit the natural and hospital environments. It is one of the known etiologic agents of nosocomial outbreaks on neonatal wards, however the clinical characteristics, treatment and outcome of cases with meningitis are not fully understood. C. meningosepticum has been reported to be resistant to antimicrobial agents commonly used for Gram-negative infections, and antibiotics commonly used for Gram-positive infections are being recommended in the treatment. Vankomycin had been the drug of choice in most of the institutions especially for meningitis cases. **METHODS:** Six cases of neonatal meningitis caused by C. meningosepticum have been observed on Neonatal Intensive Care Unit of a tertiary university pediatric hospital between July, 2006 and July, 2007. Cases were evaluated for their clinical characteristics, treatment and outcome. **RESULTS:** Four patients had prematurity, one intrauterine growth retardation as an underlying disease. All patients were given multidrug regimen including vankomycin. Fatality rate was 2/6 (33,3%). Death cases were the babies with the least birth weights and one of case who discharged without sequelae was the baby with the highest birth weight. **CONCLUSIONS:** Early, multiagent and aggressive antibiotic treatment should be given in cases with suspected meningitis due to C. meningosepticum.

Topic: Congenital infections

Paper number: 1114

Presentation type requested: Oral Presentation

MATERNAL TRYPANOSOMA CRUZI INFECTION, DOES CONGENITAL CHAGAS INFECTION EXIST IN EUROPE?

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BACKGROUND AND AIMS: In Spain there has been a recent increase of Bolivian immigrants. In Bolivia there is a high rate of chronic Chagas disease. Because of the possibility of vertical transmission and that the cure rate of Chagas disease in newborns almost reaches 100% our aim is to describe the prevalence of Chagas infection in pregnant Bolivian women and to detect and treat vertical transmission cases.
METHODS: In the last 6 months serology for Chagas disease has been ordered to any Bolivian pregnant woman in our hospital. Immunochromatographic test is the first step and if result is positive is confirmed with an ELISA and IIF. Any newborn of an infected mother is studied and followed to rule out congenital infection.
RESULTS: Between July 1st and December 31st of 2007 in 96 Bolivian pregnant women a Chagas serology was made and 12 resulted positive (12,5% of prevalence). Nine children were studied and none has been infected until now.
CONCLUSIONS: Prevalence of Chagas disease in Bolivian pregnant immigrants in Spain is elevated; therefore there is a high risk of congenital infection. It would be wise to include Chagas disease in the study of any pregnant immigrant woman from Bolivia.

Topic: Congenital infections

Paper number: 1134

Presentation type requested: Poster Presentation

EVIDENCE OF SUB-THERAPEUTIC CONCENTRATIONS IN A PAEDIATRIC POPULATION RECEIVING GANCICLOVIR.

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BACKGROUND AND AIMS: Ganciclovir treatment may be commenced in infants with congenital or postnatally acquired cytomegalovirus (CMV) infection, or in immunosuppressed patients becoming viraemic.

The dose of IV Ganciclovir recommended in the UK children's national formulary is 5mg/kg although higher doses have been suggested for treatment of congenital CMV. Doses of oral valganciclovir used vary even more widely. Reference ranges for adults have been proposed but how these relate to treatment and viral suppression in infants is unknown.

METHODS: Ganciclovir levels sent to a national reference laboratory in the UK over the past 7 years were reviewed. **RESULTS:** 95 samples were received from 32 infants aged <6 months (25.6% of all samples received). Pre-dose levels were <1.0 in 69% of samples sent. Mean post-dose level was 5.48mg/L with only 9.4% of samples falling within the laboratory reference range (7-9mg/L). This compares to a mean of 6.3mg/L in patients aged over 18 years of whom 15.8% had levels within the reference range. **CONCLUSIONS:** Suboptimal post-dose levels (compared to adult ref.) were found in 79.7% of babies. As data on dose and formulation was unavailable, it is not known how this relates to dose of drug given or clinical outcome.

We have developed a national congenital CMV treatment Registry as part of a larger European initiative, with the aid of ESPID funding, which will provide data to correlate drug levels with drug dosage and levels of viral suppression in this age group. This should provide improved data on which to base treatment decisions.

Topic: Congenital infections

Paper number: 1215

Presentation type requested: Poster Presentation

CYTOMEGALOVIRUS HEPATITIS IN CONGENITALLY INFECTED CHILDREN: SEVERE OUTCOME AND LIVER TRANSPLANTATION

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BACKGROUND AND AIMS: Cytomegalovirus (CMV) hepatitis in congenitally infected children resolves spontaneously in almost all cases. Liver cirrhosis has been rarely associated with congenital infection and there is no solid evidence that chronic active hepatitis can result from CMV infection. We describe the hepatic involvement and outcome in seven congenitally infected children.

METHODS: Beginning in 1994, all children who were identified at birth as having symptomatic congenital CMV infection were regularly followed up. Review of medical records included clinical signs, laboratory evaluation, microbiological data, radiographic findings, audiologic and developmental assessments and treatment.

RESULTS: Seven out of 14 symptomatic children showed at birth hepatitis. Two of the seven children presented progressive liver disease which resulted in portal hypertension at 30 months and 32 months of age respectively: portal hypertension was secondary to cirrhosis in one patient and to noncirrhotic portal fibrosis in the other. The patient with cirrhosis developed liver failure and she was transplanted at five years of age. Interestingly both children showed recurrent cutaneous vasculitis in the first two years of life.

CONCLUSIONS: Pediatricians should be aware of late manifestation of CMV congenital infection such as chronic hepatitis which may result in end-stage liver disease. Recent findings underlined the role of endothelial cells as targets of CMV and clarified the differences in viral replication and cytolytic potential, depending on the stage of infection and involved vascular district. The vasculitis recurrence in our patients might suggest that persisting liver injury be due to an immunopathological process triggered by ongoing endothelial damage.

Topic: Congenital infections

Paper number: 1266

Presentation type requested: Poster Presentation

CRP LEVELS AS A MARKER OF POTENTIAL CONGENITAL INFECTION

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BACKGROUND AND AIMS: CRP is protein which indicates infection, and it increases every time when there is a present infection. Most common congenital infection is TORCH (toxoplasmosis, rubella, cytomegalovirus, herpes simplex. TORCH infection in pregnant woman can cause miscarriage, preterm delivery or congenital infection of child. Presence of TORCH increases CRP levels in maternal serum, umbilical cord, amniotic fluid and maternal vaginal fluid (which can be detected from blood samples, by chordocentesis, amniocentesis). Aim of the study is to investigate presence and connection between C-reactive protein (CRP) level in maternal serum and TORCH congenital infection.

METHODS: Median CRP levels in maternal serum of pregnant women in normal pregnancy without TORCH infection ranged from 0.7 to 1.5 mg/l. Median CRP levels in maternal serum of pregnant women with TORCH infection ranged between 8 and 25 mg/l. This pointed to increased number of positive CRP findings among women with TORCH infection with or without symptoms of infection and necessity of further diagnostics among this woman.

RESULTS: By observation of all cases there was a correlation between CRP level and TORCH. Analyzing the frequency and causes shown results of increased number of infections in our region comparing to last year report.

CONCLUSIONS: Levels of CRP protein in maternal serum can indicate possible congenital infection of child whose mothers had TORCH infection in pregnancy. Considering the fact that by observation of all cases a statistical increase of these infections was found we have to indicate the necessity of prevention for the purpose of control all potential causes of TORCH.

Topic: Congenital infections

Paper number: 1283

Presentation type requested: Poster Presentation

NEONATAL THROMBOCYTOPENIA AND INTERFERON ADMINISTRATION IN MOTHER WITH HEPATITIS C.CASE REPORT

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<pre>BACKGROUND AND AIMS:</pre>We report two babies born from a woman on interferon-alpha treatment for chronic hepatitis C and review the literature regarding the fetal and neonatal effects of interferon during pregnancy.**<pre>METHODS:</pre>**Two preterm , IUGR babies, were delivered to this mother. Were tested for hepatitis C and also for platelets values in the abnormal range (50000 e 90000/mmc) in boths without sepsis and other clinical signs.Platelets values were normal after two weeks without treatment.**<pre>RESULTS:</pre>**There are no reports of interferon acting as an abortifacient in humans. However, no formal studies have been performed evaluating large numbers of pregnant patients receiving interferon therapy. The effects on pregnancy of exogenously administered interferon in animals are variable. Teratogenicity has not been convincingly linked to interferon use in animals or humans. The safety of interferon administration during conception and pregnancy is uncertain but there are no controlled studies in women an in newborns.

A theoretical risk exists of interferon's ability to inhibit both cellular proliferation and protein synthesis. In terms of fetal risk, interferonis classified as category C by the Food and Drug Administration.It's difficult a correlation with IFN administration in pregnancy and neonatl thrombocytopenia, perhaps it inhibit megacariocytes proliferation.**<pre>CONCLUSIONS:</pre>**As the number of patients treated with interferon alpha is increasing, all doctors should know its undesirable effects also in neonates.

Topic: Congenital infections

Paper number: 1315

Presentation type requested: Oral Presentation

THE BURDEN OF INFECTION WITH CYTOMEGALOVIRUS IN ENGLAND AND WALES: HOW MANY WOMEN ARE INFECTED IN PREGNANCY?

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BACKGROUND AND AIMS: Cytomegalovirus (CMV) is a common cause of intrauterine infection in humans, raising the risk of infant mortality and causing permanent physical sequelae such as sensorineural hearing loss, visual impairment and mental retardation. Estimates of the burden of infection at the population level, particularly amongst pregnant women, are therefore important for assessing the public health impact of CMV infection. **METHODS:** A total of 5237 sera collected in 1991 and 2002 representing the complete age range and reflecting the general population were screened for CMV-specific IgG by ELISA (Behring Enzygnost). Data were analysed using mixture models with a further model used to estimate incidence by calculating the average proportion of those aged 2-71yrs in 1991 susceptible to CMV who acquired this infection between 1991 and 2002. **RESULTS:** Antibody prevalence increased with age from ~15% in those aged 1-4yrs to ~80% in those aged 65+yrs with no association with gender or region. Between 1991 and 2002 incidence was highest in children born 1985-89 (1.62%/yr 95%CI 0.86-2.35), lower in older children and younger adults born 1950-84 (0.75%/yr 95%CI 0.29-1.19) with little evidence of infection in older adults born pre-1950 (0%/yr 95%CI 0-0.64). Application to population estimates for England and Wales (1991) suggested that over this period 159,996 (95%CI 67,922-278,277) CMV infections occurred annually. Using live birth estimates (2002) an annual average of 2133 (95%CI 816-3435) infections were estimated to be occurring in pregnant females. **CONCLUSIONS:** CMV infection may represent a significant and overlooked public health concern in England and Wales.

Topic: Congenital infections

Paper number: 1452

Presentation type requested: Poster Presentation

CONGENITAL TUBERCULOSIS AND IMMUNODEFICIENCY: TRYING TO FIND THE LINK

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BACKGROUND AND AIMS: Congenital tuberculosis is a rare condition with a high mortality rate. Fetus and neonate immune system immaturity and in utero cytokine environment increase the risk of disseminated disease.
METHODS:
RESULTS: Case report - A term female neonate presented at birth with wasted appearance, jaundice, marked hepatosplenomegaly, scattered erythematous nodules and persistent fever. Laboratory results showed leucopenia, thrombocytopenia, high erythrocyte sedimentation rate and cholestatic hepatitis. There was a pulmonary reticular infiltration and nodular hepatic and spleen structure with calcifications. Blood cultures and serologic studies for TORCH infections were negative and histiocytosis was excluded. Child and mother tuberculosis studies (including mother endometrial biopsy for BK) were negative.

By 2 months, because of suspected *Mycobacterium bovis* dissemination (BCGitis and positive PCR for *Mycobacteria* spp on hepatic biopsy) tuberculostatics were started. Severe combined immunodeficiency was thought, as she had persistent T CD8+ lymphopenia, profound B lymphopenia, and a inguinal adenopathy biopsy with absent cortex, lymphoid nodules and plasmocytes. However, the proliferative response of T cells to mitogens was normal. The clinical situation worsened and the baby died by 4 months. After death, microbiologic data revealed *Mycobacterium bovis* in axillary lymph node (PCR, culture) and *Mycobacterium tuberculosis* in hepatic biopsy (PCR, probes, culture) and liver and spleen necropsy (Zeil-Neelson, PCR).

CONCLUSIONS: This case illustrates the difficulties of diagnosing tuberculosis in a newborn whose mother remained free of any sign of infection. Whether the immune defects evidenced are the result of early infection or the reason for overwhelming infection is an unresolved matter.

Topic: Epidemiology

Paper number: 1027

Presentation type requested: Poster Presentation

SEROPREVALENCE AND RISK FACTORS FOR HEPATITIS A, B AND C AMONG ROMA AND NON ROMA CHILDREN IN A DEPRIVED AREA

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BACKGROUND AND AIMS: Objective: To investigate the prevalence and risk factors of Hepatitis A, B and C markers in non-Roma and Roma children who lived in a deprived suburb of Athens, Greece. **METHODS:** Methods: The study included 216 children, 118 Roma and 98 non-Roma with median age 9 years (range 5-15 years). Each serum sample was tested for anti-HAV IgG, markers of HBV (anti-HBs and anti-HBc IgG) and anti-HCV. Samples negative for anti-HBs and positive for anti-HBc IgG were further examined for HBs Ag, Hbe Ag and anti-HBe. **RESULTS:** Among the Roma children 98.3% had detectable antibodies to hepatitis A, compared with 32.7% non-Roma ($p < 0.0001$). Regarding Hepatitis B, 22% Roma children were identified with evidence of past infection, among whom 5 (4% of the total) were chronic carriers, whereas no past infection was detected among the non-Roma ($p < 0.0001$). Markers of past HBV vaccination were detected in only 14% Roma but 96% non-Roma children (p -value < 0.0001). Unfavorable living conditions, frequent residency change, lack of child insurance and primary healthcare delivery were significantly associated with seroprevalence of Hepatitis B infection among Roma children. No child in either group was found positive for Hepatitis C markers. **CONCLUSIONS:** These findings document high socioeconomic differentials with regards to Hepatitis A and B and underline the need for enhancing health policy action targeting pockets of minority childhood populations. Given the high seroprevalence of hepatitis A among Roma children, the study also calls for implementing general vaccination for hepatitis A early in life.

Topic: Epidemiology

Paper number: 1056

Presentation type requested: Poster Presentation

VARICELLA SENTINEL IN GERMANY SHOWS SUCCESS OF VACCINATION

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BACKGROUND AND AIMS: Since summer 2004, varicella vaccination has been generally recommended for children in Germany aiming mainly for the reduction of varicella related complications. One dose of monovalent or two doses of combined varicella vaccine should be given preferably to 1-year olds.

In April 2005, a country-wide sentinel surveillance system was established for monitoring varicella epidemiology. **METHODS:** More than 1000 primary care physicians, two third pediatricians, are asked by monthly questionnaires about varicella cases by age group, complications of varicella, cases in vaccinated patients and cases of shingles as well as numbers of administered varicella and measles vaccines. Zero-reporting and active reminders are included. **RESULTS:** A total of 62,177 varicella cases were reported from April 2005 to September 2007 with seasonal peaks in spring. 63% of cases were younger than 5 years. In the same time 273 complications of varicella, 1,075 varicella cases in vaccinated persons and 5,279 shingles cases were seen. The reporting physicians administered more than 206,000 varicella vaccine doses.

While the number of vaccine doses has increased over time (32 doses per sentinel physician from April-September 2005 compared to 62 doses from April-September 2007), the number of reported varicella cases per physician has declined (from 17 to 9 per physician in the compared periods). This was observed in all age groups but was deepest in 1- and 2-year olds. The decline included complications. Numbers of vaccinations and cases were regionally correlated. **CONCLUSIONS:** With increasing numbers of vaccinated persons, the numbers of varicella patients and of complications have decreased in Germany.

Topic: Epidemiology

Paper number: 1099

Presentation type requested: Poster Presentation

PEDIATRIC INVASIVE PNEUMOCOCCAL DISEASES IN NORTHERN TAIWAN, 2001-2006

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BACKGROUND AND AIMS: To delineate the epidemiology of invasive pneumococcal diseases (IPD) in Taiwanese children and determine the factors affecting the treatment outcome. **METHODS:** Between 2001 and 2006 in Chang Gung Children's Hospital, all invasive pneumococcal isolates from children were tested for serotypes and antimicrobial susceptibilities. The medical records were review in each case. **RESULTS:** A total of 160 IPD episodes were identified in children at 3 days to 13.5 years of age. Of them, 57 (35.6%) and 81 (50.6%) episodes occurred at the age of 0-23 months and 24-59 months, respectively. The common disease spectrums included occult bacteremia (17.5%), uncomplicated pneumonia (29.4%), complicated pneumonia (29.4%), meningitis (14.4%) and septic shock (6.9%). Serotypes 14, 6B, 23F, 19F, and 3 were the 5 most common types and accounted for 84.4% of all isolates. A total of 128 (80%) isolates expressed serotypes covered by 7-valent conjugate pneumococcal vaccine. The isolates of vaccine-serotypes were more frequently resistant to penicillin ($P<0.0001$), cefuroxime ($P<0.0001$), ceftriaxone ($P=0.0534$) and multi-drugs ($P<0.0001$) than isolates of other serotypes. Univariate analysis disclosed a higher mortality rate among children with underlying conditions (OR25.59, 95%CI1.78-40.89), septic shock (OR163.13, 95%CI26.27-1012.88), meningitis (OR9.55, 95%CI2.86-31.96), leucopenia (OR9.64, 95%CI2.79-33.32), neutropenia (OR12.03, 95%CI3.51-41.15) and requirement of intensive care (OR52.13, 95%CI3.04-894.95). Presence of underlying conditions was the only independent predictor for fatal outcome in the multivariate analysis (OR27.68, 95%CI2.08-368.28). **CONCLUSIONS:** A majority of invasive pneumococcal isolates from Taiwanese children were of vaccine serotypes and exhibited high rates of antibiotic resistances. Presence of underlying conditions was the most important factor predicting the fatal outcome.

Topic: Epidemiology

Paper number: 1117

Presentation type requested: Poster Presentation

RESPIRATORY TRACT INFECTIONS IN HOSPITALIZED CHILDREN IN MINSK CHILDREN INFECTIOUS DISEASES HOSPITAL (CIDH) IN 2006-7

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BACKGROUND AND AIMS: Background and aims: Respiratory tract infections are the main cause of morbidity worldwide. In 2007 the influenza A was fixed 11532.15 cases per 100000 children in Minsk. **METHODS:** Methods: We studied the structure of respiratory virus infections in children treated in CIDH within the period of January 1, 2006 - December 31, 2007, collected and analyzed the nose and throat scrubs on the first day after hospitalizations by immunofluorescent microscopy. **RESULTS:** Results: 37824 children aged from 1 month to 15 years old were admitted at CIDH and 59% (22337) of them were treated with respiratory tract diseases. The viruses were detected in 1408 cases: influenza A 248 (18%), influenza B 184 (13%), parainfluenza 208 (15%), adenovirus 408 (28%) and RS-virus 360 (26%). 93% patients were younger than 5 years. Two peaks of morbidity of children aged about 12 months and from 3 till 5 years (nursery school) occurred. Rhinopharyngitis and tracheitis are the most frequent forms of infections 752 (53%). But wheezing took place in influenza B, adenovirus and RS-virus infections are frequent as well 384 (from 952) (40%). Influenza A happened in mild and moderately severe forms, fatal cases were not fixed. In Belarus, the vaccination against influenza A is carried out every autumn. **CONCLUSIONS:** Conclusions: This study confirms the role of viruses in respiratory tract diseases. Vaccines provide protection against influenza and decrease severe forms frequency.

Topic: Epidemiology

Paper number: 1118

Presentation type requested: Poster Presentation

**EPIDEMIOLOGY OF ROTAVIRUS INFECTION (RVI) IN HOSPITALIZED CHILDREN IN MINSK CHILDREN
INFECTIOUS DISEASES HOSPITAL (CIDH) IN 2007**

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BACKGROUND AND AIMS: RVI morbidity is actual problem in Belarus. In 2007, RVI was fixed 922.1 cases per 100000 children in Minsk
METHODS: We studied the structure of acute gastroenteritis (AGE) in children treated in CIDH from January 1 to December 31, 2007 prospectively. Feces were investigated by routine bacteriological methods, virological immunoassay. We collected materials in the first two days after children hospitalization
RESULTS: 17297 children aged from 1 month to 15 years old were admitted in CIDH in 2007 year and 17.1% (2956) of them were with acute gastroenteritis. The rotaviruses were detected in 1412 (47.8%) cases from 2956. RVI had the winter epidemiological peak (March-April). The peak morbidity was observed in children aged 24 months old. In Belarus, fatal cases were not fixed. With patients who underwent used Vesikari's scale for detection severity level, we found that 3% patients had a score < 7 (mild), 22% children - > 14 (severe). We saw that severity RVI increased and was based on exsiccosis with toxicosis
CONCLUSIONS: This study confirms the role of rotavirus in AGE in children. Vaccination might provide protection against RVI and to decrease severe forms frequency

Topic: Epidemiology

Paper number: 1121

Presentation type requested: Oral Presentation

EMERGENCE OF PANTON-VALENTINE LEUKOCIDIN-POSITIVE COMMUNITY-ACQUIRED METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS IN CHILDREN IN MADRID, SPAIN.

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BACKGROUND AND AIMS: Community-acquired, methicillin-resistant *Staphylococcus aureus* (CA-MRSA) infections in children are increasing in frequency in some parts of the world. Pantone-Valentine leukocidine (PVL) has been advocated as a virulence factor of CA-MRSA.

The aim of this study was to report the frequency of CA-MRSA and the prevalence of PVL among children as well as to determine the clinical, epidemiologic and molecular characteristics of these patients.

METHODS: We conducted a prospective study from January to November 2007. The study included all patients that were seen in the Pediatric Emergency Department (PED) with an *S.aureus* infection. **RESULTS:** *S. aureus* was detected in 58 samples taken from 53 children. The children had a median age of 42 months (0-170 months). An MRSA was detected in 7 patients (13.2%). Forty six patients were tested for PVL genes, and a positive result was obtained in 12 (26%). We found significant differences related to the country of origin of the children: CA-MRSA isolates were more frequent isolated from children with an origin in Ecuador (44% vs. 7%; $P = 0,002$). Infections by isolates with and without PVL gene did not show significant differences but that isolates with PVL gene were clearly associated with need of drainage (75% vs. 27%; $P = 0,001$). **CONCLUSIONS:** There is an emergence of CA-MRSA infections among children in Madrid and is clearly associated with children with an origin in Ecuador. Infections with isolates PVL(+) required a more aggressive treatment with drainage as a result of the isolates' increased virulence.

Topic: Epidemiology

Paper number: 1126

Presentation type requested: Oral Presentation

PRIMARY CARE-BASED SURVEILLANCE TO ESTIMATE THE BURDEN OF ROTAVIRUS GASTROENTERITIS IN CHILDREN AGED <5 YEARS IN EUROPE

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BACKGROUND AND AIMS: Rotavirus (RV) is the leading cause of acute gastroenteritis (AGE) in young children worldwide. Surveillance in Primary Care Centers for Rotavirus Infections in Kids (SPRIK) was undertaken to estimate the burden of RVGE leading to a general practitioner (GP)/pediatrician visit among European children <5 years. **METHODS:** This was a prospective study involving 88 GP/pediatrician practices covering a well-defined population in Czech Republic, Germany, Italy, Poland, Spain and the UK. All children <5 years from the defined population presenting with AGE (diarrhea [\geq 3 loose stools/24 hours] for <14 days) were screened for recruitment. Parents/carers gave informed consent for stool sampling and testing (rapid RV test, RotaStrip™). RV+ samples were typed by RT-PCR [Study ID: RV-104434]. **RESULTS:** From October 2005–May 2007, 5009 children <5 years presenting with AGE were screened, among whom 4093 were tested with RotaStrip™ (591 RV+ [14.4%]). 509/572 children were RV+ by PCR (89.0%), 48.9% of whom were female. The incidence of PCR+ RVGE ranged from 9.4 per 1000 person-years in Poland to 24.3 in Spain. 69.1% of PCR+ cases occurred in children <2 years (30.1% <1 year and 6.9% <6 months). Most cases occurred between December and May. Predominant RV types were G9P[8] (49.1%) and G1P[8] (27.9%), but varied between countries. **CONCLUSIONS:** Results demonstrate that the burden of RVGE is high among European children <5 years visiting primary care centers for AGE. In all, 69.1% of RVGE occurred in children <2 years and 6.9% in infants <6 months, supporting the need for vaccination as early as possible.

Topic: Epidemiology

Paper number: 1129

Presentation type requested: Poster Presentation

SURVEILLANCE TO ESTIMATE THE BURDEN OF ROTAVIRUS GASTROENTERITIS IN CHILDREN AGED <3 YEARS ATTENDING DAY CARE CENTERS IN PARIS, FRANCE

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BACKGROUND AND AIMS: Rotavirus (RV) is the leading cause of acute gastroenteritis (GE) requiring hospitalization or medical attention among young children worldwide. However, most RVGE goes untreated. This study estimated the burden of RVGE among <3 year-olds attending day care centers (DCC) in Paris, France.
METHODS: Between December 2006 and May 2007, 371 <3 year-olds at 15 DCC were actively followed for occurrence of acute GE (diarrhea [≥ 3 loose stools/24 hours] for <14 days) and outbreaks (≥ 3 cases of RVGE in a DCC with onset in a single week). All attendees symptomatic for acute GE provided stool samples for testing (RotaStrip™), as did all participating attendees (despite symptoms) during an outbreak. RV+ samples were typed by RT-PCR [Study ID: RV-104890].
RESULTS: 16/69 symptomatic GE episodes were RV+ (23.2%), with 50% occurring in children <1 year. G1P[8] was the most common RV type (12/16 [75.0%]). The incidence of RVGE was 46.7 per 100,000 person-days (95% CI 26.7, 75.8) overall and 139.2 (60.1, 274.2) among children 5–12 months. Two outbreaks were reported: 6/21 RV+ (28.6%, all G1P[8]) and 7/23 RV+ (30.4%, 6 G1P[8] and 1 G2P[4]). 66.7% of outbreak RV+ episodes occurred in children <1 year.
CONCLUSIONS: Our results indicate considerable burden of disease among DCC attendees in Paris, with 23.2% of acute GE episodes among <3 year-olds and half of all RVGE occurring in <1-year-olds. With 15% of children <3 years attending DCC in France, consideration should be given to prevention strategies, such as vaccination, in reducing this significant burden of disease.

Topic: Epidemiology

Paper number: 1138

Presentation type requested: Poster Presentation

EPIDEMIOLOGY OF THE HOSPITALIZATIONS DUE TO MENINGOCOCCAL MENINGITIS IN PAEDIATRIC POPULATION IN SPAIN (1997-2005).

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BACKGROUND AND AIMS: Estimate the burden of hospitalizations for meningococcal meningitis in children up to 19 years old in Spain during a 9-year period (1997-2005). **METHODS:** Revision of the National Surveillance System for Hospital Data (CMBD), including more than 98% of Spanish hospitals. Codes for meningococcal disease were selected by using the 9th International Classification of Diseases, ICD-9-CM: 036 (036.0-036.9) any listed diagnosis.

All hospitalizations for children up to 19 years old, reported during 1997-2005 period, were analysed.

The annual incidence of hospital admissions, average length of hospitalization, mortality and fatality rate were calculated by using census-derived population estimates. **RESULTS:** A total of 7,163 hospital discharges for meningococcal disease in children up to 19 years old were reported during the study period.

The mean age of cases was 5.5 years. The average hospitalization length was 10 days.

The overall annual incidence was 9.66 cases per 100,000 children (IC 95%: 9.44-9.89) and decreased during the study period from 16.0 to 6.7/100,000 children.

A total of 344 deaths were reported. Annual mortality rate was 0.46/100,000 children (IC 95%: 0.41-0.51) and fatality rate was 4.8% (IC 95%: 4.3-5.3).

Incidence and mortality rate decrease significantly with age, from 24.89 to 4.33/100,000 population in <4 and 15-19 age group, respectively. Maximum mortality rate is found in children up to 1 year old (32.88/100,000 children). Fatality rate peaks in 15-19 adolescents (7.94%).

Annual average cost for National Health Care System was 3,089,444.56 € **CONCLUSIONS:** Burden of meningococcal disease is important in paediatric population in Spain. Immunization in younger children reduces incidence rate.

Topic: Epidemiology

Paper number: 1176

Presentation type requested: Poster Presentation

CHANGING PATTERNS OF PRIMARY CARE: A RETROSPECTIVE COHORT STUDY OF ANTIBIOTIC PRESCRIBING FOR CHILDREN IN THE UK FROM 1995-2005.

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BACKGROUND AND AIMS: We retrospectively analysed trends and patterns of condition specific antibiotic prescribing in primary care for children in the UK

METHODS: We used the IMS Disease Analyzer to obtain the annual incidence of antibiotic prescriptions and the associated indications for patients aged 0 to 18 years between 1st January 1995 and 31st December 2005 in the UK. Antibiotic prescriptions were linked to a clinical diagnosis via the ICD-10 coding system. **RESULTS:** Rates of community antimicrobial prescribing declined by 27% between 1995 and 2000 and levelled off until 2004. A 12% increase was documented in 2005. Narrow spectrum antibiotics, such as Amoxicillin, Penicillin and Erythromycin were the commonest agents prescribed. Flucloxacillin use increased more than twofold during the study period ($p < 0.001$). The leading indication linked to antibiotic prescribing was respiratory infections and rates declined by 33% ($p < 0.001$). Skin and subcutaneous infections increased more than twofold, from 6% of total prescriptions to 16.5% ($p < 0.001$). Analysis of the respiratory indication showed that prescribing for upper respiratory tract infections is significant. Rates decreased by 30% between 1995 and 2000 ($p < 0.001$), followed by a plateau until 2004 and a 27% increase in 2005 ($p < 0.001$). **CONCLUSIONS:** Community paediatric antibiotic prescribing declined between 1995 and 2000 and remained stable until 2004. In 2005 prescribing rates increased significantly. General practitioners use mostly narrow spectrum antibiotics when they treat paediatric infections; however the rate of prescribing for infections of the upper respiratory tract is significant and increasing.

Topic: Epidemiology

Paper number: 1182

Presentation type requested: Poster Presentation

INTUSSUSCEPTION HOSPITALIZATION IN GERMAN CHILDREN – SURVEILLANCE THROUGH THE ESPED NETWORK

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BACKGROUND AND AIMS: A baseline incidence of intussusception (IS) prior to the introduction of new rotavirus vaccines is necessary for further assessment of these vaccines. For optimization of disease management data concerning etiology, risk factors and treatment options is important. **METHODS:** Hospital-based surveillance for IS was initiated through the ESPED-network from January 06. From 370 paediatric units, patient demographics, disease, and treatment characteristics of IS cases were collected monthly. For IS adjudication the Brighton clinical case definition was used. **RESULTS:** 1433 cases were reported up to Nov/07. Complete data is available for 1120 (78%). The incidence of IS is estimated to be 32.1/100,000 person-years for children <1 year and 28/100,000 person-years for children <2 years. The median age was 29 months with 53.7% of patients <2 years. 46% of patients presented with signs of acute gastrointestinal infection on average beginning 2 days before IS onset. Only 21.7% of patients 4 to 7 months old were fed with breast milk compared to 48% in the general population. The most successful conservative management in terms of preventing 2° surgery was reposition by air under X-ray control (success rate: 93.6%) compared with ultrasound based methods (80.1%). 23% of patients underwent primary (5.1%) or secondary (17.9%) surgery. **CONCLUSIONS:** The incidence of IS found in this German investigation is within the range of estimates from other European countries. There was a high proportion of gastrointestinal infections reported among IS cases and feeding with breast milk may have a protective effect. The most effective conservative treatment was air under X-ray control.

Topic: Epidemiology

Paper number: 1194

Presentation type requested: Poster Presentation

TRENDS OF HOSPITALIZATION ATTRIBUTABLE TO ADVERSE EVENT FOLLOWING IMMUNIZATION (AEFI) IN SPAIN: 2001-2005.

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BACKGROUND AND AIMS: Although most vaccines can induce some type of adverse reaction, the truth is that such reactions are seldom viewed as serious. The objective of this study is to describe the hospitalization attributable to adverse event following immunization (AEFI), in the Spanish population during the period 2001-2005. **METHODS:** Descriptive, cross-sectional, retrospective pharmacoepidemiological study covering the Spanish population, using individualized secondary data furnished from 2001 to 2005, from the national surveillance system for hospital data Conjunto Mínimo Básico de Datos (CMBD). The dependent variables: that entered individual who presents a principal or secondary diagnosis codified with the codes E948 to E949 according to International Classification of Diseases, 9th revision, Clinical Modification code. **RESULTS:** During the study period, a total of 224 hospital admissions (0.6 per 10,000 population) were attributable to adverse event following immunization as any diagnosis. The 58.8% of the hospitalization due to AEFI was in persons aged >14 years and the 66,0% was men. The mean of hospitalization was 8.02 ED: 11.8. The most frequent vaccine related with hospitalization due to AEFI, were: BCG vaccine (E948.0 code), Pertussis vaccine (E948.6 code) followed by tetanus vaccine (E948.4 code).

CONCLUSIONS: The incidence of hospitalization attributable to adverse event following immunization in Spain during the period of study is low. AEFIs active search systems setting are a good tool for detecting and quantifying those reactions which, owing to their mild nature, tend not to be reported by passive surveillance systems.

Topic: Epidemiology

Paper number: 1225

Presentation type requested: Poster Presentation

VARICELLA SEROPROFILE OF THE ITALIAN POPULATION: AN 8-YEAR COMPARISON

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BACKGROUND AND AIMS: The objective of the study was to describe the epidemiology of varicella and zoster in Italy and to determine whether there have been changes with respect to observations provided by an analogous study conducted 8 years ago, in order to define the most appropriate vaccination strategy. **METHODS:** A number of data sources were evaluated, a cross-sectional population-based seroprevalence study was conducted on samples collected in 2004, and the results were compared with data obtained in 1996 with the same methods. **RESULTS:** The data from active and passive surveillance systems confirm that varicella is a widespread infectious disease which mainly affects children. VZV seroprevalence did not substantially differ from that found in the previous study. The sero-epidemiological profile in Italy is different from that in other European countries. In particular, the percentage of susceptible adolescents is at least nearly twice as high as in other European countries and in the age group 20-39yrs, approximately 9% of individuals are susceptible to VZV. **CONCLUSIONS:** The results of this study can contribute to evaluating the options for varicella vaccination. It is possible that in a few years, in all Italian Regions, there will exist the conditions necessary for implementing a mass vaccination campaign and that the large-scale availability of MMRV tetravalent vaccines will facilitate mass vaccination.

Topic: Epidemiology

Paper number: 1228

Presentation type requested: Poster Presentation

EPIDEMIOLOGY OF MEASLES, MUMPS AND RUBELLA IN ITALY

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BACKGROUND AND AIMS: The objective of this study was to evaluate how increasing MMR infant vaccination coverage in recent years has modified the epidemiology of measles, mumps and rubella in the Italian population. **METHODS:** A number of data sources were evaluated, a cross-sectional population-based seroprevalence study was conducted on samples collected in 2004, and the results were compared with data obtained in 1996 with the same methods. **RESULTS:** Vaccination coverage (VC) has increased as a result of the use of the MMR vaccine; the national mean VC in children 15-23 months of age was estimated to be 56% in 1998 and 77% in 2002.

Comparison between seroprevalence data obtained in 1996 and in 2004 showed that, regarding measles, mumps, and rubella, recent efforts aimed at improving vaccination coverage in children have had an impact on seroprevalence only in younger age-groups.

CONCLUSIONS: The results of this study confirm that the strategies provided in the National Plan for measles and congenital rubella elimination have led to good results in children and must be pursued until at least 95% vaccination coverage is achieved and maintained. Besides, vaccination strategies and programmes should be further strengthened if the targets against mumps are to be attained.

Topic: Epidemiology

Paper number: 1268

Presentation type requested: Oral Presentation

M PROTEIN GENE (EMM TYPE) AND DRUG RESISTANCE ANALYSIS OF STREPTOCOCCUS PYOGENES ISOLATED FROM CHINESE PEDIATRICS

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BACKGROUND AND AIMS: To investigate the molecular epidemiologic of emm types and drug resistance of the GAS isolates from Chinese pediatrics. **METHODS:** 222 GAS isolates obtained from five Children's Hospital of China during 2005-2006 were studied by using emm gene sequence analysis; The Minimal Inhibitory Concentration (MIC) of 11 antibiotics were evaluated by the agar dilution methods ; A double-disc agar diffusion test was used to determine the macrolide resistance phenotype; R-gene of the erythromycin(ermB、ermTR and mefA) and the streptococcal pyrogenic exotoxin genes(speA ,speC ,ssa) were detected by PCR. **RESULTS:** Among the 222 isolates, nine emm types were determined, of which emm12(55.86%) and emm1(39.64%) were the most common, followed by emm22.0 (1.8%). Twelve subclass in emm12 group were identified and emm12.0 accounted for 89.2%. The resistance rates of macrolides and Clindamycin range from 93.69% to 98.65% for those isolates, with MIC₉₀ >512ug/ml ; The resistance rates of tetracycline was 94.14%; All of strain were susceptible to penicillin and ceftazidime. The most common macrolide resistance phenotype was the cMIS type (99.04%), iMLS type was only 2 isolates, and no M type was detected. 94.71% of isolates carried ermB gene, 2.89% ermTR and none of them having mefA; The bacteriophage-encoded speA and speC were present in 40.01% and 99.33% of isolates, respectively, the ssa gene was detected in isolates(95.33%). **CONCLUSIONS:** The prevalent types were emm12 and emm1 in Chinese pediatrics; The resistance rates of macrolides were high, and ribosomal modification by ermB gene coded was the main resistant mechanism, Penicillin and cephalosporins should be the first choice to treat GAS infections in China.

Topic: Epidemiology

Paper number: 1330

Presentation type requested: Poster Presentation

RETROSPECTIVE EPIDEMIOLOGY OF CASE FATALITY OF MENINGOCOCCAL DISEASE IN AUSTRIA FROM 1995-2006

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BACKGROUND AND AIMS: The incidence and mortality of endemic meningococcal disease in Austria has not changed over many years. The incidence lays around 1.0/100000 and the mortality by 0.07. Although in the last decade there has been an increase in knowledge of many aspects of meningococcal disease and new fast diagnostic methods have been developed, it has not been possible to decrease the mortality and case-fatality-rate of invasive meningococcal disease. We want to take a closer look at the death statistic in Austria with special emphasis on the case-fatality-rate.

METHODS: The case-fatality-rate for the years 1995 – 2006 were evaluated retrospectively according to serogroup, age group and clinical diagnosis.

RESULTS: The case-fatality-rate for meningitis is 2.7%, septicaemia 15.2% and meningitis with septicaemia 7.6%. For the serogroups the highest rate is found by serogroup Y (17.6%) followed by W135 (11.7%). Serogroup C lies at 6.99% and B at 6.77%. In the age groups the highest case-fatality-rate is found overall and for all serogroups separately in the age group >45. For children <1 year of age the case-fatality-rate was low (3.8%) and identical for the serogroups B and C. Serogroup B has the highest rate by the 1-4 year olds. The case-fatality-rate for serogroup C increases with the age groups 10-14 (6.5%) and 15-19 (9.7%).

CONCLUSIONS: The results show that the greatest risk of fatal outcome for meningococcal disease in Austria is by elderly with the rare serogroups Y and W135.

Topic: Epidemiology

Paper number: 1338

Presentation type requested: Poster Presentation

INVASIVE PNEUMOCOCCAL DISEASE IN CHILDREN UNDER 2 YEARS IN THE AUTONOMOUS REGION OF MADRID (SPAIN), 1998-2006

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BACKGROUND AND AIMS: The availability of a conjugate pneumococcal vaccine in the Autonomous Region of Madrid (Spain) since 2001, recommended in children under 2 years of age, makes it necessary to improve the knowledge of invasive pneumococcal disease. **METHODS:** A retrospective study of computerized hospital discharge data for the period 1998-2006 was conducted. The following discharge diagnosis codes from the International Classification of Disease, Ninth Revision (ICD-9R) were selected: 481 (pneumococcal pneumonia), 320.1 (pneumococcal meningitis), 038.2 (pneumococcal septicaemia). Annual incidence rates per 100,000 persons and case-fatality rates were calculated. Temporal trends were determined by Chi square test. Incidence in 2004-2006 was compared with that in 1998-2000 (previous of vaccine availability). **RESULTS:** The annual incidence rate was 73.04/100,000. The incidence was 60.89/100,000 for pneumonia, 8.01/100,000 for meningitis and 4.14/100,000 for septicaemia. The case-fatality rate was 1.5% for the global invasive pneumococcal disease, 9.4% for meningitis, 4.9% for septicaemia and 0.2% for pneumonia. A decrease of incidence was observed for the global invasive pneumococcal disease ($p<0.01$) and for pneumonia ($p<0.01$). In 2004-2006 the incidence of invasive pneumococcal disease was 29% lower than that in 1998-2000, pneumonia was 34% lower, and septicaemia 46% lower. However meningitis incidence increased 78% in this period. **CONCLUSIONS:** The incidence is higher than in other studies, since our data include suspected cases. However meningitis incidence is similar to that reported by other authors. The global incidence decrease could be due to the increasing use of pneumococcal conjugate vaccine. Otherwise the diagnosis confirmation improvement could explain the meningitis increase.

Topic: Epidemiology

Paper number: 1343

Presentation type requested: Poster Presentation

THE INCREASED INCIDENCE OF TICK-BORNE ENCEPHALITIS IN THE CZECH REPUBLIC

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BACKGROUND AND AIMS: In recent years, the incidence of tick-borne encephalitis (TBE) has significantly risen in the Czech Republic. The reasons are, above all, common climatic changes which influence activity of the vector – ticks. Whereas in 1997 “only“ 415 cases were reported, in 2006 there were 1029 cases. The Czech Republic thus belongs among the most affected countries.**METHODS:** Descriptive data analysis. **RESULTS:** In 2006, the highest number of cases per year was registered. TBE seasonality shifted to autumn with maximal number of cases. The most probable reasons for the increased incidence were rainfalls in August, warm autumn weather, and higher recreational activity of people in nature – walking tours, sport activities, or mushrooming (Czech specialty). The total incidence in 2006 was 10 cases per 100,000 people. In children’s population, the age groups 5-9 and 15-19 years reached the highest values (8.8 per 100,000). In adult population, a gradual increase was registered from 20 to 64 years of age, with maximum in the group 55-64 years (14.7 per 100,000). Men were affected more often than women (1.5:1).**CONCLUSIONS:** The best possible protection is vaccination. But the vaccination rate in the Czech Republic is only 11 %. The above mentioned growth of incidence should be a reason for the vaccination rate increasing.

Topic: Epidemiology

Paper number: 1345

Presentation type requested: Poster Presentation

INVASIVE PNEUMOCOCCAL DISEASE IN CHILDREN UNDER 15 YEARS IN THE AUTONOMOUS REGION OF MADRID (SPAIN), 2007

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BACKGROUND AND AIMS: The 7-valent pneumococcal conjugate vaccine (PCV7) was introduced into infant vaccination programme of the Autonomous Region of Madrid (Spain) in November 2006 for children under 2 yo. The aim of this study is to describe the epidemiological characteristics of invasive pneumococcal disease (IPD) in children under 15 yo. in 2007.

METHODS: Since 2007 IPD is a mandatory notifiable disease in the Autonomous Region of Madrid, and standard case definitions are provided. Clinical and epidemiological data are collected through a structured questionnaire for every case. Annual incidence and case-fatality rates were calculated.

RESULTS: Of the 114 cases 41,2% were children under 2 yo., and 51,8% were males. The IPD incidence rates in 2007 in children under 2, 5 and 15 yo. were 33,2, 27,4 and 12,8/100.000 inhabitants, respectively. Pneumonia (65,4%), meningitis (10,6%), bacteraemia (10,6%) and septicaemia (6,7%) were the most frequent diagnoses. The antecedent of PCV7 was present in 75,6% of the cases under 2 yo. Serotypes 1, 5, 19A and 7F accounted for more than 2/3 of the cases. Vaccine serotypes caused 11,1% of IPD in children under 2 years. No vaccine failure was detected. Only 1 death was registered (case-fatality rate: 0,9%). Sequelae were reported in 5,3% of the patients.

CONCLUSIONS: The incidence and case-fatality rates reported here are similar to that in other developed countries after licensure of the PCV7. Underreporting could occur, given the IPD surveillance has just started in our region. The low proportion of cases caused by vaccine serotypes is compatible with the implementation of the PCV programme.

Topic: Epidemiology

Paper number: 1346

Presentation type requested: Poster Presentation

BORDETELLA PERTUSSIS INFECTION IN A PEDIATRIC HOSPITAL IN SAO PAULO, BRAZIL: STUDY OF CASES.

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BACKGROUND AND AIMS: Despite widespread vaccination, with high coverage rates of infants and children, Bordetella pertussis infection continues occurring and increasing among infants too young to be immunized. Household contacts were common sources of infection at this high-risk group. The aim of this study is to describe the burden of pertussis infection at Darcy Vargas Hospital, in Sao Paulo, Brazil. **METHODS:** We conducted a retrospective study by the medical records and epidemiologic surveillance notification between January 2005 and December 2007. **RESULTS:** We notified twenty-nine suspected cases of pertussis infection, with confirmation by culture in eleven cases. The mean average age of infection was 1.7 months and 54.5% of the cases were female. The main clinical manifestations includes: cough with paroxysms (90.9%), cyanosis (90.9%), apnea (54.5%) and whoop (36.3%). The median duration of cough before diagnosis was twelve days, and the median time using antibiotics before nasopharyngeal samples collection was two days. In all cases the infants were too young to be completely immunized against pertussis infection, and in two cases (18.1%) we confirm a household contact as a source of infection. We have no cases of death and no admissions at PICU. **CONCLUSIONS:** In conclusion, this study confirms that infants too young to be immunized are the group at risk to develop the disease, and strategies to vaccination for adults and adolescents should be considerate to reduce these cases.

Topic: Epidemiology

Paper number: 1361

Presentation type requested: Poster Presentation

A SECOND EPIDEMIC PEAK OF MUMPS AFTER THE ADMINISTRATION OF MMR VACCINE CONTAINING RUBINI STRAIN IN THE PAST

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BACKGROUND AND AIMS: After the administration of MMR vaccine containing the less effective Rubini strain against mumps during 1996-1999 we detected an epidemic peak in 2000-2002. A new epidemic peak has been detected in 2006-2007. We describe the incidence and epidemiological features of mumps in this period.

METHODS: Mumps is a mandatory notifiable disease in our Region. Standard case definitions are provided and clinical and epidemiological individual data are collected through a structured questionnaire. Incidence per 100.000 inhabitants is estimated.

RESULTS: Mean annual incidence in 2006-2007 was 22.58. 46.6% of cases were probable or confirmed. 84.7% of cases were under 30 years of age, of which 89.7% were vaccinated and 73.1% of them had received two doses. 10 to 14 year-old group showed the highest incidence in 2007 (154,78) and 5 to 9 and 20 to 24 year-old groups in 2006 (58.28 and 43.14 respectively). 45 mumps outbreaks in nonhousehold settings were notified, of which 29 affected school centers and resulted in 533 cases. In 2000-2002 the mean annual incidence was 15.81. The highest incidence was observed in children aged 0 to 5 (131.39) and 5 to 9 (84.32).

CONCLUSIONS: This second epidemic peak has mainly affected to nonvaccinated young people and vaccinated population who predominantly had received one dose of MMR vaccine or two doses, one of them including the Rubini strain. An additional dose of MMR vaccine containing a highly immunogenic strain against mumps has been recommended for these population groups

Topic: Epidemiology

Paper number: 1362

Presentation type requested: Oral Presentation

INTERACTIONS BETWEEN RESPIRATORY PATHOGENS DURING COLONIZATION IN THE FIRST MONTHS OF LIFE. THE GENERATION R STUDY.

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BACKGROUND AND AIMS: The nasopharyngeal cavity forms a dynamic ecosystem that is variably colonized by different pathogenic and commensal bacteria. Competitive and cooperative microbe-microbe as well as microbe-host-microbe interactions may play an important role in the microbial colonization dynamics of the nasopharynx. **METHODS:** We investigated in a population-based prospective cohort study of 1079 infants the microbial associations between *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Haemophilus influenzae* and *Moraxella catarrhalis* during colonization in the first 14 months of life. **RESULTS:** Regression models showed a negative association between carriage of *S. pneumoniae* and *S. aureus* at 1.5 months (adjusted odds ratio [aOR] 0.40, 95% CI 0.18-0.89) and 14 months (aOR 0.65, 0.39-1.08) of age. The negative association was primarily observed between non-vaccine type (NVT) pneumococci and *S. aureus*. We observed a positive association between carriage of *S. pneumoniae* and *H. influenzae* at 1.5 months (aOR 3.33, 1.17-9.47), 6 months (aOR 1.39, 0.85-2.29) and 14 months (aOR 1.77, 1.13-2.77) of age. This association was present for both vaccine type (VT) and NVT pneumococci. Finally, no association was observed between *S. pneumoniae* and *M. catarrhalis* carriage. **CONCLUSIONS:** In summary, our data show a negative association between pneumococcal carriage and carriage of *S. aureus*, in particular between NVT pneumococci and *S. aureus*, and a positive association between pneumococcal carriage and carriage of *H. influenzae* in early infancy.

Topic: Epidemiology

Paper number: 1370

Presentation type requested: Poster Presentation

ROLE OF MEASLES SURVEILLANCE AT THE ELIMINATION STAGE.

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BACKGROUND AND AIMS: The successful implementation of the Measles Elimination Program in Russia allowed to decrease the measles incidence to 0.12 per 100 000 in 2007. The number of territories with zero incidence is increasing. The sporadic morbidity required to improve measles surveillance in order to determine the true number of measles cases.

METHODS: The epidemiological, serological, molecular-genetic and statistical methods were used to conduct this study.

RESULTS: In 2007 the Russian Federation reported 175 measles cases of which 38 cases (21.7%) were imported from abroad and 12 cases (6.9%) were epilinked with imported cases. The genotyping results confirmed that measles had been imported to Russia from Uzbekistan(D6), China (H1) and Thailand (D5). In the last two years it has been found that no genotype circulating in Russia can be referred to as predominant and that the number of genotypes increased due to the importation which demonstrates the efficiency of measles surveillance. In addition the Russian's health institutions Jointly with WHO ROE tested and approved a method for active search of measles cases among patients with exanthema and fever. The optimal number of people to be laboratory examined was determined as 2 per 100 000 for each territory. It allowed to detect additional measles cases and work out criteria to certify territories as free from measles. A total of 11 measles cases were detected in active search in 2007.

CONCLUSIONS: 1. The measles incidence is trending steadily downward in Russia.

2. The conditions for endemic circulation of measles virus are lacking in the Russian Federation.

Topic: Epidemiology

Paper number: 1381

Presentation type requested: Poster Presentation

MEASLES OUTBREAKS IN CANARY ISLANDS, INSIDE THE ELIMINATION PLAN OF THIS DISEASE. 2001-2007

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BACKGROUND AND AIMS: We describe Measles outbreaks in Canary Islands verified during The Elimination Plan force.
METHODS: We supervised the Measles cases notified to the Canary Net of Epidemiologic Surveillance from 1st January 2001 to 31st December 2007. The information collected was obtained in an individual way from an epidemiologic card established in the Plan.
RESULTS: During the analyzed period we verify two outbreaks. One in Gran Canary Island between February- March 2006. In this break, were studied 34 suspicious cases. No considered 19 cases (56%), accepted 14 cases (41%), resting 1 (3%) as compatible case. The 40% of the cases were between 26 and 35 years old and the 21% between 16 and 25 years old. The 33% of the cases were vaccinated, and the 53% were women. The most frequently sintoms were exanthema, fever and cough. The 100% of the confirmed cases were positive for IgM. We could isolate Measles virus in 7 samples that corresponded in all cases with genotype B3. The second one was in Tenerife Island between April-June 2006, in which outbreak were affected three turist brothers comming from Germany. 1 of them below 16 months, and the other two among 16 months and 4 years old. In them, we isolate D6 genotype.
CONCLUSIONS: The ending of the two outbreaks with only 17 confirmed cases and one compatible, allow us to assure that the adopted measures and follow-up, where the correct ones. We deal that the group-immunity in front of this disease is very raised in Canaries

Topic: Epidemiology

Paper number: 1385

Presentation type requested: Poster Presentation

HEPATITIS A AND B PREVALENCE – SIGNIFICANCE OF PRE-VACCINATION TESTING FOR ANTIBODIES

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BACKGROUND AND AIMS: The aim of the study was to determine the prevalence of antibodies against hepatitis A (HAV) and B (HBV) in people older 40 years who have never been vaccinated against viral hepatitis, and evaluate the significance of pre-vaccination serological testing.

METHODS: 972 people were examined in three age categories: 41-50, 51-60, and over 61 years. We determined four indicators in the serum: IgM and IgG antibodies against HAV (anti-HAV total), HBV (anti-HBs, anti-HBc), and HBsAg antigen. Samples with anti-HAV > 20 IU/l and anti-HBs ≥ 10 IU/l were considered in the test to be positive.

RESULTS: The examined group consisted of 487 women and 485 men. In the group aged 41-50 years were 26 (16.9%) anti-HAV positive, 7 (4.5%) anti-HBs positive and 3 (1.9%) anti-HBc positive. In the group aged 51-60 years were 129 (57.7%) anti-HAV positive, 22 (9.0%) anti-HBs positive and 13 (5.3%) anti-HBc positive. In the group aged 61 years and older were 444 (77.5%) anti-HAV positive, 53 (9.2%) anti-HBs positive and 35 (6.1%) anti-HBc positive. HAV prevalence was in dependence on sex higher in men than women in all age groups.

CONCLUSIONS: High seroprevalence in non-vaccinated older age persons with non-contributory history of viral hepatitis testifies to very frequent asymptomatic course of disease. Pre-vaccination examination of anti-HAV antibodies appears to be effective in persons older than 50 years. Pre-vaccination testing for the presence of anti-HBs antibodies appears to be ineffective in view of their low prevalence in population.

Topic: Epidemiology

Paper number: 1397

Presentation type requested: Poster Presentation

PERTUSSIS IN GRAN CANARY ISLAND 1999-2007

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BACKGROUND AND AIMS: The introduction of the DTP vaccine in Canary Islands vaccine calendar has mean an important descent in Pertussis incidence. Nevertheless still, there continue notifying cases, in most of then we can demonstrate that the infeccious source was located in familiar area. We expose a descriptive epidemiologic study about Pertussis evolution in Gran Canary Island in the period 1999-2007

METHODS: We supervised the Pertussis cases notified from 0 hours of 1st January 1999 to 24 hours of the 31 st December 2007. We made definition of suspicious and confirmed case and we evaluate the descriptive variables, sex, age, previous DTP vaccination and date of becoming of symptoms

RESULTS: During the analyzed temporary period, there were notified 83 suspicious cases, all of them were confirmed. 31 were women and 52 men. The 67% of the patients were below 2 months old, the 25% between 2 months and 1 year old, and the 8% older than one year. The 90% of the cases had in front of this disease y for their age, none of vaccines, or only one dosis. The 4% had two dosis, and 3 patients had a complete vaccination. Two cases, older the year, had not being vaccinated. In other way, 3 cases lower of two months, died

CONCLUSIONS: Still we observe a little presence of this desease, in most of cases, people who because their ages has not received vaccination against the Pertussis. If is necessary to establish investigation mechanisms that allow us to get to the infection source in this cases

Topic: Epidemiology

Paper number: 1400

Presentation type requested: Poster Presentation

A PREVIOUSLY UNIDENTIFIED RISK GROUP FOR MEASLES TRANSMISSION. RESULTS FROM AN OUTBREAK INVESTIGATION IN BELGIUM.

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BACKGROUND AND AIMS: Elimination of measles in the European Region is targeted by 2010. Outbreaks in Europe in 2005-2006 identified travelers and healthcare workers as risk groups for measles transmission and special attention was given to these groups in Belgium. In the autumn of 2007, a measles outbreak occurred in a previously unidentified population at risk, a Jewish Community in Antwerp. Information on vaccine coverage in this subgroup in Belgium was not available, but there were no reasons to suspect opposition to vaccination. **METHODS:** In October 2007, eight suspected cases of measles in Jewish schools in Antwerp were reported. The diagnosis of measles was confirmed by saliva and nasopharyngeal samples. The outbreak investigation included collection of patient characteristics through a questionnaire, active case finding and laboratory tests with virus isolation and genotyping. **RESULTS:** Over a period of 19 weeks, a total of 47 cases were identified, aged 0 to 21 years. All cases belonged to the same Jewish orthodox community and 82% of the cases were unvaccinated. For at least 6 cases, a link with an outbreak in the same community in the UK and Israel was established. Reasons for non-vaccination were mainly lack of information and anti-vaccine advice of some doctors. **CONCLUSIONS:** The elimination of measles poses the challenge of identifying and vaccinating particular risk groups. Outbreaks can provide important information on unprotected sub-groups.

Fortunately, the high overall MMR coverage (94%) in Antwerp prevented spread of the outbreak to the general population.

Topic: Epidemiology

Paper number: 1406

Presentation type requested: Poster Presentation

VIRULENCE DETERMINANTS ASSOCIATED TO ENTEROCOCCUS FAECALIS COLONIZING NEWBORNS AT A NEONATAL INTENSIVE CARE UNIT (NICU) IN A LISBON HOSPITAL

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BACKGROUND AND AIMS: Enterococci are important nosocomial pathogens that can cause serious infections in NICU patients. This study aimed to evaluate the virulence determinants associated with Enterococcus faecalis-Efe resistant and susceptible to high concentrations of gentamicin (HLGREfe/HLGSEfe). **METHODS:** 422 newborns were screened for enterococcal rectal carriage from January 2005 to April 2006 generating 1,348 samples. Microbial identification and antimicrobial susceptibility testing were performed by standardized methods. 51% of the HLGREfe were assessed for clonality by pulsed-field gel electrophoresis (PFGE), presence of virulence genes (asa1, cylA, esp, gelE, hyl) by Multiplex-PCR, and expression of gelatinase and cytolysin. The results were compared with a set of HLGSEfe. **RESULTS:** The frequency of E.fe colonization was 62% being 21% of them HLGR. The prevalence of the virulence determinants among HLGREfe (n=97) was 100% asa1, 75% cylA, 89% esp, and 99% gelE. All the isolates cylA+, and 11% of the gelE+ showed cytolysin and gelatinase production. The profile asa1-cylA-esp-gelE was associated mainly to major clone PFGE A (60 out of 64 E.fe). Comparing with a set of HLGSEfe (n=93) a reduction of the presence of the asa1 (60%), cylA (21%), and esp (49%) was noted whereas the prevalence of gelE was 81% and his expression 57% (43 out of 75 isolates). The profile asa1-cylA-esp-gelE was associated to ten Efe included in 8 different PFGEs. HLGSEfe population was more heterogeneous than HLGREfe (32 versus 9 PFGE). **CONCLUSIONS:** Newborns at the NICU can be reservoirs of E.faecalis with a high pathogenicity potential which will allow a major dissemination and capacity of infection.

Topic: Epidemiology

Paper number: 1412

Presentation type requested: Poster Presentation

MYCOPLASMA PNEUMONIAE IN KOREAN CHILDREN: THE EPIDEMIOLOGY OF PNEUMONIA OVER AN 18-YEAR PERIOD

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BACKGROUND AND AIMS: Mycoplasma pneumoniae (MP) is a major cause of community-acquired pneumonia in children. The aim of this study was to investigate the long-term epidemiology of MP pneumonia in Korean children. **METHODS:** A retrospective analysis of a database of 2,405 patients with pneumonia at the Seoul National University Children's Hospital between 1986 and 2004 was performed. Serologic diagnosis for MP infection was made based on a fourfold rise or single titers $\geq 1:640$, which were measured by an indirect agglutination test. **RESULTS:** MP pneumonia was diagnosed in 568 patients over 18 years. The mean age was 5.7 years. Children younger than 5 years of age accounted for 44% of the cases. Six outbreaks were observed at intervals of 3-4 years. The earlier epidemics up until 1996 peaked in the summer, while the later epidemics peaked in the fall or early winter. Children < 5 years old were more commonly affected during large epidemics compared to endemic periods. The geometric mean antibody titers were maintained $\geq 1:320$ upto 7 months after the onset of illness. **CONCLUSIONS:** The results of this study revealed community outbreaks of MP pneumonia at 3-4 year intervals among Korean children. A significant proportion of young Korean children were affected by MP pneumonia, especially during large epidemics.

Topic: Epidemiology

Paper number: 1425

Presentation type requested: Oral Presentation

MEASLES OUTBREAK IN CATALONIA (SPAIN) AFFECTING PREDOMINANTLY CHILDREN UNDER ONE YEAR OF AGE. IMPLICATIONS FOR THE VACCINATION SCHEDULE

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BACKGROUND AND AIMS: Until world-wide eradication of measles occurs, epidemics may emerge in a country or region that has achieved elimination affecting indigenous population. The objective of this study was to analyze epidemiological and clinical characteristics of the measles outbreak that began in Catalonia in 2006. **METHODS:** Data on cases reported under clinical suspicion to epidemiological surveillance units of the Department of Health, Generalitat of Catalonia were collected. Study period was 28 August 2006 to 8 July 2007. Suspected cases were confirmed by determination of measles-specific IgM antibodies and/or detection of measles virus genome in urine. The incidence rates (IR) were calculated with estimated 2006 population in the affected regions. Confidence intervals (CI) were calculated assuming a Poisson distribution. The χ^2 and Fisher's exact tests were used to determine association between proportions. Level of statistical significance $\alpha=0.05$. **RESULTS:** A total of 379 cases were confirmed, IR 6.6/100,000 inhabitants (95%CI: 5.9-7.2); 87.1% of cases occurred in non vaccinated persons, 50% below 15m of age (IR: 278.2 / 100,000 [95%CI:233-312]). Mean age was 12 months in this group. 340(89.7%) cases occurred in indigenous population. Laboratory confirmation was obtained in 338 cases (89.5%). Genotype D4 was identified in all the sequenced samples. **CONCLUSIONS:** This outbreak of measles, the largest occurred in Catalonia in 20 years since routine vaccination was introduced, showed that high vaccination coverage do not guarantee maintenance of elimination. Case age-distribution (25% between 12-15 m) suggests that, in Catalonia, first dose MMR vaccine should be routinely administered at 12m of age.

Topic: Epidemiology

Paper number: 1426

Presentation type requested: Poster Presentation

ICD-10 SURVEILLANCE ON INTUSSUSCEPTION IN PEDIATRIC HOSPITALS IN BAVARIA

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BACKGROUND AND AIMS: To assess the baseline incidence of intussusception (IS) in Bavaria in order to analyze potential incidence changes in case of a general recommendation for rotavirus vaccination. **METHODS:** From a total of 42 Bavarian paediatric hospitals, 29 provided ICD-10 data. Children <17 years of age hospitalized in 2005 or 2006 with an ICD-10 discharge code for IS (K56.1) as primary or secondary diagnosis or with additional codes for desinvagination (OPS codes 5-468 and 8-122) were captured. **RESULTS:** The 29 hospitals reported a total of 531 children (278 in 2005, 253 in 2006); 357 children (67%) were male. The average age at admission was 2.5 years (median 2, IQR 1-4); 24% of the children were <1 year of age. No fatalities were reported. The ICD-10 code for IS was documented as primary diagnosis in 381 (72%) children, including 224 children with an OPS code for desinvagination. In 136 (26%) children, IS was reported as secondary diagnosis, including 38 with an OPS code. Solely an OPS code was given in 14 (2%) patients. The yearly incidence estimate of all IS cases in Bavaria was 73 per 100,000 children <1 year of age. **CONCLUSIONS:** The incidence of IS in children <1 year of age was comparable to estimates from other studies (Australia: 101/100.000; Switzerland: 38-56/100.000). However, our results provide a maximum estimate due to the broad case definition. Combination of ICD-10 code for intussusception and OPS codes for desinvagination may provide a more specific and clinical relevant case definition for long-term surveillance.

Topic: Epidemiology

Paper number: 1430

Presentation type requested: Poster Presentation

SURVEILLANCE OF HOSPITALIZATIONS DUE TO ROTAVIRUS GASTROENTERITIS BASED ON ICD-10 DISCHARGE RECORDS IN PAEDIATRIC HOSPITALS IN BAVARIA, GERMANY

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BACKGROUND AND AIMS: Routine rotavirus vaccination is currently being discussed in Germany. Baseline data on severe rotavirus infections are necessary to estimate the burden of disease. We estimated the incidence of hospitalizations based on ICD-10 discharge data from Bavarian paediatric hospitals for 2005 and 2006.
METHODS: Children <17 years of age hospitalized for ≥ 1 day with a primary diagnosis of rotavirus infection (A08.0) were captured by analysis of ICD-10 discharge records provided by 29 of a total of 42 paediatric hospitals for 2005 and 2006. Age, gender, date of admission, length of hospital stay, and secondary diagnoses were analysed. Additionally, all cases with A08.0 as secondary diagnosis were captured.
RESULTS: The 29 hospitals reported 6126 cases (2751/3375 in 2005/2006), with a peak in March of each year. The majority of children were <2 years of age (63%); 85% were <4 years of age; 52% were male. Length of hospital stay was 3 days (median; IQR 2-4 days). Dehydration was the most frequent secondary diagnosis (in 76% of the children). No fatalities occurred. The yearly incidence of all hospitalizations in Bavaria was estimated 7.4 per 1000 children <4 years of age. Additionally, there were 1576 rotavirus infections coded as secondary diagnosis.
CONCLUSIONS: The regional incidence of hospitalization in children <4 years of age estimated by ICD-10 was very similar to a previous estimate based on a one-year laboratory surveillance in Germany (7.7/1000; Poppe et al. 2002). ICD-10 surveillance of the rotavirus-specific code allows the monitoring of possible impacts of a future vaccination program.

Topic: Epidemiology

Paper number: 1441

Presentation type requested: Poster Presentation

VIRULENCE DETERMINANTS AMONG ENTEROCOCCUS FAECALIS COLONIZING NEWBORNS FROM A NEONATAL INTENSIVE CARE UNIT (NICU) OF A LISBON HOSPITAL

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BACKGROUND AND AIMS: Enterococci are important nosocomial pathogens that can cause serious infections in NICU patients. This study aimed to determine the virulence profiles among Enterococcus faecalis-Efe resistant and susceptible to high concentrations of gentamicin (HLGREfe/HLGSEfe). **METHODS:** 422 newborns were screened for enterococcal rectal carriage from January 2005 to April 2006 generating 1,348 samples. Microbial identification and antimicrobial susceptibility testing were performed by standardized methods. Half (51%) of the HLGREfe and 11% of the HLGSEfe were tested for clonality by pulsed-field gel electrophoresis (PFGE), presence of virulence genes (asa1, cylA, esp, gelE, hyl) by Multiplex-PCR, and expression of gelatinase and cytolysin using specific media as described Eaton et al. 2001. **RESULTS:** The frequency of colonization by E. faecalis was 62%; 21% of the Efe were HLGRE. The HLGSEfe population was more heterogeneous than HLGREfe (32 versus 9 PFGE patterns). The prevalence of virulence determinants among HLGREfe (n=97) was as follows; 100% asa1; 75% cylA; 89% esp; 99% gelE. All cylA+ isolates and 11% of the gelE+ isolates produced cytolysin and gelatinase. The virulence profile asa1-cylA-esp-gelE was associated to a major PFGE-A E. faecalis clone (60/64 isolates). The prevalence of the virulence determinants among HLGSEfe (n=93) was as follow: 60% asa1; 21% cylA; 49% esp; 81% gelE and 57% (43/75) of these produced gelatinase. The profile asa1-cylA-esp-gelE was shared by ten E. faecalis isolates distributed by 8 PFGE patterns. **CONCLUSIONS:** Newborns at NICU are reservoirs of E. faecalis with high virulence potential which may induce enhanced capacity of dissemination and pathogenicity.

Topic: Epidemiology

Paper number: 1444

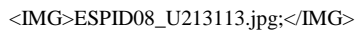
Presentation type requested: Oral Presentation

ACUTE BACTERIAL MENINGITIS IN CHILDHOOD: HAS THE CASE FATALITY RATE CHANGED DURING A 32 YEAR-PERIOD?

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BACKGROUND AND AIMS: During the past decades the epidemiology of childhood bacterial meningitis (BM) has changed dramatically, mainly because of introduction of conjugate vaccines and increased availability of potent antimicrobials and intensive care units. The aim of this study was to investigate changes in Case Fatality Rates (CFR) of acute BM during a 32-year period.
METHODS: Data were collected prospectively through a Meningitis Registry in the infectious diseases department of a tertiary children's hospital. Children aged 1 month to 14 years were included. Cases were divided in three time periods; A (1974-1984), B (1985-1994) and C (1995-2005).
RESULTS: In total 2,477 BM cases were analysed. The table presents distribution of CFR according to pathogen. The CFR was estimated higher in period C compared to periods A and B (RR 1.4, 95% CI 1.0-1.9, p=0.02). In period C, the CFR was higher in children aged 1-4 years (7.7%, p=0.0003) and 10-14 years (7.9%, p=0.2).
CONCLUSIONS: The increase of CFR in period C can be attributed in part to the NM-C epidemic in the late 90s, before the introduction of NM-C conjugate vaccine. Moreover the steep rise in SP CFR in the same period possibly reflects enhanced diagnostic accuracy and indicates that the 7-valent SP conjugate vaccine can prove valuable in the reduction of fatality rates in BM.



Topic: Epidemiology

Paper number: 1458

Presentation type requested: Poster Presentation

HAEMOPHILUS INFLUENZAE B, CLINICAL AND EPIDEMIOLOGICAL PROBLEMS AT THE YOUNGEST POPULATION

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BACKGROUND AND AIMS: Diseases caused by Haemophilus influenzae B (Hib) are widely spread, especially in countries without systematic vaccination, and are very important problem at the youngest population. With systematic vaccination many countries are eradicated or going to eradicate this diseases. Most frequent clinical manifestation of Hib infection is tonsilopharyngitis, rear manifestations are otitis, empyema, pericarditis, pneumonia, and very rear manifestations are epyglositis, laryngitis and bacterial meningitis.

Aim of this study is to evaluate clinical and epidemiological characteristics of infections caused by Hib in Serbia within population of children aged from 2 months to 6 years.

METHODS: Descriptive epidemiological method was used.
RESULTS: Epidemy of Hib in preschool facility was characterized with severe clinical course and complications and one lethal outcome from respiratory distress. Epidemy lasted for 8 days and affected 20 children from 2 to 4 years. Antiepidemic measures were taken- preschool facility was closed, for children with symptoms antibiotic therapy was prescribed (following antibiogram), and for children who were in possible contact chemoprophylaxis with same antibiotic was used.
CONCLUSIONS: Diseases caused by Hib may be serious clinical, biological and economic problem. Radical measure in order to eliminate this problem is systematic immunization.

Topic: Epidemiology

Paper number: 1482

Presentation type requested: Poster Presentation

EPIDEMIOLOGICAL PATTERN OF BORDETELLA PERTUSSIS (BP) INFECTION IN A PEDIATRIC HOSPITAL

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BACKGROUND AND AIMS: Bordetella pertussis (BP) continues to be the cause of significant morbidity and mortality in children too young to be fully protected, despite the high vaccination coverage (92%) in the country.

To determine the clinical-epidemiological pattern of BP and to identify lethality risk factors we conducted the present study.

METHODS: Prospective, cohort study, all the patients attending Ricardo Gutierrez Children hospital between 12/01/2003 to 12/31/2007 who found the case definition by OMS and Ministry of Public Health criteria were included. Cases were confirmed by PCR in nasopharyngeal secretions or by epidemiological link. **RESULTS:** 257 patients were included, 53% females, with a median age of 3 months (1m-16 yrs), 81% of them were below 6 months; 91% of the cases (235/257) were studied with PCR, 39% (87 hospitalized/14 ambulatory) were confirmed.

The 50% of patients (126/252) were no vaccinated because of age, 28% (70/252) one dose, and 11.5% (29/252) 2 doses, 10.5 % had complete schedule. The risk of disease was significantly associated with the lack of vaccination. ($p=0.015$; RR: 1.4 .IC= 1.09- 2); 80% (205/257 were hospitalized (97% were well-nourished). Nosocomial infection rate was 7% (15/205). The lethality rate was 5.4% (11/205), the risk factors associated were: bad-nourished ($p=0.03$) and leucocytes count > 30.000 ($p=0.00003$).

CONCLUSIONS: 1- The affected population were children without previous disease, 2- the high incidence occurred in children below 6 months, 3-half of the population were no vaccinated, 4- the bad nutrition and the leucocytes > 30.000 were mortality risk factors.

Topic: Epidemiology

Paper number: 1485

Presentation type requested: Poster Presentation

VIRAL HEPATITIS B VACCINE EFFECTIVENESS IN THE REPUBLIC OF MOLDOVA

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BACKGROUND AND AIMS: Use of routine acute disease surveillance data to assess the impact of vaccination of infants against Viral Hepatitis B (VHB).
METHODS: Descriptive epidemiology, statistical analysis
RESULTS: The reported average incidence of acute VHB before starting vaccination in 1989 was 1.4 per 1000 in children 0-2 years of age and 0.69 per 1000 in children 3-6 years old. After four years of selective vaccination of newborns from HBsAg positive mothers, in 1994 the number of cases per 1000 has decreased to 0.61 among 0-2 years old children while the rate stayed at 0.71 among children of 3-6 years. Starting 1995, the universal vaccination of newborns has been implemented reaching the vaccination coverage over 98%. The number of reported VHB cases has further decreased to 2 case (0.02 per 1000) in 0-2 years children, and zero cases in the 3-6 years cohort in 2006. Vaccination of children against HBV contributed significantly to the decrease of the total incidence rate from 65.31 per 100000 in 1989 to 7.51 per 100000 in 2006. Proportion of HVB cases in children 0-6 years of age has decreased from 23% to 0.2% accordingly.
CONCLUSIONS: Routine acute disease surveillance data are useful to document the impact of VHB immunization. Vaccination coverage above 98% allows reducing to units / eliminating acute clinical cases of VHB in infants. Reported cases among 0-2 years old children reveals a possible continue perinatal transmission of VHB infection.

Topic: Epidemiology

Paper number: 1487

Presentation type requested: Poster Presentation

MOLECULAR EPIDEMIOLOGY, SEROTYPE DISTRIBUTION AND ANTIMICROBIAL RESISTANCE OF STREPTOCOCCUS PNEUMONIAE AMONG HEALTHY PHARYNGEAL CARRIERS IN CHILDREN IN SPAIN

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BACKGROUND AND AIMS: The use of the heptavalent conjugate vaccine (PCV-7) would change the molecular epidemiology of pneumococcal carriage. The purpose of this study is to determine the rate of pharyngeal carriage, serotype, clone distribution and antimicrobial resistance of *Streptococcus pneumoniae* among children. **METHODS:** Oropharyngeal specimens were prospectively collected from healthy children, aged 6-60 months, recruited in the University Hospital Sant Joan de Deu, Barcelona, Spain. (Period of study: January 2007-December 2007). Serotyping was performed by the Quellung reaction. Minimal Inhibitory Concentration (MIC) of antimicrobials was determined by agar dilution methods. Molecular characterization was performed using Multi Locus Sequence Typing (MLST). **RESULTS:** A total of 150 children were recruited, mean age 22.4 months. 46% of patients had received at least one dose of PCV7. The rate of oropharyngeal pneumococcal carriage was 16.6%. Overall, 18 strains were available for microbiological characterization, 22% were PCV7 serotypes and (77.7%) were non-PCV7 serotypes. 27.7% of the strains were penicillin non susceptible and 16.6% were highly resistant. Penicillin non susceptible strains were more frequently found in vaccine serotypes (50%) vs non-vaccine serotypes (30%)

Clonal analysis shows a high level of genetic diversity with 16 different sequencetypes which included the most important clones causing invasive pneumococcal disease in our geographical area: ST306 in one strain serotype 1 or ST1201 and ST276 in strains serotype 19A.

CONCLUSIONS: The increased of non-vaccine serotypes in healthy children must be closely monitored for the surveillance of invasive pneumococcal disease.

Topic: Fungal infections

Paper number: 1260

Presentation type requested: Poster Presentation

INTERACTIONS BETWEEN HUMAN MONOCYTES AND CANDIDA ALBICANS (CA) GROWN IN BIOFILM OR PLANKTONIC STATE

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BACKGROUND AND AIMS: CA is associated with catheter-related infections in paediatric patients. While resistance of CA biofilm to antifungals is well-documented, little is known about its interaction with host-defences. We characterized and compared the interactions of monocytes with CA, growing in biofilm or planktonic state. **METHODS:** CA-M61, an intravascular-catheter isolate was used. A Green-Fluorescent Protein-tagged CA-strain was used for microscopy. Planktonic cells were grown in YNB-medium at 37°C overnight. Biofilms were grown on silicone-elastomer disks in multi-well plates for 48h at 37°C. THP1 monocytic cell-line was used as monocyte source. Monocytes were incubated with biofilm and planktonic cells at monocyte/CA ratios ranging from 1:5 to 10:1 for a further 2h at 37°C/5% CO₂. Elutriated human monocytes labelled with red fluorescent protein were used for microscopy. Biofilm formation and interactions between CA and monocytes were assessed by XTT assay, as changes in fungal metabolic activity, and confocal-laser-scanning-microscopy (CLSM). Results were compared by t-test. **RESULTS:** Monocyte-induced biofilm damage was significantly lower than planktonic damage in monocyte/CA ratio-dependent pattern (mean±SE of 7 experiments, 11.4±3.9% vs 37.7±18.6%, 13.2±0.8% vs 46.6±23.5%, 22.8±3% vs 48.4±22.9%, 27.6±5.9% vs 66.2±7.6%, 43.9±9.7% vs 73.8±1.3%, p<0.001 at 1:5, 1:2, 1:1, 5:1, 10:1 ratios, respectively). Monocytes effectively phagocytosed planktonic cells but not biofilm cells over 2h as shown by CLSM. Further, monocytes appeared intercalated in a dense network of extracellular material and hyphae. **CONCLUSIONS:** CA biofilm is more resistant to monocyte killing than planktonic cells. These findings provide insights into the mechanisms of biofilm resistance to host-defence.

Topic: Fungal infections

Paper number: 1352

Presentation type requested: Poster Presentation

EPIDEMIOLOGY OF NOSOCOMIAL CANDIDEMIA IN A PEDIATRIC HOSPITAL IN SAO PAULO, BRAZIL.

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BACKGROUND AND AIMS: Candidemia have become a major problem at tertiary-care hospital worldwide, with high incidence, mortality and associated costs. The epidemiology of candidemia in pediatrics is largely unknown, especially in Latin America and Brazil.

The aim of this study is to assess the incidence, lethality, species distribution and antifungal resistance profile at a public pediatric hospital, in Sao Paulo, Brazil.

METHODS: Between January 2006 and December 2007 we conducted a retrospective study, by the medical records and laboratory data, including all nosocomial candidemia episodes at Darcy Vargas Hospital. **RESULTS:** We detected 46 cases of candidemia, and the incidence rate was 0.64 cases per 1,000 patient-days, with 15.8% of lethality, and the median age was 3.2 years. *Candida albicans* was the most common species (66.7%), followed by *Candida krusei* (9.1%). The resistance to Amphotericin B was 3.03% and to fluconazol 25%. Amphotericin B was the most frequently used drug (94.4%) and the median duration of the treatment was 25.7 days. **CONCLUSIONS:** In conclusion, it confirms the candidemia as a major problem and the importance of further studies and surveillance projects in pediatric population.

Topic: Fungal infections

Paper number: 1355

Presentation type requested: Oral Presentation

RISK FACTORS FOR PNEUMOCOCCAL CARRIAGE IN HEALTHY DUTCH INFANTS. THE GENERATION R STUDY.

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BACKGROUND AND AIMS: Pneumococcal carriage provides an important key to the burden of pneumococcal disease and its prevention. Our aim was to study the prevalence, risk factors and dynamics of pneumococcal carriage in a population-based prospective cohort in infancy. **METHODS:** The study was embedded in the Generation R Study, a population-based prospective cohort study. Nasopharyngeal swabs were obtained at the age of 1.5 months, 6 months and 14 months to detect pneumococcal carriage. Data on risk factors were obtained by midwives, hospital registries and by postal questionnaires. The study was conducted in Rotterdam, the Netherlands, from June 2003 till November 2006. **RESULTS:** Prevalence of pneumococcal carriage increased from 8.3% to 31.3% to 44.5% at the ages of 1.5 (n=627), 6 (n=832) and 14 months (n=757), respectively. The percentage of serotypes covered by the 7-valent conjugate vaccine in the positive samples increased from 36.5% to 53.6% to 62.2%. Having siblings (aOR 8.02, CI 2.94-22.06 at 1.5 months and aOR 1.98, CI 1.29-3.03 at 6 months of age) and day care attendance (aOR 3.22, CI 2.05-5.06 at 6 months and aOR 3.14, CI 2.17-4.53 at 14 months of age) were associated with pneumococcal carriage. Pneumococcal carriage at 6 months was associated with pneumococcal carriage at 14 months (aOR 2.50, CI 1.55-4.03). No associations between pneumococcal carriage and breast-feeding were found. **CONCLUSIONS:** The prevalence of serotypes covered by the 7-valent conjugate vaccine increases in the first year of life. Siblings, day care attendance and previous pneumococcal carriage are independent risk factors for pneumococcal carriage in infancy.

Topic: Fungal infections

Paper number: 1434

Presentation type requested: Poster Presentation

USE OF VORICONAZOLE IN A CYSTIC FIBROSIS (CF) PATIENT WITH ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS (ABPA).

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<pre>BACKGROUND AND AIMS:</pre>

ABPA occurs in about 10% of CF patients. Conventional treatment is based on oral corticosteroids; there is evidence for the efficacy of antifungal drugs but there is no consensus on their use.

<pre>METHODS:</pre>case report<pre>RESULTS:</pre>

A male CF patient 19 years old with pancreatic insufficiency and ABPA since 2001, had intermittent Pseudomonas and chronic Staphylococcus lung infection, recurrent cough and decline of lung function (LF) during 2006. Clinical conditions did not improve despite several intravenous antibiotics courses. Laboratories findings showed total IgE >700 IU/ml, specific IgE (class IV) and positive skin prick test for Aspergillus. Under suspicion of recurrence of ABPA he was started on prednisolone 2mg/kg/day and itraconazole, with clinical improvement but onset of insulin dependent diabetes.

In 2007 he presented a recurrence of ABPA, for presence of CF related diabetes, monotherapy with oral Voriconazole was chosen. The drug was started at 200 mg bd and continued for 9 months with reduction of total IgE (from 5000 to 845 KU/L) and improvement in LF (FEV1 from 64% to 89%).

Patient complained transient visual problems and slight elevation in hepatic enzymes and colestasis index, subsided at drug suspension.

<pre>CONCLUSIONS:</pre>Voriconazole represents an alternative strategy when corticosteroids are not suitable. Randomized control trails are needed to better define the role of antifungal drugs in ABPA.

Topic: Fungal infections

Paper number: 1471

Presentation type requested: Poster Presentation

CORRELATION BETWEEN VORICONAZOLE LEVELS IN SERUM AND CEREBROSPINAL FLUID IN AN ADOLESCENT GIRL TREATED FOR CEREBRAL ASPERGILLOSIS

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BACKGROUND AND AIMS: Aspergillosis of the central nervous system (CNS) bears a high risk of mortality. Compared to other antifungal agents voriconazole and liposomal amphotericin B (L-AmB) treatment has lead to better clinical outcome and survival of CNS aspergillosis. However, data on cerebrospinal fluid (CSF) levels of voriconazole are limited and dose recommendations for treatment of CNS aspergillosis are missing. **METHODS:** An 18-year-old female with a history of relapsed rhabdomyosarcoma and aspergillosis of the paranasal sinuses developed invasive aspergillosis at the previous tumor site with massive involvement of the temporal lobe. *Aspergillus fumigatus* (MIC / voriconazole 0.19, caspofungin 0.123, and amphotericin B 3 µg/ml) was grown from biopsy material.

She was treated with voriconazole (7 mg/kg bid) for 7 months (partly in combination with caspofungin and L-AmB) with good initial response.

After 5.5 months the aspergilloma was resected due to progression and antifungal triple therapy was continued for 6 weeks.

Voriconazole levels were monitored in blood and ventricular CSF (drawn from a previously implanted Ommaya reservoir). **RESULTS:** Voriconazole levels reached therapeutic concentrations in both compartments (blood 0.4-5.3, median 2.3 µg/ml, CSF 0.4-2.2, median 0.98 µg/ml).

CSF levels were 29-94 % (median 49 %) of the corresponding blood levels. There was a strong and significant correlation ($r=0.83$, $p<0.001$) between CSF and blood levels (Spearman). After the end of antifungal therapy there has been an uneventful follow-up for 1.5 years. **CONCLUSIONS:** Higher than recommended doses and monitoring of CSF levels of voriconazole may be necessary to effectively treat cerebral aspergillosis.

Topic: Gastrointestinal infections

Paper number: 1040

Presentation type requested: Poster Presentation

**HOSPITALIZATION FOR NOSOCOMIAL ROTAVIRUS GASTROENTERITIS IN A TERTIARY PEDIATRIC CENTER:
A 4-YEAR PROSPECTIVE STUDY**

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BACKGROUND AND AIMS: Although rotavirus is the most common cause of gastroenteritis worldwide, data regarding nosocomial rotavirus gastroenteritis (NRVGE) are limited. Our aim was to prospectively assess the rates, seasonality, epidemiology and clinical parameters of NRVGE. **METHODS:** A prospective observational study over 4 years (January 2003 to December 2006) based on microbiology laboratory records and patient data in a tertiary pediatric center in Israel. Children (<18 years) with diarrhea and a positive rotavirus assays of stools specimens obtained >48 hours after admission or <72 hours after discharge were included. **RESULTS:** NRVGE accounted for 0.8% of all hospitalization days and 1% of all admissions, but for 1.8%, 1.5%, 0.3% and 0.1% of the admissions of children <1, >1-2, >2-5 and >5 years, respectively ($p<0.001$). The number of NRVGE cases was highest during the winter months, but its percent of all rotavirus gastroenteritis (RVGE) was highest during the summer months (36% in May to August vs 14% in October to January, $p<0.001$). 90% of the cases were <2 years; of the 2.8% >5 years, 80% were under immunosuppressive treatment or had a significant underlying disease. NRVGE occurred after a median hospitalization of 6 days, caused a median hospital stay of 3 days and required IV fluids in 67%. **CONCLUSIONS:** NRVGE causes a significant burden, especially in children <2 years, with a relative higher prevalence during the summer months. Prevention of RVGE by vaccination could also reduce NRVGE, and should be considered in cost-effectiveness analyses.

Topic: Gastrointestinal infections

Paper number: 1051

Presentation type requested: Oral Presentation

ZINC SUPPLEMENTATION FOR ACUTE GASTROENTERITIS IN CHILDREN: A META-ANALYSIS OF RANDOMISED CONTROLLED TRIALS

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BACKGROUND AND AIMS: The multiple actions of zinc, including effect on (1) absorption of water and electrolytes by the intestine; (2) faster regeneration of gut epithelium; (3) increased levels of enterocyte brush-border enzymes; and/or (4) enhanced immune response, provide the underlying rationale for the use of zinc in the treatment of acute gastroenteritis (AGE). This study aimed to up-date evidence for the effectiveness of zinc in treating AGE in children, with special emphasis given to data from developed countries.
METHODS: The following electronic databases were searched through November 2007 for randomised controlled trials (RCTs) relevant to AGE and zinc: MEDLINE, EMBASE, and The Cochrane Library; additional references were obtained from reviewed articles.
RESULTS: Twenty RCTs (12,645 participants, mainly from developing countries) met the inclusion criteria. Compared with controls, zinc reduced stool volume (3 RCTs, n=606, standardized mean difference, -0.9, 95% confidence interval, CI, -1.2 to -0.6). The use of zinc was associated with a significant reduction in diarrhea duration (14 RCTs, 6,895 infants, weighted mean difference -0.7 day, 95% CI -0.8 to -0.6), risk of diarrhea >7 days (9 RCTs, n=5,984, relative risk, RR, 0.8, 95% CI 0.7 to 0.9). Combined data from five RCTs (n=3156) showed that zinc compared with the control agent significantly increased the chance of vomiting (RR 1.2, 95% CI 1.05 to 1.4).
CONCLUSIONS: These data confirm that zinc supplementation can be useful for treating AGE in children, particularly those from developing countries. However, the role of zinc supplements in developed countries needs further evaluation.

Topic: Gastrointestinal infections

Paper number: 1091

Presentation type requested: Poster Presentation

ASSESSMENT OF THE WORKLOAD IN PAEDIATRIC EMERGENCY UNITS DUE TO ACUTE GASTROENTERITIS DURING THE EPIDEMIC SEASON IN FRANCE.

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BACKGROUND AND AIMS: To assess the burden of medical and paramedical activities related to the management of acute gastroenteritis (AGE) cases in France. **METHODS:** Observational, multicenter study, carried out in 23 French Paediatric Emergency Units. Each Unit was requested to include the first 25 children under 5 years, consulting for AGE during the epidemic season. **RESULTS:** A total of 443 children were included between January and April 2007. The median age was 13 months.

Symptoms have been persisting for an average of 2.7 days, and 61% of them had already consulted their practitioner. In 63% of cases, oral rehydration solution (ORS) had been prescribed.

The median waiting time in the Emergency Unit before being seen was 15 minutes. The median time spent by a health care professional with a child was 55 minutes (30 minutes for paramedical care and 25 minutes for medical care).

The length of these visits increased significantly ($p < 0.0001$) if the children presented signs of dehydration or changes in behaviour. Child's age had no significant impact. The rehydration in Emergency Units was: 70% oral rehydration, 16% parenteral rehydration (8% were combined).

37% of the children were allowed home after consultation in the Emergency Unit, 39% after spending time in observation, and 24% were hospitalized.

Amongst the children who were given a prescription upon being discharged ($n=333$), 90% were prescribed at least an ORS.

CONCLUSIONS: The time spent by a health care professional with a child presenting an acute gastroenteritis could cause organisational problems during an epidemic outbreak.

Topic: Gastrointestinal infections

Paper number: 1116

Presentation type requested: Poster Presentation

**EPIDEMIOLOGY OF ROTAVIRUS INFECTION (RVI) IN HOSPITALIZED CHILDREN IN MINSK CHILDREN
INFECTIOUS DISEASES HOSPITAL (CIDH) IN 2007**

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BACKGROUND AND AIMS: Background and aims: RVI morbidity is actual problem in Belarus. In 2007, RVI was fixed 922.1 cases per 100000 children in Minsk. **METHODS:** Methods: We studied the structure of acute gastroenteritis (AGE) in children treated in CIDH from January 1 to December 31, 2007 prospectively. Feces were investigated by routine bacteriological methods, virological immunoassay. We collected materials in the first two days after children hospitalization. **RESULTS:** Results: 17297 children aged from 1 month to 15 years old were admitted in CIDH in 2007 year and 17.1% (2956) of them were with acute gastroenteritis. The rotaviruses were detected in 1412 (47.8%) cases from 2956. RVI had the winter epidemiological peak (March-April). The peak morbidity was observed in children aged 24 months old. In Belarus, fatal cases were not fixed. With patients who underwent used Vesikari's scale for detection severity level, we found that 3% patients had a score < 7 (mild), 22% children - > 14 (severe). We saw that severity RVI increased and was based on exsiccosis with toxicosis. **CONCLUSIONS:** Conclusions: This study confirms the role of rotavirus in AGE in children. Vaccination might provide protection against RVI and to decrease severe forms frequency.

Topic: Gastrointestinal infections

Paper number: 1119

Presentation type requested: Poster Presentation

DOES THE SYSTEMIC RESPONSE OCCUR IN THE ROTAVIRUS INFECTION (RVI)?

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BACKGROUND AND AIMS: The inflammation caused by rotavirus is not only local but systemic inflammatory response syndrome
METHODS: We provided many different prospective studies with various patient groups till 2001-2007 years: using routine, virusological, immunological (Enzyme immunoassay, immunofluorescent microscopy, reverse transcription – polymerase chain reaction) methods with antirespiratory, antirotavirus and cytokines diagnostic test-systems.
RESULTS: We saw that severity RVI occurred to increase and based on exsiccosis with toxicosis. The most patients had used Vesikari's scale for detect the found severity level that 75% children had a score > 11 (moderately severe and severe). That is why we used antibiotics in 40.4% cases and intravenous transfusions in 75.4% cases in treatment. We noted the increased cytokines level of: IFN- α (92.1%), IFN- γ (100%), IL-1 α (53%), IL-1 β (47.4%), C3-complement (100%), p55-protein (100%). Data confirmed that the rotavirus inflammation caused the systemic response.
CONCLUSIONS: The inflammation caused by rotavirus is not only local but systemic inflammatory response syndrome.

Topic: Gastrointestinal infections

Paper number: 1120

Presentation type requested: Poster Presentation

THE ROTAVIRUS INFECTION IN CHILDREN: THE RESPIRATORY SYNDROME

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BACKGROUND AND AIMS: All infectionists, epidemiologists and researchers discuss the possibilities of rotaviruses spread from person to person as respiratory infection. **METHODS:** We have conducted a series of prospective studies with various patient groups in 2001-2007 years: using routine, virusological, immunological (Enzyme immunoassay, immunofluorescent microscopy, reverse transcription – polymerase chain reaction (RT-PCR)) methods with antirespiratory, antirotavirus test-systems in nasopharyngeal scrubs, blood and stools samples. **RESULTS:** From December 18, 2001 to January 18, 2002 in all patients hospitalized in City Infectious Diseases Hospital stools samples we identified 335 (44.3%) positive results by ELA. 305 (91.0%) from 335 patients hospitalized with acute gastroenteritis (AGE) but 30 (9.0%) – with acute respiratory infection. 16 (4.8%) didn't have AGE in future. In 2003 we studied 38 patients with confirmed RVI and found rotavirus antigen in nasopharyngeal scrubs by immunofluorescent microscopy. Positive results were 21 (55%). These dates were confirmed in 2006-7 using RT-PCR. **CONCLUSIONS:** The immunofluorescence microscopy and PCR methods may be useful as additional methods of diagnosis of RVI with respiratory syndromes. The identification of rotavirus antigen in nasopharyngeal epithelia may suppose aerosol spread of RVI from person-to-person.

Topic: Gastrointestinal infections

Paper number: 1136

Presentation type requested: Poster Presentation

THE DETERMINATION OF ASPECT OF NEUROLOGICAL COMPLICATION (SEIZURE) IN SHIGELLOSIS PATIENTS IN ZAHEDAN , IRAN

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BACKGROUND AND AIMS: Shigellosis is a cause of seizure in pediatric patients. Early detection is difficult especially when presents before diarrhea .This study was to determination of aspect of seizure in shigellosis pediatrics .Seizure was the first clinical presentation in these patients.**METHODS:** In this retrospective study, we overviewed seizure in 164 patients on seizure before & after admission including of the first clinical presentation in Aliebn e Abitaleb hospital.Data were analysed by SPSS software.

RESULTS: Of 164 established shigellosis patients, M/F :1/1 ,43 cases (26.2%)had less than 1 years old ,108(65.9%) between 1-5 & 13 case (7.9%) were above of 5 years old age .19.5% had decreased conciousness ,76.8% of patients before ,16.5% after admission and 6.7% had recurrent seizure, previous history of seizure were positive in 16.5% of patients.Family history of seizure was in 9.1% of patients .High peak temperature in both sex was 38.5 oc ,duration of seizure were 5 min and generalized form .

CONCLUSIONS: The families patient are not in a position to do early detection of shigellosis ,therefore pay attention to prevention, including of families and care center personnel education in handwashing after defecation and before food preparation and consumption especially in children less than 5 yr, that will decrease morbidity and mortality . Furtunately we no find any problem in our patient population after 2 yr call followup , except recurrence in some patients with previous & family history of seizure .

Topic: Gastrointestinal infections

Paper number: 1141

Presentation type requested: Poster Presentation

ACUTE VIRAL GASTROENTERITIS IN INFANTS IN UKRAINE

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BACKGROUND AND AIMS: To estimate prevalence of bowel virus infections in infants on the West Regions of Ukraine region. In Ukraine we still not use vaccination against rotavirus. No previous similar investigations in this region of Ukraine were made.

METHODS: During a winter period (2006-2007) 194 children less than 3 years old admitted at Lviv Infection Diseases hospital were investigated. The diseases severity was estimated using Vesikari scores for clinical severity. Stool specimens were tested for rotavirus, astrovirus, adenovirus, norovirus, and bacteria. Stool virus antigens were detected by ELISA.

RESULTS: All children had gastroenteritis symptoms during their hospitalizations. Rotavirus antigen was detected in 36,7% of all children compared to 33,3% with norovirus and 11,1% with adenovirus, and 5,6% with astrovirus. 79% of norovirus infections and 90% rotavirus infections were symptomatic. In 46,3% rotavirus infected children and 55,2% norovirus infected baby virus infection viralbacterial coinfection were found. The virus-virus coinfection were found in 25% case, more often norovirus-rotavirus coinfection were observed. Acute gastroenteritis caused by rotavirus was more severe than caused by norovirus (Vesikari score was 12,4 versus 10,6), more baby with rotavirus ($p < 0.05$) requested IV rehydration compare with norovirus. No statistical differences in illness severity were found between mixed infection and monobacterial or monoviral infection.

CONCLUSIONS: The high prevalence rotavirus and norovirus infections (monopathogen or coinfection) as a cause of acute gastroenteritis in infants and young children were established. This supports the need for a rotavirus vaccine and future epidemiological investigation

Topic: Gastrointestinal infections

Paper number: 1142

Presentation type requested: Poster Presentation

QUANTITATIVE DETECTION OF NOROVIRUS EXCRETION IN PEDIATRIC ONCOLOGICAL PATIENTS WITH PROLONGED ILLNESS AND NOROVIRUS SHEDDING

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BACKGROUND AND AIMS: Chronic courses of norovirus infection have been described in immunocompromised patients. Little is known about noroviral shedding and the correlation to clinical symptoms in these patients. In this report, we investigated the quantitative courses of norovirus excretion in nine oncological pediatric patients with prolonged gastroenteritis. **METHODS:** In a retrospective cohort study multiple fecal samples of nine pediatric oncological patients were analyzed by a one-step real-time PCR. Clinical data of the oncological patients were reviewed and virological data was correlated with clinical symptoms. **RESULTS:** All nine oncological patients presented with prolonged illness and prolonged noroviral shedding. Vomiting and diarrhea were associated with high norovirus concentrations and the norovirus excretions declined slowly in the oncologic patients. Retrospectively, initial PCR-testings for norovirus were performed 7 days in median after onset of symptoms. This finding hints at the difficulty of getting an early diagnosis of the infection in these children. **CONCLUSIONS:** Oncological pediatric patients shed high norovirus concentrations over a long period of time. Results of sequential quantitative PCR-testings for norovirus correlated with clinical symptoms. Both, clinical symptoms and quantitative PCR-testings help to define the severity of norovirus infection and to estimate the risk for transmission. To prevent the spread of the disease, symptomatic patients should wear protection masks and isolation should be kept as long as the patients are tested positive for noroviruses. Since especially vomiting is frequent in oncologic pediatric patients, a screening program for rapid detection of norovirus infections in this group of patients should be discussed.

Topic: Gastrointestinal infections

Paper number: 1167

Presentation type requested: Poster Presentation

INTESTINAL TUBERCULOSIS ACCOMPANIED BY A SUBCAPSULAR LIVER ABSCESS IN 13 YEARS OLD GIRL

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BACKGROUND AND AIMS: Abdominal tuberculosis may occur after the ingestion of tubercle bacilli or as a part of generalized lymphohematogenous spread, but tuberculous enteritis has always been uncommon. **METHODS:** The author reports a case of intestinal tuberculosis accompanied by a subcapsular liver abscess in a 13 years old girl. **RESULTS:** A 13 year old girl complained of right lower quadrant pain for 2 days. Her past history and family history was unremarkable. Direct and rebound tenderness of the RUQ and RLQ area was noted. Her chest PA revealed an ill defined nodular opacity in the left middle lung field. Tuberculous lymphadenitis and peritonitis was suggested on her abdominal CT scan with a subcapsular abscess in the liver. Barium enema showed luminal narrowing with shallow ulceration and mucosal nodularity which was compatible with tuberculosis. Lymph node biopsy of her neck showed chronic granulomatous inflammation with caseous necrosis. She was treated with isoniazid, rifampin, pyrazinamide and ethambutol. The mesenteric lymphadenopathy and subcapsular liver abscess was improved upon her follow up CT scan after 2 weeks of medication. She is being followed up at the out patient department and has no complications while on tuberculosis medication. **CONCLUSIONS:** Although it is rare abdominal tuberculosis should always be ruled out as a possible cause of abdominal pain in areas with a high incidence of tuberculosis.

Topic: Gastrointestinal infections

Paper number: 1169

Presentation type requested: Oral Presentation

A NOVEL METHOD FOR THE COLLECTION OF FAECAL SAMPLES FROM PRE-SCHOOL CHILDREN: "THE NAPPY STUDY"

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BACKGROUND AND AIMS: The collection of faecal samples for laboratory investigation has traditionally involved "spoon and pot" methods. To improve recruitment into a primary care study of intestinal infectious disease (IID) in young children we utilised the collection of whole nappies as a simple and effective method of faecal sample collection. **METHODS:** The parent/carer of children presenting with IID was provided with a patient information leaflet, and specimen bag and form. The next "dirty" nappy was sealed inside the specimen bag, the specimen form completed, and returned to the surgery at the earliest convenience.

A teddy bear was provided to the recruited child as a token of appreciation for participating in the study. After checking the form, staff packaged the nappy into an inner sealed plastic container, and then into an outer cardboard container. Nappies were collected from each practice as required by a pre-arranged courier service. **RESULTS:** 583 nappies were collected over 18 months (2006/2007). Compared to previous studies employing traditional collection methods, the number of nappies collected was favourable. In general, there were no reported problems and the quality of samples was good. Pathogenic organisms were found in 62% of cases. **CONCLUSIONS:** This proved to be an effective method of collected faecal samples that was acceptable to the parents/carers and practice staff involved. We believe this methodology could be rolled out in developing countries to facilitate structured surveillance schemes.

Topic: Gastrointestinal infections

Paper number: 1170

Presentation type requested: Oral Presentation

STRUCTURED SURVEILLANCE OF INFECTIOUS INTESTINAL DISEASE IN PRE-SCHOOL CHILDREN IN THE COMMUNITY: "THE NAPPY STUDY"

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BACKGROUND AND AIMS: We performed a structured surveillance study to estimate the incidence and determine causes of infectious intestinal disease (IID) in children aged <5 years presenting to community-based general practitioners (GPs) with symptoms suggestive of enteric infection. **METHODS:** During a 12 month period, nappies were collected from children presenting with symptoms suggestive of IID in a network of 65 GPs located across England. Real-time PCR was used to detect a range of enteric pathogens including viruses, bacteria and parasites. Genotyping was performed on all rotavirus and norovirus isolates. **RESULTS:** 583 nappies were collected from 554 children; a pathogen was detected in 361 (62%) specimens. 43 practices provided numbers of clinical cases of IID recorded; 1584 new episodes of IID were recorded in a population averaging 19,774; the specimen capture rates was 28%.

Clinical incidence of IID peaked during March and April. Norovirus (24.5%), rotavirus (19.0%) and sapovirus (12.7%) were most commonly detected. Mixed infections were observed in 68 specimens (11.7%) with a combination of norovirus and another pathogen most common (8.4%).

Strain characterisation disclosed G1P[8] (65.8%), G4P[4] (8.1%) and G9P[8] (8.1%) as the most common rotavirus genotypes, similar to the UK national distribution. GII-3 (42.9%) and GII-4 (39.7%) were the most common norovirus genotypes; this was significantly different ($p < 0.005$) to the UK national distribution. **CONCLUSIONS:** This study has demonstrated a significant burden of IID in children <5 years in the community. Norovirus and rotavirus were most commonly detected and the burden of disease associated with these viruses can be calculated for the population.

Topic: Gastrointestinal infections

Paper number: 1177

Presentation type requested: Poster Presentation

**SIMULTANEOUS WATERBORNE OUTBREAK OF ROTAVIRUS AND NOROVIRUS DUE TO SEWAGE
CONTAMINATION OF DRINKING WATER OF A COMMUNITY**

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BACKGROUND AND AIMS: Drinking water in Nokia, a community of 30 000 inhabitants, was accidentally contaminated on 28 Nov 2007 with sewage water, and thousands of people were massively exposed. We studied the clinical picture and aetiology of resulting cases of acute gastroenteritis (AGE) in children seen at the Tampere University Hospital.

METHODS: **RESULTS:** 115 children from the contaminated area were seen in the Emergency Room (ER) of the Hospital because of AGE, and 35 severe cases were admitted. The mean severity score was 16.4 on a 20-point scale indicating unusually severe disease.

We collected stool samples from 27 of the 35 hospitalized children and from 21 children seen at the ER. Altogether, 48 samples were studied for human caliciviruses (HuCV) and rotaviruses (RV) using RT-PCR. The amount of double- or triple-infections was remarkable: in 18 cases (38%) both HuCV and RV were positive, and in 9 of the 18 was also *C.jejuni* present. HuCVs were found in 30 (63%) cases; of these 11 were sapoviruses (8 different genotypes), and 19 noroviruses (NV). Seven of NVs were of identical GII-4 genotype and 7 were of different genotypes. All but one of the RVs were of identical G1 genotype. No difference could be seen in severity of diarrhoea, vomiting or fever between the viral pathogens. Bloody diarrhoea occurred only when *C.jejuni* was found. **CONCLUSIONS:** A massive simultaneous transmission of RV and HuCV caused severe AGE in exposed children, regardless of the type of virus. From a paediatric perspective, this was mainly an outbreak of gastroenteritis viruses.

Topic: Gastrointestinal infections

Paper number: 1180

Presentation type requested: Poster Presentation

DETECTION AND IDENTIFICATION OF BACTERIAL PATHOGENS BY POLYMERASE CHAIN REACTION AND CONVENTIONAL TECHNIQUES IN CHILDHOOD ACUTE GASTROENTERITIS IN NOVOSIBIRSK, 2005-2007.

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BACKGROUND AND AIMS: Knowledge of the etiology of acute diarrhea is relevant for planning diarrheal disease control strategies. The etiology of diarrhea are viruses, parasites and bacterial pathogens. Worldwide, the most common bacterial pathogens that cause this disease are: Salmonella spp, Shigella spp, Campylobacter spp, diarrheagenic E.coli, Listeria monocytogenes, Vibrio cholerae, and Yersinia enterocolitica. **METHODS:** In the present study both bacterial and PCR techniques were used to analyse stool samples collected from children < 3 years of age with acute diarrhea for the presence of the common bacterial enteropathogens. 1984 stool samples were tested from July 2005 through July 2007 for identifying bacterial pathogens. **RESULTS:** Shigella species were found in 14 cases (0.7%) by PCR and in 5 cases (0.25%) by conventional techniques. Salmonella spp were found in 38 cases (1.9% of diarrheal cases) by PCR and in 20 cases by traditional methods. Campylobacter coli/jejuni was the most common cause of acute bacterial gastroenteritis (5.1%), followed by Salmonella spp (1.9%), Shigella spp (0.7%). The diarrheagenic E.coli was detected in 1% of patients. In the present study no Listeria monocytogenes, Vibrio cholerae, Yersinia enterocolitica strains were found. **CONCLUSIONS:** The results highlight that PCR is more rapid, sensitive and specific than conventional culture methods. It was shown, the bacterial pathogens are not significantly linked to diarrhea in young children in Novosibirsk as bacterial enteropathogens were detected from 7.7% of patients. Moreover, Campylobacter, which is opportunistic pathogenic bacterium, was the most often detected bacterial pathogen by PCR, while it was not screened for routinely in the Novosibirsk earlier.

Topic: Gastrointestinal infections

Paper number: 1183

Presentation type requested: Poster Presentation

SPORADIC CASES OF NOROVIRUS INFECTION AMONG YOUNG CHILDREN IN NOVOSIBIRSK, RUSSIA, 2005-2007

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BACKGROUND AND AIMS: Noroviruses (NoVs), belonging to the Caliciviridae family, are recognized worldwide as the most common cause of acute nonbacterial gastroenteritis outbreaks, especially among children. Here we report the prevalence of norovirus infections in sporadic cases of the disease among young children hospitalized for acute gastroenteritis in the Novosibirsk Children City Hospital.

METHODS: Between March 2005 and January 2008, a total of 2803 fecal samples from children <3 with clinical symptoms of gastroenteritis were tested by RT-PCR for norovirus GI and GII and some other diarrheic bacterial and viral pathogens.

RESULTS: 503 stool samples (17,9%) were found to contain NoVs. Most cases of norovirus infection were found in children < 1.5 years (431 samples, 93%). The most of the examined samples with NoVs were positive to for norovirus GII (451, 16,1%); 52 (1,9%) samples were positive for norovirus GI, and 13 (0,5%) both NoV GI and GII. No seasonality of norovirus infection was found in 2005, but a seasonality of sporadic cases linked to the winter months (Dec. 2006 & Jan 2007) was registered later. In 51,3% of norovirus positive cases the virus was found as the sole agent; mixed infections were also detected with diarrheic viral pathogens such as rotavirus, astrovirus and adenovirus (29,8%) and with bacterial pathogens such as shigella, campilobacter and salmonella (23,3%). Moreover, in 3,2% of cases norovirus, other gastroviruses and bacteria were found simultaneously.

CONCLUSIONS: It was shown, that NoVs are the second most common pathogen among young children in Novosibirsk followed by rotaviruses.

Topic: Gastrointestinal infections

Paper number: 1188

Presentation type requested: Poster Presentation

MOLECULAR EPIDEMIOLOGY OF HUMAN ASTROVIRUS INFECTIONS AMONG YOUNG CHILDREN IN NOVOSIBIRSK, RUSSIA, 2005-2007

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BACKGROUND AND AIMS: Astroviruses can be one of the causes of gastroenteritis among young children. The prevalence rate of astrovirus in gastroenteritis varies from 3 to 12%, depending on place and season. Earlier, surveillance of the astroviruses were performed in European part of Russia. Here we report the results of work started in Novosibirsk since 2005.
METHODS: To evaluate the occurrence of astroviruses among young children, 2781 clinical samples from the children <3, hospitalized for acute gastroenteritis in the Novosibirsk Children City Hospital „–3 from March 2005 till December 2007, were tested by RT-PCR for astrovirus, rotavirus, norovirus and adenovirus.
RESULTS: 187 stool samples (less than 7%) were found to contain astroviruses. The number of cases varies from 0% in April and May 2005 up to 22.8% in December 2006. In 35.3% of astrovirus positive cases the virus was found as the sole agent; mixed infections were also detected with diarrhoeic viral pathogens (51.5%), and with bacterial pathogens (7.3%). Moreover, astrovirus with both gastroviruses and bacteria was detected in 5.9% cases. 83.8% of all cases of detected astrovirus diarrhea occurred in children <1 year old. In addition, several tens of samples were genotyped by sequencing. The most common genotype circulating in Novosibirsk was found to be HAstV-4.
CONCLUSIONS: Sporadic cases of Astrovirus infection occur less than 10% of all cases. No seasonality was found and the prevalence number of cases occurs at the age < 1.5 years old.

Topic: Gastrointestinal infections

Paper number: 1189

Presentation type requested: Poster Presentation

NOROVIRUSES - THE MOST COMMON CAUSE OF ACUTE GASTROENTERITIS IN THE PEDIATRIC POPULATION IN AUSTRIA TODAY?

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BACKGROUND AND AIMS: Formerly Rotavirus was believed to be the most common cause of severe acute watery diarrhea in children under 5 years of age. In recent years an already well known viral pathogen, the Norovirus, can be diagnosed in faeces as a causative agent of acute gastroenteritis in the pediatric population. In this study faecal specimens and medical records from hospitalized children were retrospectively analyzed to assess the role of Norovirus, Rotavirus and Adenovirus as enteropathogenic viruses in the pediatric population in Austria. **METHODS:** The study was performed during two time periods (December 2004 - February 2005; February 2006 - March 2007). A total of 1030 stool samples from children admitted to the Pediatric Clinic, Medical University of Graz, with diagnosis of acute gastroenteritis were screened for Rotavirus, Norovirus and Adenovirus. A subset of 167 children was further analyzed based on clinical data. **RESULTS:** The majority of the children tested were under 5 years old (85.6%). The male to female ratio was 1:0.88. NV were detected in 345 cases (33.5%; 95% CI 30.7-36.4%), RV in 204 cases (19.8%; 95% CI 17.5-22.4%) and AV in 133 cases (12.9%; 95% CI 11.0-15.1%). **CONCLUSIONS:** According to our results Norovirus is the most common cause of gastroenteritis followed by Rotavirus and Adenovirus in children under 5 years of age for the time period investigated.

Topic: Gastrointestinal infections

Paper number: 1191

Presentation type requested: Poster Presentation

DIARRHEA ETIOLOGY IN THE CHILDREN'S HOSPITAL INFECTIOUS DEPARTMENT IN NOVOSIBIRSK, RUSSIA

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Src Vector, Russia

BACKGROUND AND AIMS: The etiologies of acute gastroenteritis in Western Siberia children have not been studied accurately until recent years, while defining etiology of acute diarrhea is critical to disease therapy and prevention. Our objectives were to provide data to clinicians and guide them in the rational use of appropriate techniques for detection of etiologic agents of acute gastroenteritis.

METHODS: This study assessed the molecular epidemiologic characteristics of acute gastroenteritis in hospitalized children <5 years of age during the period from 2005 till 2008. The identification of rotaviruses A and C, noroviruses 1 and 2 genotype and astrovirus was performed by RT-PCR, bacterial pathogens were identified by PCR and conventional methods.

RESULTS: A total of 2820 fecal specimens were analyzed/ and 52.9% (1492/2820) samples were positive: 60.3% (900/1492) carried rotavirus, whereas noroviruses were detected in 34.5% (515/1492), astrovirus in 12.5% (186/1492). Bacterial pathogens (Campilobacteria spp, Salmonella spp, Shigella spp and EIEC) were found in 7.7% samples. 16.8% (251/1492) specimens contained at least two enteropathogenic agents. Acute viral gastroenteritis most frequently occurred in children 6-17 months of age.

CONCLUSIONS: Viral diarrhea occurred year-round, but rotavirus infection was predominant from November through May. Norovirus and astrovirus infections showed no obvious seasonal predilection. Astrovirus was mostly found in mixt infections. Enteropathogenic bacteria are not significantly linked to diarrhea in children <5 years in Novosibirsk.

Topic: Gastrointestinal infections

Paper number: 1192

Presentation type requested: Poster Presentation

ROTAVIRUS VACCINATION COVERAGES IN SPANISH CHILDREN: AREA 8 OF MADRID

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BACKGROUND AND AIMS: Rotavirus is the main etiologic agent which produces severe gastroenteritis in infants on a world wide scale. In Spain, oral vaccines such as Rotateq® and Rotarix®, are available and has been authorised by the European Medicines Agency in March of 2006. The aim of this study is to provide estimates of rotavirus vaccination coverage in infant in Area Sanitaria 8 of Madrid.
METHODS: Preliminary descriptive transversal study of the infant population of Area 8 of the Madrid Region given birth between 01/Sept/2006 and 20/Oct/2007. Data were obtained from two community surveillance systems (OMI-AP and CIBELES).
RESULTS: Of 14,677 children <2 years old in Area 8 of the Madrid Region, 7,748 kids (<1 years old), were prone to receive vaccine. The vaccination coverage was 15.6 %. There were significant differences between districts of Area 8 (Alcorcón 22.2%; Móstoles 9.5%; Rural Area 17.4%). We obtained information of nationality of 70% obtained from CIBELES, in which 11.3% are foreigners. The coverage of the foreign population was 4.6%. There were not differences in the coverage of foreigners in terms of districts (Alcorcón 7.2%, Móstoles 2.8% y Rural Area 3.2%). We not found significant differences by sex. The vaccination coverage during the period of 01/Sept/2006 to 30/Apr/2007 was 11.3% and 21.6 % during the period of 01/May/2007 to 20/Oct/2007.
CONCLUSIONS: In our study, the information of rotavirus vaccination coverage was low, though we observe an increase as for its utilization, in spite of not being financed by the National Health System of Spain.

Topic: Gastrointestinal infections

Paper number: 1208

Presentation type requested: Poster Presentation

STUDY OF ROTAVIRUS DISEASE BURDEN IN CHILDREN UP TO 5 YEARS OLD IN UKRAINE

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BACKGROUND AND AIMS: Morbidity of infectious diarrhea in children occupies 3-rd position among infections in Ukraine, after acute respiratory diseases and chicken pox. According to official statistics of Ministry of Health rotavirus infection makes up not more than 5% among all causes of acute diarrhea. The aim of present search is to study rotavirus disease burden in children under 5 years in Ukraine.
METHODS: Hospital-based sentinel surveillance (Kiev, Odessa) was held since December 2006. Feces were tested by ELISA for rotavirus antigen in Ukraine and by genotyping – PCR in London (UK).
RESULTS: Number of hospitalized children with diarrhea was 1336 in Odessa and 767 in Kiev. Number of children, from whom samples were taken was 869 (65%) and 697 (90.9%) – respectively. Proportion of diarrheas caused by rotavirus was 34.9% and 49.3% respectively. Season fluctuations – increased incidence in cold seasons (>70% in March, Kiev) - was marked. G4 and G1 rotavirus genotype was found most of all. Vomiting, dehydration of 2-nd degree and fever were significantly more frequent in rotavirus-positive diarrhea than in rotavirus-negative one. 3 children died (Odessa), one of them – from rotavirus diarrhea.
CONCLUSIONS: Data indicating high incidence and severity of rotavirus diarrhea in children younger than 5 years in Ukraine, prevalence of strains which can be prevented by modern vaccines, in such children, are the background for considering about application of vaccination against this infection in Ukraine.

Acknowledgements: Study was technically and financially supported by European branch of World Health Organization (WHO/EURO), PATH and CDC.

Topic: Gastrointestinal infections

Paper number: 1212

Presentation type requested: Oral Presentation

**LACTOBACILLUS RHAMNOSUS IN THE PREVENTION OF ANTIBIOTIC-ASSOCIATED DIARRHEA IN CHILDREN:
A RANDOMIZED CONTROLLED TRIAL**

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BACKGROUND AND AIMS: Probiotics may prevent antibiotic-associated diarrhea (AAD). However, only a very few probiotic strains have been tested for their efficacy. Our study was designed to determine the efficacy of Lactobacillus rhamnosus PEN, OXY, & E/N (Lakcid®) for the prevention of antibiotic-associated diarrhea (AAD) in children requiring antibiotic treatment for common infectious diseases. **METHODS:** 237 children (age: 3 mo to 14 years) with otitis media, and/or respiratory tract infection, and/or urinary tract infection, and/or skin infection were enrolled in a double-blind randomized controlled trial in which they received standard antibiotic treatment plus 2x10⁹ colony forming units of L rhamnosus (Lakcid®) (n=119), or a placebo (n=118) orally twice daily for the duration of antibiotic treatment. **RESULTS:** Patients receiving probiotics had lower rate of any diarrhea (3 or more loose or watery stools/day for at least 48 hours occurring during or up to 2 weeks after the antibiotic therapy) than those receiving placebo (relative risk, RR 0.48, 95% confidence interval, CI 0.23 to 0.99; number needed to treat 12, 95% CI 6 to 926). However, there was no difference in the risk of AAD (diarrhea caused by Clostridium difficile or otherwise unexplained diarrhea) between the groups (RR 0.38, 95% CI 0.1 to 1.3). Both probiotics and placebo were well tolerated, and no adverse events were reported. **CONCLUSIONS:** The administration of the Lactobacillus rhamnosus (Lakcid®), as dosed in this study, reduces the risk of any diarrhea, but not of AAD, in children receiving antimicrobial therapy.

Topic: Gastrointestinal infections

Paper number: 1227

Presentation type requested: Oral Presentation

TEMPORAL FLUCTUATION OF ROTAVIRUS GENOTYPES IN THE CENTRAL REGION OF PORTUGAL: 2006-2007

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BACKGROUND AND AIMS: During the epidemic season of 2006, we conducted a study in children with acute gastroenteritis (AGE) at the Emergency Service (ES): Rotavirus (RV) was identified in 45% of the cases. G9P[8] was isolated in 90%, G1P[8] in 4,3% and G3P[8] in 3,8%.

The aim was to analyse the incidence of RV AGE, and the strain diversity in 2007 and compare it with the results from the previous season.**METHODS:** Prospective study, from January to June, including children under 3 years of age, attending the ES with the diagnosis of AGE. A subset of the RV- positive samples was genotyped. **RESULTS:** A total of 641 children with AGE were seen. A rapid RV diagnostic test was performed in 467 (73%); 170 (36,4%) were positive. The peak of incidence was between February (47%) and April (60%). Genotyping was performed in 163 samples: G9 was found in 54 (36,7%), G1 in 42 (28,6%), G2 in 42 (27%) and G3 in 39 (26,5%). The association with P[8] was largely predominant (64,6%). G2 appeared associated mainly with P[4] (26,5%). **CONCLUSIONS:** RV was a major cause of AGE. Overall, a more diverse population of RV genotypes was observed in 2007 compared to 2006. Although G9P[8] was still the predominant genotype, the incidence of infections with G9P[8] decreased significantly in 2007, whilst G1P[8] increased significantly and G2P[4] strains, undetected during 2006, were found in a significant proportion of samples. Our results confirm that different RVs co-circulate in the same geographic region and seasonal variation in the strain distribution is found.

Topic: Gastrointestinal infections

Paper number: 1254

Presentation type requested: Poster Presentation

HELICOBACTER PYLORI INFECTION IN CHILDREN: HOW LONG DO WE NEED TO TREAT?

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BACKGROUND AND AIMS: The therapy most commonly recommended for Helicobacter pylori (Hp) infection in children is a triple therapy with a proton pump inhibitor (PPI), amoxicilline (A) and clarithromycin (C) for 7-14 days. A longer duration of treatment might be more effective. **METHODS:** The files of children with Hp infection during the period 2000-2007 were retrospectively reviewed. In the period 2000-2003 a 1 week schedule was used (group A), whereas in the period 2003-2007 a 2 week schedule was used (group B). **RESULTS:** 38 children (mean age 11 y [4-16 y]), were included in the study. At endoscopy, 30 children had a nodular antral gastritis, 2 antral erosions and 6 a normal examination. A chronic superficial gastritis was seen in 37 patients. In 35 of them, Hp was directly visualised and immunohistochemically confirmed. Culture was positive in 24/30 patients. Antibiotic sensitivity, tested in all 24 patients, revealed 1 C-resistant, 2 metronidazole-resistant, 1 C and metronidazole resistant, and no A resistant Hp strains. Group A consisted of 10 children and group B of 26 children. Follow-up data by 13C-Urea-Breath-Test (UBT) one month after treatment were available for 8 children of group A and 17 children of group B. In group A, 7/10 children whereas in group B, only 2/26 children still had a positive UBT. **CONCLUSIONS:** A larger eradication rate of Hp was obtained in the group treated for 2 weeks than in the group treated for 1 week (88% versus 12,5%). In our study population there was less resistance to antibiotics compared to data in literature.

Topic: Gastrointestinal infections

Paper number: 1263

Presentation type requested: Poster Presentation

CYTOTOXIN PRODUCING KLEBSIELLA OXYTOCA CAUSING RIGHT-SIDED COLITIS WITHOUT PREVIOUS ANTIBIOTIC THERAPY IN A 3-YEAR OLD PATIENT

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BACKGROUND AND AIMS: Klebsiella oxytoca is a novel intestinal pathogen causing antibiotic-associated hemorrhagic colitis negative for Clostridium difficile. K. oxytoca-induced colitis is usually segmental and located in the right colon. K. oxytoca inducing colitis usually produces a cytotoxin as verified by a cell culture assay. In adults, K. oxytoca-induced colitis is usually preceded by previous antibiotic therapy especially with penicillins. **METHODS:** Bacterial culture, PCR, in-vitro cytotoxin assay using Hep2 cell-culture. **RESULTS:** A 3-year-old boy was admitted with fever, right-sided abdominal pain and diarrhea. Two days earlier he was treated in a primary care clinic for diarrhea and abdominal pain without any history of previous antibiotic treatment. Ultrasound showed distended small bowel in the right lower abdomen, and a lesion in the ileo-cecal region suspicious for abscess formation. Laboratory results showed WBC and CRP elevation. Stool analysis showed occult blood, but was repeatedly negative for C. difficile, Campylobacter, Salmonella, Yersinia, EHEC, rota- and adenovirus. Suspecting perforated appendicitis with abscess formation appendectomy was performed. A retro-cecal appendix without macroscopic or histological changes was removed, but no abscess was found. However, the terminal ileum and cecum makroscopically showed signs of acute inflammation. The patient showed prolonged diarrhea, which gradually resolved. Subsequent stool analysis yielded cytotoxin producing K. oxytoca. **CONCLUSIONS:** We report a pediatric case of right-sided colitis caused by cytotoxin producing K. oxytoca infection. In contrast to previous reports in adults, there was no history of preceding antibiotic treatment before onset of colitis. Cytotoxin-producing K. oxytoca should be considered as a causative agent in acute colitis in children.

Topic: Gastrointestinal infections

Paper number: 1276

Presentation type requested: Poster Presentation

ROTAVIRUS-ASSOCIATED HOSPITAL ADMISSIONS IN THE PROVINCE OF FERRARA, ITALY

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BACKGROUND AND AIMS: Rotaviruses (RV) are the leading cause of acute gastroenteritis (GE) in children worldwide. The purpose of this study was to collect updated epidemiologic data useful to understand the burden of this disease in our country and to evaluate the impact of vaccination. **METHODS:** The study was conducted in the province of Ferrara, reviewing hospital discharge forms with specific codes for RVGE in children 0-14 years of age in the period 2003-2005. Data were stratified according to age, gender, concomitant disease, length of stay, month and year of discharge. **RESULTS:** A total of 4,238 children <14 years were admitted to the Pediatric Departments; 151 patients were diagnosed with RVGE. The average annual rate of hospitalization for RVGE in the province of Ferrara was 1.54 and 2.9/1,000 children <14 years and <5 years of age, respectively. A clear spring peak was observed. Most hospitalizations (72%) involved children aged <60 months (average age: 22.4 months). The average length of hospital-stay was about 5 days. **CONCLUSIONS:** The annual hospitalization rate attributable to RV in our province is comparable to estimates in other European countries.

Considering the Emilia Romagna regional DRG reimbursement codes referable to RV disease, the estimated costs of our 151 cases, in the period 2003-2005, ranges from €214,033 to €341,832. The results of this study contribute to the awareness of RV epidemiology in Italy and suggest that routine rotavirus vaccination could significantly reduce the clinical burden and the associated costs for the public health care system, society and families.

Topic: Gastrointestinal infections

Paper number: 1278

Presentation type requested: Poster Presentation

DISTRIBUTION OF HUMAN ROTAVIRUS G AND P TYPES IN TWO GROUPS OF CHILDREN HOSPITALIZED IN NORTHERN AND SOUTHERN ITALY.

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BACKGROUND AND AIMS: In recent years, genotyping by RT-PCR has provided valuable information about the diversity of rotavirus (RV) circulating throughout the world.

The purpose of the present study was to determine the G/P types of RV circulating in two groups of children hospitalized in Northern (Ferrara) and Southern (Gallipoli-LE) Italy.

METHODS: During the period from January to May 2007, a total of 33 rotavirus positive stool samples were collected from children with diarrhoea admitted to “Sacro Cuore di Gesù” Hospital, Gallipoli (LE) and also to Pediatric Department, “Arcispedale S. Anna” Hospital, Ferrara. All the specimens, stored at -20°C, were genotyped for VP7 (G-type) and VP4 (P-type) gene by reverse transcription (RT) and multiplex PCR using different type specific primers, as described in Iturriza-Gómara et al (2004).
RESULTS: The 87.9% of stool samples was detected positive by RT-multiplex PCR. Totally, three G-type (G1, G2 and G9), four P-types (P[8], P[4], P[9] and P[10]), six G/P combinations (G1P[8], G2P[8], G9P[8], G2P[4], G1P[9] and G2P[10]), and three co-infections (G1+G2, G2+G9 and G1+G9) were identified.

G2 was the predominant G-type both in Gallipoli (56.25%) and in Ferrara (38.46%), while P[8] was the prevalent P-type (50% and 53.85% respectively). The most common G/P combination in Gallipoli was G2P[4] (50%) while in Ferrara was G1P[8] (33.35%).

CONCLUSIONS: The use of molecular methods for RV characterization has allowed the detection of predominant and emerging genotypes.

Moreover, this study highlighted the different distribution of human group A rotavirus serotypes between Northern and Southern Italy.

Topic: Gastrointestinal infections

Paper number: 1298

Presentation type requested: Poster Presentation

CLINICAL STUDY OF ACUTE DIARRHEA CAUSED BY ROTAVIRUS IN CHILDREN LESS THAN 1 YEAR OF AGE

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BACKGROUND AND AIMS: Acute gastroenteritis is one of the most common causes of hospital admission and rotavirus is the most important pathogen of diarrheal illness in small children. In this study, we aimed to determine the incidence and clinical manifestations of rotavirus infection among small children in a two-year period (January 2006 - December 2007).

METHODS: Children less than 1 year of age hospitalized for diarrhea or developed diarrhea during hospitalization were enrolled in the study. Direct microscopic examination and ELISA assay for rotavirus was performed on stool samples.

RESULTS: 149 patients (77 female, 72 male) with acute gastroenteritis were registered for the study group. Rotavirus accounted for 38.9 % of all cases. Comparing the clinical manifestations, no significant difference was found between children with rotavirus and non-rotavirus infection for acute watery diarrhea, fever, nausea and vomiting, predominant lymphocytes and moderate or severe dehydration. The length of diarrhea and hospital stay were significantly longer in children with rotavirus infection ($p < 0.001$). Among the all children with gastroenteritis, hospital admissions were mostly seen in orderly in March (17.1 %), April (13.2 %) and May (13.2 %). But the children with rotavirus infection were mostly admitted in February (25 %), January (17.5 %) and March (15 %).

CONCLUSIONS: Rotavirus infection is an important cause of hospitalization in small children with acute diarrhea. It had its peak incidence in February. Clinical characteristics of rotavirus diarrheal illness were not significantly different from those due to other etiologies. The risk of nosocomial rotavirus infection increased with the length of hospital stay.

Topic: Gastrointestinal infections

Paper number: 1337

Presentation type requested: Poster Presentation

UNUSUAL PATTERNS OF SALMONELLA GASTROENTERITIS

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BACKGROUND AND AIMS: Salmonella acute gastroenteritis (AG) may present some essential features as prolonged fever, biphasic course and positivity of Widal test. Aim of the study was to describe our experience with these features.
METHODS: During the period 1983-2005, 14.675 children with AG were hospitalized in our Department. In 4.668 (32%) a pathogen of AG was identified. Salmonella enteritidis was isolated in 2.123 (45%). Data from the medical charts of these patients were extracted and analyzed.
RESULTS: Biphasic course of the fever was observed in 230/2123 (10,8%) patients, with a mean age of 3 years (2 m-13 y). The fever free interval between the two phases was approximately 2,4 days. Mean duration of fever at the 1st phase was 3,7 days, while at the 2nd phase was 2 days. There was significant difference in relation to the presence of bloody stool: 28,2% at the 1st phase and 2,8% at the 2nd. Twelve out of 2123 (0,5%) patients had a prolonged fever course of 15 to 20 days. In 467/604 patients (78%) the Widal test was positive. Antibiotic therapy had no influence on the course of biphasic or prolonged fever. In all cases, the outcome was good.
CONCLUSIONS: S. enteritidis sometimes can result in severe systemic manifestations, common for S. typhi but not for non-typhoid Salmonella. The above patterns of Salmonella AG are not described in classic textbooks of infectious diseases. Physician must be aware about these manifestations of S. enteritidis which do not need an antibiotic coverage.

Topic: Gastrointestinal infections

Paper number: 1384

Presentation type requested: Poster Presentation

IS THERE A CHANGE IN RESISTANCE PATTERN OF HELICOBACTER PYLORI IN THE BRUSSELS AREA?

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<pre>BACKGROUND AND AIMS:</pre>Helicobacter pylori (HP) is one of the most studied pathogens during the last decades. Knowledge about this germ is still increasing; treatment is still a challenge. <pre>METHODS:</pre>Cultures were collected from 1998 through 2006. <pre>RESULTS:</pre>The number of HP positive patients did not change over time. Susceptibility to claritromycin, metronidazol and ampicillin were analysed in 258 HP strains isolated during the period 1998 through 2006 from 250 children. No resistance to ampicillin was detected. Overall, resistance to clarithromycin and metronidazole was 35% and 23 %, respectively. There was no significant change in resistance over the years. Although resistance to metronidazole is lower, the risk of being resistant to both antibiotics in this group is higher, 52% vs 32%(p0.0048).

<pre>CONCLUSIONS:</pre>Over the past eight years, no significant difference in resistance pattern observed. Because resistance to metronidazole is lower than to claritromycin, and half of the HPs that are resistant to metronidazole are also resistant to claritormycin, a combination of ampicillin and metronidazole is recommended.

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Topic: Gastrointestinal infections

Paper number: 1415

Presentation type requested: Oral Presentation

EPIDEMIOLOGY AND DISEASE BURDEN OF ROTAVIRUS GASTROENTERITIS AMONG YOUNG CHILDREN IN TAIWAN

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BACKGROUND AND AIMS: Rotavirus (RV) was the leading cause of diarrhea among hospitalized children in Taiwan. This study was conducted to evaluate the epidemiology and disease burden of rotavirus gastroenteritis in Taiwan, and to predict if the vaccine will be cost-effectiveness and cost-benefit in Taiwan. **METHODS:** From January 2005 to June 2006, a prospective RV surveillance study in middle Taiwan had enrolled subjects at 4 hospitals and 3 outpatient clinics(OP). Eligible children were aged <5 years and presented to study sites with acute gastroenteritis occurring within 72 hours. Stool samples were collected at enrollment. RV was detected using a commercial EIA assay; RV+ samples were G-typed by PCR. **RESULTS:** A total of 1,230 subjects were enrolled, 1129 contributed stool samples. The mean age of enrolled subjects was 23 months. The overall rotavirus positive rate was 35.5%. The RV prevalence varied by season and medical care setting. The RV positive rate was 45.9% for hospitalized children, and 13.9% among outpatient setting. Among 354 RV(+) RT-PCR typable: G1(38.7%), G2(11.9%), G3(15.0%), G5(0.3%), G9(33.9%), 61.1% were non-G1. The mean reimbursed national insurance payment reported for RV+ subjects was hospital USD 560; OPD USD 29.5. Their mean length of stay in hospital was 5.6 days (n=350). **CONCLUSIONS:** In Taiwan, RV was associated with a substantial proportion of pediatric medical visits for acute gastroenteritis and over half of RV genotypes were non-G1. RV was a costly disease among hospitalized subjects in Taiwan study sites. Rotavirus vaccine had the potential to reduce the burden of RV gastroenteritis.

Topic: Gastrointestinal infections

Paper number: 1421

Presentation type requested: Poster Presentation

ROTAVIRUS GENOTYPING - A ONE YEAR STUDY IN LISBON

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BACKGROUND AND AIMS: Rotavirus gastroenteritis (R-AGE) is one of the most common childhood infections in the world. Even with good economic and sanitary conditions it has not been possible to change global incidence and burden. The introduction of rotavirus vaccines has given new hope in disease control but it is important to maintain surveillance on regional genotypes circulation. To date there is little information about rotavirus genotypes prevalence in Portugal.**METHODS:** This study was conducted prospectively in 3 Paediatric Hospitals. Faecal samples were obtained during a one year period, in children under 5 years, who were hospitalised with the diagnosis of AGE. After rotavirus identification in stools, the positive samples were genotyped. The non-determined samples were sequenced. All positive samples were accompanied by a demographic and epidemiological enquire.**RESULTS:** The study included 83 hospitalised children. There was a predominance of male sex (53%), 63 had both vomiting and diarrhoea. The genotyping revealed: G2P4 (53%), G9P8 (25%), G1P8 (10%), G3P8 (8%) and G4P8 (4%). All children recovered well and mean duration of hospitalisation was 2,1 days (8 hours-7 days).**CONCLUSIONS:** This was the first Portuguese report of rotavirus AGE in hospitalised children during a 12 month period. Although we found all the principal genotypes, the majority were G2P4 and G9P8.

Previous Portuguese reports of R-AGE have covered only a few months period. The genotyping results were distinct so it is desirable to maintain a regular surveillance, in different regions, in order to know the real genotype prevalence in Portuguese children.

Topic: Gastrointestinal infections

Paper number: 1450

Presentation type requested: Poster Presentation

THE ROLE OF ELECTRON MICROSCOPY IN DIAGNOSTICS OF ACUTE GASTROENTERITIS IN HOSPITALIZED CHILDREN

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BACKGROUND AND AIMS: Diarrheal diseases belong to the most common infectious diseases in children in the world. The aim of our study was to show the main portion of viral gastroenteritis in children under five years in the Czech Republic as well as refer to importance of electron microscopy in their diagnostics. **METHODS:** University Hospital Bulovka has the largest collection of hospitalized children with diarrhea. During the last two years 1004 children under five years hospitalized in our department were involved to our retrospective study. The average age was 1,9 years, the average duration of hospitalisation was 6 days. Bacterial etiology was examined by stool culture, viral etiology by latex agglutination and electron microscopy. **RESULTS:** From the collection of 1004 children was complete examined only 577 children. Etiologic agent was found in 532 children (92,2%) respectively etiology wasn't prove in 45 children (7,8%). Bacterial gastroenteritis were only 18 (3,1%), bacterium and viruses evoked 100 diseases (17,3%) and finally viral diarrheal diseases was in 414 cases (71,8%). The most frequent viruses were rotaviruses in 243 children (58,7%), caliciviruses in 35 cases (8,5%), further adenoviruses evoked 23 gastroenteritis (5,6%), koronaviruses 10 (2,4%) and astroviruses 8 (1,9%). The large group was formed by dual viral infectiones in 95 cases (22,9%), the most frequent were rotaviruses together with caliciviruses in 40 cases (42,1%). **CONCLUSIONS:** Viruses are the most common etiologic agents of diarrhea in small children in the Czech Republic. Electron microscopy is indispensable metod especially for diagnostics koronaviruses, astroviruses, caliciviruses and dual infection.

Topic: Gastrointestinal infections

Paper number: 1454

Presentation type requested: Poster Presentation

INCIDENCE AND RISK FACTORS OF ACUTE GASTROENTERITIS

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BACKGROUND AND AIMS: Acute gastroenteritis incidence is dependent to epidemiological factors and differ from society to geography. The aim of our study was to evaluate the incidence and risk factors of acute gastroenteritis during the year .
METHODS: We evaluated 1500 children with acute gastroenteritis applied to our out patient clinic between Nov2006-Nov2007. Families were asked to fill a questioner form including 11 items. According to the income we divided family in 3 groups: low income (under 320 euro), medium (320-550euro) and high (over 550euro).
RESULTS: We evaluated 689 (45,9 %) girls and 811 (54.1%) boys aged between 6 month-14years. The average prevalence of rotavirus enteritis was 17.8% with high incidence during winter; Jan:24.5%, Feb:27.9%, Mar:22.6%. No differences were found between the genders. The age of children with rotavirus enteritis was lower 2.7 ± 2.1 years than those with bacterial acute gastroenteritis, 6.7 ± 3.2 years. The prevalence of bacterial enteritis was 9.4% with high incidence during the summer, peak on the Aug:14.7%. The microorganisms isolated in stool culture were: E.coli (42%), Shigella (6.5%), Salmonella (3.2%). Major risk factors were the low socio-economic status and the overcrowded families.

CONCLUSIONS: According to our epidemiological data we concluded that the high prevalence of viral gastroenteritis is during the winter and children in overcrowded families are at high risk. Preventive medicine and education of families should be done.

Topic: Gastrointestinal infections

Paper number: 1462

Presentation type requested: Poster Presentation

VIRAL AGENTS OF ACUTE GASTROENTERITIS IN CHILDREN HOSPITALIZED IN NORTHEASTERN POLAND

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BACKGROUND AND AIMS: Viruses are recognized to be the major cause of acute gastroenteritis in young children throughout the world. The aim of the study was to identify and describe the most common viral agents of diarrhea. **METHODS:** For this study, a total of 165 specimens were collected over a 12-month period from children up to 5 years of age presenting with gastroenteritis to our department between 1 February, 2005 and 31 January, 2006. Stool samples were analyzed by ELISA techniques in order to identify antigens of rotaviruses, adenoviruses, astroviruses and noroviruses. On children hospitalized, we have investigated: sex, age and the seasonal distribution of the disease. **RESULTS:** Of the 165 studied children, rotaviruses were identified in 57 (35%), followed by noroviruses (17 children – 10%), adenoviruses (16 children - 10%) and astroviruses (6 children – 4%). In 69 (49%) stool specimens, pathogen was not identified. The lowest median age of patients was recorded in children infected with rotaviruses (22 months), whereas the highest – with astroviruses (53 months). As referring to sex of hospitalized children, males were the most common in all groups, excluding noroviruses (where females composed 71%). The frequency of viral gastroenteritis was significantly higher in fall season. **CONCLUSIONS:** Rotaviruses are first as a cause of viral gastroenteritis. Noroviruses and adenoviruses play also an important role and are the second agents in the studied population.

Topic: Gastrointestinal infections

Paper number: 1481

Presentation type requested: Poster Presentation

NOTYPHOIDAL SALMONELLA INFECTIONS IN CHILDREN

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BACKGROUND AND AIMS: Salmonella infections represent approximately 10% of all reported intestinal infections in Slovenia, Salmonella Enteritidis being the most common bacterial intestinal pathogen in children. Bacteremia and focal extraintestinal infections occur infrequently. Multiresistant nontyphoidal Salmonella strains have emerged worldwide and cause increased morbidity and mortality.

METHODS: We retrospectively reviewed clinical records of children with nontyphoidal Salmonella infections hospitalised at our Department of Infectious Diseases at University Medical Centre Ljubljana from January 2006 to August 2007.

RESULTS: 115 children (52 girls, 63 boys) \leq 15 years (42,6% < 5 years) with nontyphoidal Salmonella infections were admitted, all due to gastroenteritis and dehydration. 68 children (59%) had bloody stools. 110 (95,6 %) children had fever above 38 °C, in 11 children (9,5%) lasting more than 5 days. 9 (7,8%) children presented with febrile convulsions and 3 had aseptic meningitis. Bacteremia was found in 5 (4,4%) children, none of them had extraintestinal focal infection. 4 blood cultures were positive for Salmonella enteritidis and 1 for S. Paratyphi B variatio Java. The most frequent serotypes of Salmonella isolated from stool samples were Salmonella Enteritidis (88,7%) and Salmonella Typhimurium (3,5%). All isolated nontyphoidal Salmonella strains were susceptible to 3rd generation cephalosporins and all other tested antibiotics. 11 children received antibiotic treatment with ceftriaxone (9,5%).

CONCLUSIONS: All children in our study had a mild course of the disease. No antimicrobial resistance was detected in nontyphoidal Salmonella isolates.

Topic: HIV/AIDS

Paper number: 1019

Presentation type requested: Poster Presentation

THE CEREBRAL TOXOPLASMOSIS EVOLUTION IN AN HIV POSITIVE TEENAGER

C. Marcas, S. Rugina, C. Cambrea



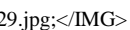
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BACKGROUND AND AIMS: Cerebral toxoplasmosis for an HIV positive teenager which became complicated because of a cerebral hemorrhage because an adverse reaction to antiparasitical therapy. **METHODS:** A teenager admitted in February-April 2005. **RESULTS:** The onset was sudden: high fever, third degree coma, right side paralysis. Several diseases were taken into consideration: cerebral toxoplasmosis, cerebral lymphomas or a tuberculoma. A cerebral RMI was done which confirmed the cerebral toxoplasmosis diagnosis. (Fig 1) The immunologic profile of HIV infection showed CD4=22 and the viral load to 614,000. The patient had been receiving antiretroviral treatment Kaletra+Combivir for 4 years. A treatment was started with Azitromicin+Daraprim. The evolution in the following 10 days was favourable the patient became conscious. The convulsions and the confusing states reappeared. Then the number of placket-46000/mmc. A new imagistic investigation was performed, it displayed a cerebral hemorrhage. A new therapeutically reevaluation of the patient is done, the Daraprim is eliminated considered to produce thrombocytopenia.

The evolution was good. ARV treatment and antiphlastic treatment led to good results: the hemiplegia reduced and the image on the RMI was diminished, with traces of bleeding. (Fig. 2)

The patient remained with neurological after-effects, motor dysphasia.

CONCLUSIONS: The Daraprim needs monitoring, it can lead to hemorrhage which worsens the disease evolution.

Topic: HIV/AIDS

Paper number: 1023

Presentation type requested: Poster Presentation

ASPECTS OF PALLIATIVE CARE OF THE HIV PATIENTS IN THE HAART ERA

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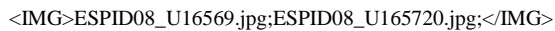
BACKGROUND AND AIMS: During the last 10 years, a decrease of the HIV mortality rate was noticed, along with the increase of the long-term survival of the HIV patients. Objectives: the proof of the increasing unpainful symptoms prevalence. 2. The treatment of the pain by using opioids using the OMS scale of analgesic.

3. Two cases: the first with neuropathic pain; the second - malignancies and depression.

METHODS: 20 patients were taken care referred to the palliative care department.

When evaluating the pain a VAS (visual analog scale) was used. **RESULTS:** Case presentation 1: The patient admitted for headache, lower limbs pain and received treatment with K+DDI+d4T (Fig 1). The pain from the lower limbs was considered to be a neuropathic pain determined by DDI administration, so DDI was replaced with 3TC. For neuropathic pain Gabapentin was administered. Case presentation 2: The 16-year old patient with HIV-AIDS infection stage C3; he interrupted the treatment for 1 year; when admitted in the department the patient presented a 9 VAS pain. (Fig 2) He refused all treatment. Morphine was administered.

CONCLUSIONS: The increase of prevalence, especially in an advanced stage of the disease, which, the same as the pain are neglected and discontinually treated.



Topic: HIV/AIDS

Paper number: 1041

Presentation type requested: Oral Presentation

.METABOLIC AND ENDOCRINOLOGIC DISORDERS IN PERINATALLY HUMAN IMMUNODEFICIENCY VIRUS TYPE 1-INFECTED CHILDREN.

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BACKGROUND AND AIMS: Several endocrinologic abnormalities have been documented in HIV-infected children related to opportunistic infections, antiretroviral therapy (ART) and the virus itself. Lipid, carbohydrate and calcium metabolism disturbances, hypothyroidism, hypocortisolism, impaired growth and delayed puberty have been previously described. **METHODS:** to determine metabolic and endocrinologic abnormalities in a population of 41 perinatally HIV type 1-Infected children to assess relationship with demographic, immunological, virological and therapeutic parameters. **Methods:** Descriptive Cross-Sectional Study, performing biochemical and hormonal analysis, anthropometrical measurements and imaging studies. All data were analyzed using SPSS V13.0 (SPSS, Inc., Chicago, IL). **RESULTS:** 41 patients (41.5% males). Median age: 12 years (range 1-19), 73.2% Caucasian. 56% patients fulfilled AIDS criteria. Median duration of ART: 9 years (1-15); median of regimens per patient: 5. 55.6% had previously received NRTI monotherapy and 63.9% dual therapy. PI have been used in 97.2% and NNRTI in 83.3%. 12.2% were naive to ART. Viral load was undetectable in 48.8%, 200-10.000 copies/ml in 24.4% and > 10.000 in 26.8%. Median CD4 count was 30.8% (1.5-50.7).

Metabolic and endocrinologic disorders: 46.3% presented lipodystrophy, 14.6% bone disease (9.8% presenting hyperparathyroidism), 14.6% insulin resistance, 7.3% hypercholesterolemia and 19.5% impaired growth.

Immunological and virological parameters were associated with bone disease and impaired growth was commonest in patients receiving > 0.5 regimens/patient/year. No significant differences were observed related to demographic or therapeutic parameters.

CONCLUSIONS: prevention and early diagnosis of metabolic and endocrinologic disorders in HIV-infected children and an accurate definition of risk groups are indispensable. Performance of long term follow up studies is necessary.

Topic: HIV/AIDS

Paper number: 1043

Presentation type requested: Poster Presentation

**NON-INVASIVE MARKERS OF LIVER DAMAGE IN HUMAN IMMUNODEFICIENCY VIRUS / HEPATITIS C VIRUS
COINFECTED PEDIATRIC PATIENTS**

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BACKGROUND AND AIMS: Mother-to-child transmission is the predominant mode of Hepatitis C Virus (HCV) acquisition in children. Transmission rates are 8-40% for coinfecting women. Prevalence of HIV-HCV coinfection in children is not known. Liver damage related to HCV progresses more rapidly in coinfecting individuals. Treatment with ribavirin and a pegylated interferon is not standardized in pediatrics, therefore liver biopsy is not usually indicated. Non-invasive methods of liver damage may be useful in these patients. **METHODS:** to describe the use of non-invasive tools to assess fibrosis progression HIV-HCV coinfecting pediatric patients. Two different lab indexes (APRI and Forns) and fibroscan (in all but one) were performed. Results > 7.1 in fibroscan and APRI > 1.5 are suggestive of significant liver fibrosis. Values < 0.5 and 4.2 in APRI and Forns indexes respectively are useful to discard significant fibrosis. **RESULTS:** 5 coinfecting patients were analysed (13% of all HIV controlled patients). 4/5 were female. Median age was 14 years. All of them were in good clinical condition and in stable immunological situation. 4/5 were receiving HAART. 3 patients presented results suggestive of low grade fibrosis, meanwhile the other 2 showed signs of severe fibrosis in all tests. Good correlation was observed between the 3 tests in detecting and excluding significant liver fibrosis. **CONCLUSIONS:** both lab markers and fibroscan seem to be useful tools in monitoring liver damage in pediatric coinfecting patients, avoiding the use of liver biopsy, at least until the adulthood. Systematic studies should be performed to define their role in this population.

Topic: HIV/AIDS

Paper number: 1077

Presentation type requested: Poster Presentation

CYTOMEGALOVIRUS REACTIVATION IN A SEVERELY IMMUNOCOMPROMISED HIV-INFECTED PAEDIATRIC PATIENT TREATED WITH SUBCUTANEOUS INTERLEUKIN-2

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BACKGROUND AND AIMS: Several studies have demonstrated substantial expansion of CD4 T cells in HIV-infected patients treated with interleukin-2 (IL-2). None of these studies have included patients with other active infections; hence, the infection reactivation risk in patients receiving IL-2 remains unknown. **METHODS:** 14-year-old HIV-infected boy with AIDS-associated wasting syndrome, severe malnutrition and cytomegalovirus (CMV) disease. He was receiving treatment with boosted darunavir and etravirine, foscarnet and ganciclovir. The patient presented 228.000 CMV viral load and undetectable HIV viral load, but immunological restoration was never achieved. At that point, CD4 cell count was 6% (105 cells/mm³). Cyclic treatment with subcutaneous IL-2 was started. **RESULTS:** At the end of the first cycle, the patient presented capillary leak syndrome resulting in multiple organ failure and CMV reactivation in both the intestine and retina, requiring admission to the PICU. IL-2 therapy was definitely discontinued. In the following month, CMV viral load increased 27-fold. Intestinal CMV reactivation resulted in uncontrolled rectorrhagia that led to the patient's death 34 days after starting IL-2. HIV viral load remained undetectable and CD4 cell count exhibited a significant increase (258 cells/mm³).

Although drug-related toxicities are described as common in most clinical trials, these events are limited to the period of drug administration and resolve at the end of the cycle. CMV reactivation with the use of IL-2 has not been described in the literature.

CONCLUSIONS: Clinicians should be aware of the risk of serious late-onset adverse reactions and reactivation of concomitant infections in HIV patients with the use of IL-2, even if the subcutaneous route is employed.

Topic: HIV/AIDS

Paper number: 1100

Presentation type requested: Poster Presentation

CARDIAC INVOLVEMENT IN AIDS

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BACKGROUND AND AIMS: HIV infection is a global public health issue that is frequently associated with cardiovascular involvement. A great variety of cardiac disorders have been reported in HIV-infected patients: pericarditis, myocarditis, cardiomyopathies, endocarditis, cardiac involvement through malignancies, pulmonary hypertension, arrhythmias and thromboembolic disease. **METHODS:** These HIV-associated cardiovascular manifestations are often clinically occult or attributed incorrectly to other non-cardiac disease processes.

In general, these disorders are asymptomatic and often diagnosed in echocardiographic studies or autopsies.

RESULTS:

Pericardial involvement is the most common disorder. Pericardial effusions are asymptomatic and non-specific in a great proportion, but in some instances opportunistic infections or malignancies may lead to cardiac tamponade and are associated with an increased risk of mortality. The etiopathogenesis of myocarditis and cardiomyopathies is uncertain. There is controversy about the role of HIV as the primary etiologic agent. Opportunistic infections, cardiotoxic substances, nutritional deficiencies and autoimmune reactions have also been implicated as etiologic agents of myocardial damage.

CONCLUSIONS: A heightened awareness and routine screening for cardiovascular involvement in HIV-infected patients leads to earlier detection and the hope for a reduction in associated morbidity and mortality. Short-term prognosis worsens as clinical manifestations of heart failure appear. Valvular involvement usually presents as marantic or infectious endocarditis

Topic: HIV/AIDS

Paper number: 1102

Presentation type requested: Poster Presentation

MYOCARDIAL AND PERICARDIAL INVOLVEMENT IN HIV

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BACKGROUND AND AIMS: Cardiovascular disease has been well documented in patients with Human Immunodeficiency Virus infection, especially after the introduction of highly active antiretroviral therapy.

At present, HIV infection is one of the leading causes of acquired cardiovascular disease including heart failure. Some of the changes observed in these patients include left ventricular systolic dysfunction, dilated cardiomyopathy, congestive heart failure, myocarditis, lipodystrophy, dyslipidemia, insulin resistance, accelerated atherosclerosis including myocardial infarction, prothrombotic state, pericardial effusion, pulmonary hypertension, autonomic dysfunction, and malignancy.

METHODS: Standard measures for the prevention and treatment of congestive heart failure are recommended for HIV-infected patients. Afterload reduction with angiotensin-converting enzyme inhibitors may be indicated for patients with elevated afterload and preclinical LV dysfunction diagnosed by echocardiogram. **RESULTS:** Pericardial effusions are often seen in patients with advanced HIV infection. Asymptomatic effusions are most often nonspecific in nature, related to the proinflammatory milieu found in advanced AIDS. Nonspecific effusions are a marker of advanced disease and do not require exhaustive etiologic evaluation. In contrast, large or symptomatic effusions are often associated with infection or malignancy, and warrant thorough investigation and etiology-specific treatment. **CONCLUSIONS:** Heart abnormalities were common especially in children with symptomatic HIV disease and included sinus tachycardia, left ventricular systolic dysfunction and right ventricular dilatation. The detected heart abnormalities, except left ventricular systolic dysfunction, had non-specific clinical features.

Topic: HIV/AIDS

Paper number: 1162

Presentation type requested: Poster Presentation

HOSPITALIZATIONS OF HIV-INFECTED CHILDREN AND ADOLESCENTS IN SPAIN: ANALYSIS OF DATA FROM 2001-2005

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BACKGROUND AND AIMS: There is little published information on the impact of paediatric HIV/AIDS on hospitalizations or on the effects of highly active antiretroviral therapy on these rates. The aim of this study was to describe trends in hospital use by HIV-infected children and adolescents in Spain in the 5 years from 2001 to 2005. **METHODS:** Data from hospital surveillance system (CMBD) for all Spanish's hospital admissions in children and adolescents with a diagnosis of HIV-infection in accordance with the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM code: 042). Data on hospitalized patients were examined by sociodemographic and hospital characteristics. **RESULTS:** In 2005, there were an estimated 208 hospitalizations of HIV-infected children who were 18 years or younger, compared with 346 such hospitalizations in 2001 (a 60,1 % decrease). This decrease was more marked among children between 5-9 years (20,7% in 2005 versus 35,5% in 2001) than among adolescents. The inpatient fatality among HIV-infected children decreased from 2,9% in 2001 to 1,9% in 2005. The number of hospitalizations among HIV-infection children in 2005 decrease significantly compared with HIV-infection children in 2001 for: pneumonia, fungal infection, bacterial infection, or sepsis. **CONCLUSIONS:** A relative decreases in the number of hospitalizations among HIV- infection children since 2001 in Spain. This reflects the impact of a multidisciplinary approach designed to prevent child infection and comorbidity.

Topic: HIV/AIDS

Paper number: 1184

Presentation type requested: Poster Presentation

VERTICAL HIV TRANSMISSION PROPHYLAXIS IN POLAND.

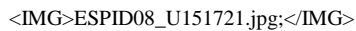
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BACKGROUND AND AIMS: Department of Children's Infectious Diseases, Medical university of Warsaw, is a referral center for HIV infected children in Poland. MTCT HIV transmission prophylaxis strategies were started in 1994, but pregnant women testing for HIV is not routinely offered. The risk of transmission in EU is ~1 – 2 %.

Aim: To compare effectiveness of different MTCT HIV prophylaxis strategies used in Poland.

METHODS: 192 children born to HIV(+) mothers received prophylaxis. Children were born between 01.09.1994 and 31.12.2007. ZDV monotherapy was used until 2006.
RESULTS: Table 1.
CONCLUSIONS: The effectiveness of combined antiretroviral prophylaxis regimens was as high as in other EU countries. Global risk was higher because of delaying of diagnosis and implementation of prophylaxis during last 4 weeks of pregnancy or only in child.



Topic: HIV/AIDS

Paper number: 1246

Presentation type requested: Oral Presentation

INTRAUTERINE HIV TRANSMISSION: THE LEICESTERSHIRE EXPERIENCE

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BACKGROUND AND AIMS: Perinatal and postnatal HIV mother-to-child transmission has dramatically decreased in non-breast-feeding populations following the introduction of antiretroviral treatment (ART) and other intrapartum interventions; intrauterine transmission, however, is increasing and its pathogenesis remains a challenge. We consider the extent of this problem and the possible risk factors. **METHODS:** We report a case of intrauterine transmission from a subtype-C HIV1-infected mother on long-term ART. **RESULTS:** A 38-year-old lady (gravida 5 para 3+1) gave birth to a 2.8kg girl by emergency caesarean section at 36+5 weeks because of spontaneous rupture of membranes of 3 1/2 hours duration. Since the diagnosis of HIV infection in Africa in 2003, she has allegedly been treated with ART which she discontinued in early pregnancy. At week 18, she was asymptomatic, with risk factors of viral load of 23307 HIV1-RNA copies/mL and low CD4 count of 17%; Kaletra and Kivexa were commenced with excellent response. By week 30, viral load fell to 49 copies/mL while CD4 count rose to 22%. However, at week 34, due to poor adherence to drug regimen, viral load rose to 48232 copies/mL and CD4 fell to 17.0%. Three weeks later, at birth, the baby tested HIV1-positive by PCR (proviral DNA and 738,000 RNA copies/mL).

This is the first such case in 181 HIV-pregnancies since 1999 in Leicestershire; poor control is implicated.

CONCLUSIONS: a) This case highlights the importance of controlling risk factors to prevent intrauterine transmission.

b) Infection with HIV-1 subtype-C is associated with increased intrauterine transmission.

c) The incidence in Leicestershire is much lower than previously reported elsewhere.

Topic: HIV/AIDS

Paper number: 1253

Presentation type requested: Poster Presentation

HIV INFECTION - TREATMENT BEYOND MEDICATION

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<pre>BACKGROUND AND AIMS:</pre>HIV infection affects children's life at every level, including family and social dynamics.

In this context, health care professionals are facing new challenges that go beyond classic hospital treatment.

Our objective was to promote Health and sharing of experiences of HIV infected children and their families, to form and inform families about the disease and its treatment, and promote communication between patients and the health team.

<pre>METHODS:</pre>Three meetings were organized with the following methodology: reunion with a group of parents for experience sharing and formation, playful activities for children and combined activities for everyone.

<pre>RESULTS:</pre>Twelve infected children participated in these meetings (ages 2 to 16 years), joined by their families/caregivers.

In the first one, in December 2005, a meeting was organized with the group of parents/caregivers to share experiences related to the disease.

The second encounter occurred in September 2006 in a biological park, where various activities were organized. Disclosure of HIV infection diagnosis to children was worked out. It ended with a lunch with all the participants and joint activities.

The third meeting, in April 2007, started with a puppet show. Then, the children performed plastic expression activities and parents/caregivers attended a reunion about antiretroviral treatment compliance. It ended with a snack and a hunt for Easter eggs in the Hospital facilities.

<pre>CONCLUSIONS:</pre>These meetings were evaluated in a positive way by children and their families. They allowed the health care team to have a more personalised knowledge about each situation, helping to develop adequate strategies for each child.

Topic: HIV/AIDS

Paper number: 1335

Presentation type requested: Poster Presentation

BOTULINUM TOXIN IN THE TREATMENT OF HIV-ASSOCIATED ENCEPHALOPATHY IN A VERTICALLY INFECTED CHILD: REPORT OF A CASE AND LITERATURE REVIEW.

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<pre>BACKGROUND AND AIMS:</pre>From early in the epidemic, central nervous system involvement has been recognized as a frequent and serious cause of morbidity among children with acquired immunodeficiency syndrome (AIDS). A wide range of neurologic manifestations has been in children with perinatally acquired disease. In the majority of the children with neurologic dysfunction, no identifiable process or specific pathogen other than HIV can be found. HIV-associated progressive encephalopathy can be stopped or even partially reversed by the use of HAART, but often leaving severe neurological sequelae.

Botulinum toxin is an exotoxin derived from *Clostridium botulinum* and it could be used as adjunctive therapy in the treatment of the spasticity associated with motor disorders, similar to those caused by HIV infection.

<pre>METHODS:</pre>We conducted a report of a case by medical records and literature review.**<pre>RESULTS:</pre>**We report a case of vertically HIV-infected child who early manifest with progressive encephalopathy, including motor deficits, especially involving the lower limbs.

She started HAART with 1 year old and obtained clinical and immunological responses, with undetectable viral loads and normal CD4 T-cell counts over time. Clinically, the patient remained stable, but maintaining motor deficits.

The treatment for motor sequelae includes botulinum toxin injections, started with three years old. No side effects were observed and she had improvement in her motor function.

<pre>CONCLUSIONS:</pre>In conclusion, this is the second report of botulinum toxin use in HIV-associated encephalopathy in the literature. It seems to be safe and effective in children with good immunological status, but more studies are necessary.

Topic: HIV/AIDS

Paper number: 1420

Presentation type requested: Poster Presentation

LONG-TERM FOLLOW-UP OF CHILDREN WITH PERINATAL HIV-1 INFECTION RECEIVING EARLY HAART

Italian Register For HIV Infec

Coordination Group: Elena Chiappini, Luisa Galli, Pier-Angelo Tovo, Clara Gabiano, Maurizio De Martino. Department Of Paediatrics, University Of Florence, Florence, And Department Of Paediatrics, University Of Turin, Turin, Italy

BACKGROUND AND AIMS: Accumulating data suggest that early antiretroviral therapy may be the optimal therapeutic strategy for children with perinatal HIV-1 infection. However, its impact on the long-term outcome remains uncertain.

METHODS: We report data from 40 Italian perinatally HIV-infected children, born between 1996 and 2006, who received highly active antiretroviral therapy (HAART) within the first 6 months of age, on a median age of 3.5 months (IQR:2.5-4.2), and followed-up for 5.6 years (median; IQR:4.2-7.6).

RESULTS: Twenty-one children were still on the first HAART regimen at last follow-up. In the remaining children the first regimen was discontinued, after a median period of 3.8 years (IQR:1.71-5.71), because of viral failure (8 cases), liver toxicity (1 case), therapy interruption (3 cases), or therapy simplification (7 cases). Thirty-nine children showed CD4+ T-lymphocytes >25% at last follow-up. Undetectable viral load was evidenced in 35 (87.5%) children. Data from early treated children were compared with data from 115 children receiving deferred treatment, born in the same period, and followed-up from birth (median follow-up period:6.9 years; IQR:2.8-9.5). Early treated children displayed significantly lower viral load until 6 years of age. Higher median CD4+ T-lymphocyte percentages were evidenced until 4 years of age but not considering older age classes. Thirty-nine (33.9%) children receiving deferred therapy versus 0/40 early treated children were in clinical category C at last follow-up (p<0.0001).

CONCLUSIONS: While waiting for long term results of ongoing targeted randomized trials, our observational study provides data suggesting benefits from early HAART in HIV-infected children

Topic: HIV/AIDS

Paper number: 1435

Presentation type requested: Poster Presentation

CORRELATION BETWEEN CD4/CD8 CELL COUNTS RATIO WITH OROPHARYNGEAL CANDIDIASIS: A PROSPECTIVE STUDY.

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BACKGROUND AND AIMS: The acquired immunodeficiency syndrome (AIDS) is characterized by the gradual loss of immune system functions. The hallmark of this process is a marked depression in cellular immune response and often leads to several opportunistic infections including fungal infections. The most common manifestations of candidal infections in HIV (Human Immunodeficiency Virus) infected person are oropharyngeal candidiasis, an invasive life threatening disease ranges from 12% to 93% of cases and showing parallel decline in CD4 cell count and hence the CD4/CD8-T cell ratio. Candidiasis is often preceded by increased colonization of the mouth, vagina. The present work was done to know correlation between oropharyngeal candidiasis and CD4/ CD8 ratio. **METHODS:** 18 HIV positive patients at their different stages of HIV infection and 10 HIV negative healthy individuals were enrolled at voluntary counselling and testing centre (VCTC) King George medical university (KGMU), Lucknow, India. Study specimen includes scraping swab from common flora of oropharynx and direct KOH mount preparation, Gram staining and culture was done on Sabouraud dextrose agar medium. Apart from this, standard methods, histopathology and serotyping was performed to established the strain of *Candida albicans*. The CD4/CD8-T cell estimation of each individual was measured by FACS (Fluorescent activated cell sorting) machine. **RESULTS:** We noticed that Oropharyngeal candidiasis due to *Candida albicans* was present at all stages of HIV infection even at CD4 count more than 500 cells/mm³. **CONCLUSIONS:** We concluded that not the CD4 but CD4/CD8 ratios are more important to assess the oropharyngeal candidiasis.

Topic: Hospital infections

Paper number: 1011

Presentation type requested: Poster Presentation

BENEFIT OF INITIALLY HIGH TEICOPLANIN DOSAGE WITH DRUG MONITORING IN CHILDREN UNDERGOING OPEN HEART SURGERY

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BACKGROUND AND AIMS: Coagulase negative staphylococci have become an important role for infections after open heart surgery in children by increasing resistance to antibacterial agents. In case of teicoplanin (TC) an increased thickness of the bacterial membrane leads to resistance in low concentrations of TC. The aim of this study was to observe two different TC dosages within 48 hrs after surgery.

METHODS: 12 bed interdisciplinary PICU, University hospital;

Patients: 140 patients after open heart surgery; prospective, controlled study.

Group A received 10mg TC/kg bodyweight before and after as well as 24 hrs after surgery, whereas group B received 15 mg TC /kg bodyweight in the same period. Drug levels and routine laboratory parameters were investigated daily. The aim in both groups was a TC serum concentration of 20 – 30 mg/l by adapting dosage after 24 hours.

RESULTS: In group A TC concentrations were 11,4±0,7 and 20.2±0,8mg/l after 24 and 48 hours, in group B 19,5±1,0 and 24,8±1,8 mg/l (p<0,01 both), respectively. CRP Values were in group A 87±4,9mg/l and 111±7,9mg/l and in group B 61±5,54mg/l and 86±10,2mg/l (p<0,01 and p<0,05), respectively. There were no differences in PRISM III score (1,3±2,4; 1,0±1,9), urine production or creatinine in both groups.

CONCLUSIONS: To achieve drug levels of TC higher than 20 mg/l during the first 48 hours after surgery, initially the higher dosage of 15 mg/kg bodyweight had to be administered. The high TC dose was well tolerated and was associated with significantly lower CRP in the first two days.

Topic: Hospital infections

Paper number: 1012

Presentation type requested: Poster Presentation

PROSPECTIVE ONE-YEAR SURVEILLANCE OF NOSOCOMIAL INFECTIONS AT THE UNIVERSITY CHILDREN'S HOSPITAL BASEL, SWITZERLAND

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BACKGROUND AND AIMS: Few data are available concerning nosocomial infections (NI) among children. Most studies analysing NI have focused on a specific hospital environment, age group, specific pathogens, and/or surveyed only data during the time of hospitalisation. We aimed to obtain information on NI, particularly viral NI, during and post hospital discharge throughout childhood by use of a prospective observational study design. **METHODS:** Prospective surveillance (years 2004 and 2005) of patient and disease data during and post hospitalisation on three general medical wards with the help of standardised questionnaires (in hospital and follow-up). Included were all patients hospitalised for more than 24 hours and discharged from one of these three wards. NI were defined using CDC recommendations. **RESULTS:** 1560 patients with 9106 patient hospitalisation days (phd) meeting inclusion criteria were discharged from the three wards during the 2 year study period. Mean hospitalisation duration was 5 days. A total of 94 NI were acquired by 92 patients (rate: 6%; incidence: 10 per 1000 phd): 35 patients acquired a total of 37 NI during hospital stay and further 57 patients had NI early after hospital discharge. The infant ward (mainly children <12 months: n=448; rate 10%, 15 per 1000 phd) had acquired significantly more NI ($p<0.05$) than patients from other wards (mainly children > 12 months: n=1112; rate 4%, 8 per 1000 phd). **CONCLUSIONS:** A respectable proportion of NI became evident only after hospital discharge (61%). A significant part of NI is neglected if surveillance focuses only on the hospitalisation period, as many NI manifest post discharge.

Topic: Hospital infections

Paper number: 1020

Presentation type requested: Poster Presentation

FACTORS AFFECTING THE LENGTH OF HOSPITAL STAY OF CHILDREN WITH ALL, ADMITTED FOR NEUTROPENIA OR INFECTION

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BACKGROUND AND AIMS: ALL is the most common Hematologic malignancy in children. These patients are admitted in hospital most frequently for chemotherapy, and infection. Few studies have assessed the predictive factors for the length of stay for children with ALL. **METHODS:** In this cross-sectional study, the records of episodes of admission of children with ALL admitted for Neutropenia or infection from July 2005 to Jan 2007 were reviewed retrospectively. Episodes of admission for chemotherapy or those resulting in death were excluded. During the study, demographic and health-related data of 80 episodes of admission from 52 patients were recorded. We performed the analysis by SPSS v.13. **RESULTS:** The mean LOS was 8.82 (SD=6.55) day. Mean age of patients in admission was 98.23 (SD=41.50) month. Reasons for admission were neutropenia (58.8%), Pneumonia (16.3%), Sepsis (13.8%), Chicken pox (8.8%) and meningitis (2.5%). LOS was longer for neutropenia (9.34, SD=7.86) and shorter for chicken pox (6.25, SD=1.73).

Hospital ward, diagnosis and antibiotic response were statistically related to LOS (p values: .002, .002, .009 respectively). In a multiple linear regression, no statistically or clinically significant model was performed.

The distance between Tehran and the patients' living towns was not statistically related to LOS (Power: 0.76).

CONCLUSIONS: Although some studies showed that LOS in children with ALL admitted for infection or neutropenia could be predicted by some factors in admission, our results showed few factors related to it.

Because of the well support of NGOs, socioeconomic factors such as income, insurance and their living town no longer affect the LOS.

Topic: Hospital infections

Paper number: 1150

Presentation type requested: Poster Presentation

ENTEROCOCCUS FAECIUM MENINGITIS IN A 30 WEEK PRETERM TWIN

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<pre>BACKGROUND AND AIMS:</pre>Vancomycin resistant enterococcus faecium meningitis is a rare cause of meningitis in preterm babies.**<pre>METHODS:</pre>**Case report: Fourth pregnancy of a 36 year old mother. 1 miscarriage, 1 preterm baby with duodenal atresia, 1 healthy daughter. Caesarian section was performed at gestational age of 30+1 weeks as a result of twin to twin transfusion. Weight 1080g, Apgar 1/9, 5/9, 10/10.

Nasal CPAP was applied for 2 days. Full oral feeding was achieved at day 9.

In week 3 late onset sepsis with nasal CPAP for 4 days and imipenem therapy for 7 days. At this time skin smear shows Staphylococcus epidermidis. 2 weeks latency with full oral feeding and no respiratory problems. Until week 5 cranial ultrasound examinations are without pathology.

<pre>RESULTS:</pre>In week 6 severe late onset sepsis. Bloodculture sterile, lumbal tapping shows bacterial infection and enterococcus faecium. The first three days teicoplanin therapy was applied according to skin smears on our ward. The clinical state, CRP, leucopenia and liquor do not improve. Liquor culture shows sensibility for vancomycin, teicoplanin and linezolid. Teicoplanin therapy was changed to linezolid. Under linezolid therapy for 3 weeks the clinical state, CRP and leucopenia improve continuously.

Severe periventriculare leucenzephalomaly on both sides is the result of this severe meningitis.

<pre>CONCLUSIONS:</pre>Linezolid is a sufficient therapy as described in some reports of successful linezolid therapy with vancomycin resistant enterococcus meningitis in children and adults. Especially in preterm babies this meningitis might cause severe destruction of the brain with very poor neurological outcome.

Topic: Hospital infections

Paper number: 1293

Presentation type requested: Oral Presentation

NOSOCOMIAL PATHOGEN IN NICU

S.H. Micheal

The Org. Of Teaching Hospitals And Institutes

<pre>BACKGROUND

AND

AIMS:</pre>attatched<pre>METHODS:</pre>attatched<pre>RESULTS:</pre>attatched<pre>CONCLUSIONS:</pre>attatched

Topic: Hospital infections

Paper number: 1305

Presentation type requested: Oral Presentation

BACTERAEMIA IN TWO NEONATAL INTENSIVE CARE UNITS: IMPLICATIONS FOR RISK ADJUSTED MONITORING OF HOSPITAL-ACQUIRED INFECTION

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BACKGROUND AND AIMS: Approximately 10% of babies admitted to neonatal intensive care units (NICUs) experience bacteraemia (blood stream infection). Monitoring of bacteraemia has triggered sharing of improved practices between NICUs resulting in substantial reductions in infection rates. To compare NICUs, infection rates must be risk adjusted to take into account differences in the vulnerability of babies and the intensity of invasive procedures. **METHODS:** Method: We compared rates of Coagulase-negative staphylococcal (CONS) and other bacteraemia (non-CONS) over 9 years for two London regional referral NICUs. **RESULTS:** Results: Proportions of babies experiencing bacteraemia differed widely (15% versus 9%) but when rates of infection, taking into account days of stay, were calculated, the difference was not statistically significant. Overall rates per 1000 baby days were similar between NICUs for CONS (NICU 1: 6.3, 95% confidence interval 5.66-6.94 versus NICU 2: 5.7, 95% CI 4.87- 6.57) and for non-CONS (NICU 1: 2.4, 95%CI 2.00-2.79, versus NICU 2: 2.1, 95% CI 1.62-2.65). Rates of both CONS and non-CONS bacteraemia differed between NHS levels of care (special care, high dependency, intensive care), but at each level of care, did not differ with statistical significance between NICUs. **CONCLUSIONS:** Conclusions: Adjustment for duration of exposure is a minimum requirement for meaningful comparisons of bacteraemia incidence between NICUs. In addition, level of care provides a measure of infection risk throughout NICU stay. Incidence of bacteraemia per days of stay at each NHS level of care offers a risk adjusted measure which is standardised and could be used for monitoring and benchmarking throughout the NHS.

Topic: Hospital infections

Paper number: 1395

Presentation type requested: Oral Presentation

IMPACT OF AN ANTIMICROBIAL CONTROL POLICY CONDUCTED IN THE PAEDIATRIC AREA OF A TERTIARY SPANISH HOSPITAL

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BACKGROUND AND AIMS: Nowadays exists a growing concern about microbial resistance and antimicrobial hospital costs. Control programs are widely used to decrease drug expenditures.

The aim of the study is to evaluate the economic effects of an antimicrobial control policy in order to adequate the use of broad-spectrum antibiotics, anti fungal and antiviral drugs in a 200-bed university children's hospital, where NICU, ICU, cancer and HPT or organ solid transplant patients occupy 38% of the beds.

METHODS: In December 2005, an active surveillance with paediatric infectious disease specialists and microbiologists, was established. Requirement for prior approval of selected drugs was not instituted. A retrospective assessment of antimicrobial expenditures costs two years before (2004, 2005) and two years after (2006, 2007) was performed. **RESULTS:** Total expenditures for antimicrobial agents decreased by 14,89%, from 2,262,361.66 euros during 2004-2005 to 1,925,324 during 2006-2007. Reduction costs were observed in 337,037 euros. No differences in admission and complexity rates, mean hospital stay, complications and mortality rates, were detected. **CONCLUSIONS:** Antimicrobial control program in our pediatric institution decreased hospital expenditures without compromising patient outcomes or length of hospital stays. From the economic point of view, the intervention represented a saving of 168, 518 €/year, on average

Topic: Hospital infections

Paper number: 1475

Presentation type requested: Poster Presentation

NOSOCOMIAL INFECTIONS IN INTESIVE CARE UNITS,CLINIC OF PEDIATRIC

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<pre>BACKGROUND AND AIMS:</pre>The risk for nosocomial infections is higher in patients hospitalized in the Intesive Care Units than in patients staying in other wards.The higher incidence rates of nosocomial infections in the Intesive Care Units explained by the fact that the patients in the Intesive Care Units have more severe underlying disease and are exposed to the invasive diagnostic and terapeutical procedures.

The unreasonable use of antibiotics leads to the selection of multiresistant agents,which have been increasingly recorded as the nosocomial infections causative agents.

The aim of this study was to investigate the characteristics of nosocomiale infections in the Intesive Care Units,Clinic of Pediatric in the period year 2007.<pre>METHODS:</pre>The study of incidence was performed in accordance with the metodology of the Centres for Diseases and Prevention(Atlanta-USA).

In the microbiological laboratory were tested using standard methods.

<pre>RESULTS:</pre>In the period 2007 year any infections in the patients hospitalized in the Intesive Care Units were registered.The results both from the direct contacts with the medical perssonel and from medical documentation were analysed.

The incidence rates of nosocomial infections pateints ranged from 2,1 to 14,2 and the incidence rates of infections were 0 to 22,1 per 1 000 patients days.

Out of the total number of nosocomial infections,urinary infections accounted for 30,2%,blood infections for 33,0%,surgical site infections for 34,4% and pneumoinfections 0,9%.

<pre>CONCLUSIONS:</pre>The most frequent cause of nosocomial urinary infections was E.coli,of nosocomial seosis is coagulase negative stapholococci and of surgical site infections is Staphilococcus aureus.

Topic: Immunology

Paper number: 1037

Presentation type requested: Poster Presentation

NEUTROPHIL ACTIVATION AFTER SEPSIS INDUCED INFLAMMATION

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BACKGROUND AND AIMS: Sepsis is known to be a common cause of morbidity and mortality in critically ill children. The inflammatory response to critical illness involves the activation of leukocytes and other inflammatory cells leading to a massive production of reactive oxygen species (ROS). The study was aimed to evaluate the involvement of ROS in sepsis pathogenesis and to assess the prognostic value of neutrophil activation. **METHODS:** The study comprised 37 patients (17 septic children and 20 controls). Respiratory burst of neutrophils as well as p55 and p75 TNF- α receptors expression using flow cytometry were evaluated twice. **RESULTS:** The decreased oxygen metabolism of neutrophils and increased TNF- α receptors expression were found on admission. ROS generation evidently augmented ($p < 0.05$) (median fluorescence intensity (MFI) after E. coli stimulation equalled 63,3 compared with the initial value 34,2) after sepsis therapy, whereas reduced expression of TNF- α receptors was observed. The oxygen metabolism of neutrophils was critically low in 4 patients who died of septic shock – MFI in those cases was 6,9 at sepsis diagnosis. Moreover, statistically lower values of oxidative burst ($p < 0.05$) were found at the time of diagnosis as compared to controls, while analogically TNF- α receptors expression was significantly higher. **CONCLUSIONS:** Our results revealed the involvement of ROS in the development of systemic inflammatory response in septic children. The evaluation of neutrophil activation allows for an assessment of the generalised inflammatory process activity and may be of clinical importance as an additional prognostic tool.

This study was supported with the Medical University's own grant No.502-11-598.

Topic: Immunology

Paper number: 1038

Presentation type requested: Poster Presentation

CYTOKINE INHIBITORS (STNFR I, STNFR II, IL-1 RA, IL-6 SR) AND ANTI-INFLAMMATORY CYTOKINES (IL-10, IL-13) IN SIRS IN SEPTIC CHILDREN

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BACKGROUND AND AIMS: Sepsis, clinically defined as the systemic inflammatory response syndrome (SIRS) secondary to infection, is a common complication in newborns undergoing intensive care and delayed diagnosis is associated with increased morbidity, mortality and cost in the ICU. This is a prospective clinical study focusing on immunological markers (cytokine related molecules and anti-inflammatory cytokines) following sepsis in newborns that may be of clinical importance.
METHODS: Forty patients (20 septic children and 20 controls) admitted in the Intensive Care Unit were included in our study. Serum sTNFR I, sTNFR II, IL-1 ra, IL-6 sR, IL-10, IL-13 concentrations were evaluated twice using ELISA.
RESULTS: Originally high blood serum concentrations of sTNFR I, sTNFR II, IL-1 ra, IL-6 sR, IL-10, IL-13 decreased gradually during therapy and the values on recovery were significantly lower than the initial levels (for all indices $p < 0.05$). Significantly higher levels of the studied markers at the time of diagnosis were observed as compared to controls for all indices ($p < 0.05$) except for IL-6 sR and IL-13 (NS). In the case of 5 children who died of septic shock, the levels of those markers were particularly high.
CONCLUSIONS: The results indicate the involvement of the studied markers in the pathogenesis of SIRS in septic children. Their monitoring allows for an evaluation of the generalised inflammatory response activity and may clinically support diagnostic and prognostic methods.

This study was supported with the Medical University's own grant No. 502-11-598.

Topic: Immunology

Paper number: 1065

Presentation type requested: Poster Presentation

CYTOKINE RESPONSES IN CORD BLOOD LEUKOCYTES PREDICT THE SEVERITY OF LATER RESPIRATORY SYNCYTIAL VIRUS INFECTION

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BACKGROUND AND AIMS: It has been claimed that an early respiratory syncytial virus (RSV) infection can induce asthma and recurrent wheezing. We addressed the question of whether infants contracting an early RSV infection differ from healthy children in their cytokine production pattern at birth. **METHODS:** In a prospective cohort study, cord blood samples were collected from 1084 newborns during autumn 2001. 47 of these infants contracted a virologically confirmed RSV infection before six months of age and 28 suffered from some other respiratory virus infection. Cord blood samples from 84 healthy children served as control specimens. Cytokine production of RSV, lipopolysaccharide (LPS) and bacteria-stimulated cord blood mononuclear cells were measured. The cytokine profiles of the healthy controls were taken as baseline normal responses for comparison between the groups by factor analysis. **RESULTS:** The combined unstimulated cytokine responses at birth did not differ between the patients and healthy controls, but the infants hospitalized for RSV infection had higher LPS-stimulated interleukin (IL)-6 and IL-8 responses than the RSV cases treated as outpatients ($P=0.005$) or the healthy controls ($P=0.02$). The hospitalized RSV patients showed lower IL-1 β , -2, -4, -5 and -10 responses than those treated as outpatients ($P=0.02$). High IL-6 and IL-8 responsiveness predicted a severe RSV infection (odds ratio 2.20; 95% confidence interval 1.17 to 4.14, $P=0.01$). **CONCLUSIONS:** The results suggest that natural differences in innate immunity predispose children to severe RSV infection rather than RSV infection modifying immune responses in childhood.

Topic: Immunology

Paper number: 1124

Presentation type requested: Poster Presentation

**REACTOGENICITY OF INFANT WHOLE CELL PERTUSSIS COMBINATION VACCINES COMPARED WITH
ACELLULAR PERTUSSIS VACCINES WITH OR WITHOUT SIMULTANEOUS PNEUMOCOCCAL VACCINES.**

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BACKGROUND AND AIMS: Safety surveillance of the Dutch National Vaccination Programme is routinely conducted at the National Institute for Public Health and the Environment. In addition to an enhanced passive safety surveillance we started a large questionnaire study enrolling approximately 53000 children.

We aimed at establishing more accurate frequency estimates of severe adverse events (prolonged crying, very high fever and collapse) comparing the incidence rates of two different pertussis vaccines that were used consecutively in the Dutch National Vaccination Programme with or without pneumococcal vaccine.

METHODS: Questionnaire study **RESULTS:** Parents returned 28796 questionnaires (response rate 54.3%), 48.6% in the whole cell pertussis vaccine group and 55.6% in the acellulair pertussis vaccine group including the group with the pneumococcal vaccine. Whole cell pertussis vaccine was significantly more reactive compared to acellulair pertussis vaccine regarding:

- prolonged crying for 3 hours or more after the first dose (1.5%; 95% CI 1.1-1.9 and 0.4%; 95% CI 0.2 -0.7, respectively)
- very high fever of 40.5°C or higher after the fourth dose (0.8% versus 0.2%; 95% CI 0.5-1.1 and 0.06-0.03, respectively).
- pallor after the first dose (18.3% versus 3.4%; 95% CI 17.2-19.5 and 95% CI 2.8-4.0)

Collapse occurred very rarely after the first dose in both vaccine groups.

Simultaneous immunisations with a conjugated pneumococcal vaccine didn't result in higher adverse event rates.

CONCLUSIONS: The whole cell pertussis vaccine shows a significantly higher reactivity regarding the adverse events analysed. While the addition of conjugated pneumococcal vaccine administered simultaneously to the acellulair pertussis vaccine didn't result in statistically increased rates of adverse events.

Topic: Immunology

Paper number: 1173

Presentation type requested: Oral Presentation

NATURAL IMMUNITY TO SALMONELLA ENTERICA SEROVAR TYPHI: SERO-EPIDEMIOLOGY OF TYPHOID FEVER IN KATHMANDU, NEPAL

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BACKGROUND AND AIMS: Typhoid fever affects 13 million people every year and is responsible for 200,000 deaths annually. Despite increasing evidence of the occurrence of this disease in young children in endemic countries, there are few data on the age specific sero-epidemiology of typhoid fever. We examined the acquisition of natural immunity to typhoid fever in urban Nepal. **METHODS:** Serum samples from 210 non-febrile, individuals attending the out-patient department at Patan Hospital in Kathmandu, Nepal were tested for bactericidal activity using a novel serum bactericidal assay for the detection of functional antibodies directed against Salmonella enterica serovar Typhi. Decomplemented test sera in Hanks balanced salt solution were mixed with Salmonella typhi and baby rabbit complement prior to plating on LB agar. Bacterial colonies were counted after overnight incubation and percentage survival estimated. **RESULTS:** Inverse median bactericidal activity was age dependent with titres of 256, 8, 8, 16, 128, 128 and 128 for newborns, infants aged 6 months to 2 years, children aged 2 to 5 years, 5 to 8 years, 8 to 15 years, and adults aged 15 to 55 years and 55 to 75 years respectively. Median bactericidal titres in childhood were significantly different from newborn and adult titres ($p < 0.0001$, 95% CI) by Kruskal Wallis one way ANOVA. **CONCLUSIONS:** Children under 8 years of age in typhoid endemic regions have low levels of bactericidal activity against Salmonella typhi as compared with adults. This corresponds to the high rates of disease at this age. Typhoid vaccine development should target immunisation in early childhood.

Topic: Immunology

Paper number: 1186

Presentation type requested: Poster Presentation

ROLE OF T LYMPHOCYTES MEDIATED IMMUNITY IN PREVENTING MOTHER-TO-CHILD-TRANSMISSION (MTCT) OF HEPATITIS C VIRUS (HCV) INFECTION

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BACKGROUND AND AIMS: MTCT of HCV is rare with no certain risk factors identified. Vertical infection could be the consequence of impaired immune response to the virus. Because T-lymphocytes represent the main effectors of host response to viral infections, we investigated T-cell specific response to HCV antigens in a cohort of HCV positive mothers and children. **METHODS:** 27 HCV seropositive (10 PCR-) and 29 children (5 infected). Blood samples collected at a single time point for all the mothers and 18 children (age 4-13 years), and every 3 months (birth-24 months) for 11 babies. The recombinant HCV antigens c200, more immunogenic in preliminary experiments, was used. HCV-specific T-cell reactivity was expressed as stimulation index (SI= cpm of stimulate cultures/cpm of unstimulated cultures) and SI > 2 was considered positive. **RESULTS:** The 17 PCR+ mothers and the 18 uninfected children with a single evaluation showed a SI < 2. Eight of the 10 HCV PCR- mothers had a SI > 2 (2/10 with SI < 2 were unresponders to tetanus). All the babies with serial evaluation showed a spike of SI. The 5 infected babies had a SI spike lower (max 3.8) and later (18-24 months), as compared with the group of uninfected babies (SI max 30; 3-9 months). **CONCLUSIONS:** T-cell response to HCV antigens of infected children is weak. Uninfected babies, as well as HCV PCR- mothers, show a more vigorous T-cell reactivity. T-cell mediated immunity is protective against the development of chronic hepatitis, and could exert a pivotal role also in preventing MTCT of HCV.

Topic: Immunology

Paper number: 1366

Presentation type requested: Oral Presentation

FIRST HEAD-TO-HEAD COMPARISON OF SKIN TESTING AND INTERFERON-GAMMA RELEASE ASSAYS IN CHILDREN WITH TUBERCULOSIS IN THE UK (IFNGRA)

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BACKGROUND AND AIMS: Many believe that the tuberculin-skin-test (TST) is a blunt tool for diagnosing MTB infection in children. The new UK Nice Guidelines for tuberculosis recommend the use of IFNGRA in TST positive children. However, there is no guidance on which assay to use and there is a paucity of data regarding the performance of these assays in children.

We assessed the performance of TST and IFNGRA in a UK paediatric cohort.

METHODS: Side-by-side comparison of the two commercially available IFNGRA (T-SpotTB and Quantiferon Gold QFG in tube) and the TST in children referred to our paediatric TB clinics in London. **RESULTS:** This study is ongoing. Data in 165 children with presumed active (n=64) or latent TB (n=101) show that both IFNGRA were highly concordant but differed significantly from the TST read-out. A significantly higher number of patients were treated for both active and latent TB than would have been indicated, if IFNGRA results had guided the decision making process (Table 1) **CONCLUSIONS:** Paediatricians who use IFNGRA should strive to combine data from their cohorts to gain a better understanding of the validity of these novel assays for use in paediatric practice, as we may be over-treating assumed MTB infection in UK children.

Supported by a Consumables Grant from ESPID



Topic: Immunology

Paper number: 1394

Presentation type requested: Poster Presentation

EXTREME INFLAMMATORY RESPONSE IN FULMINANT MENINGOCOCCAL SEPSIS

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BACKGROUND AND AIMS: Fulminant meningococcal sepsis (FMS) could be expected based on clinical score (eg APACHE) and laboratory test results. Despite effectiveness of antimicrobial therapy and intensive care the mortality remains about 40%. One of pathogenetical aspects of such fulminate course is probably a massive cytokine production at the beginning of the disease. We described a case of fatal course of FMS associated with extremely high cytokine and endotoxin levels.
METHODS: Cytokines were measured by BD CBA Assay using four color flow cytometry, endotoxin levels were analyzed with Lymulus assay.
RESULTS: 14-year-old girl hospitalized at the Department of Infectious Diseases, University Hospital Bulovka died in 9 hours after onset of symptoms on meningococcal sepsis. Her medical history was without important findings, she was immunized with one dose of polysaccharide meningococcal vaccine 8 years ago. APACHE score at admission was 25. She had extremely elevated serum levels of IL-10 (26,086 pg/ml), IL-6 (810,046 pg/ml), IL-8 (189,105 pg/ml) and endotoxin (125 EU/ml) whereas cortisol concentration demonstrated only moderate increase. Although she had no abnormalities in WBC count in CSF, high levels of IL-6 (178,574 pg/ml) and IL-8 (253,376 pg/ml) were detected in CSF analysis. *Neisseria meningitidis* was isolated from blood culture (phenotype B:22:P1,14 ST-1001, ST-18 complex).
CONCLUSIONS: Interestingly, described case of FMS was not associated only with high serum cytokine levels but also with elevated CSF concentrations which may indicate a role of proinflammatory cytokines in sepsis-related encephalopathy.

Topic: Immunology

Paper number: 1478

Presentation type requested: Poster Presentation

SCHÖNLEIN–HENOCH VASCULITIS WITHOUT DERMATOLOGICAL SIGNS?

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BACKGROUND AND AIMS: The peak prevalence of Schönlein-Henoch vasculitis is in childhood, presenting as small vessel vasculitis.

The diagnosis based on clinical signs such as purpura, arthritis, abdominal pain, nephritis. IgA can be detected in the wall of small blood vessels by direct immunofluorescence method.

METHODS: Case report

The 16-year-old male was admitted to the hospital because of gastroenteritis, later worsening abdominal pain and bloody diarrhoea became the leading signs.

RESULTS: Upper panendoscopy suggested the diagnosis of Chron-disease. During explorative laparotomy. Meckel diverticulum was removed, at second laparotomy picture of mesenteric lymphadenitis was found. At this stage blood and protein occurred in urine. The kidney biopsy show IgA nephropathy.

CONCLUSIONS: Purpura occurred only for a short period at the beginning of the disease. After introduction of steroid therapy the possibility of easy diagnosis was lost.

Topic: Immunology

Paper number: 1484

Presentation type requested: Poster Presentation

IS IP10 A BETTER BIOMARKER THAN INTERFERON GAMMA FOR ACTIVE TUBERCULOSIS?

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BACKGROUND AND AIMS: Diagnosis of Mycobacterium tuberculosis infection in the paediatric population remains a challenge. Although novel, blood based assays have recently become available, these also do not appear to discriminate between active and latent TB. The search for additional biomarkers therefore continues. IFN- γ -inducible protein 10 (IP-10/CXCL10) is a chemokine implicated in granuloma formation and has recently been evaluated as a marker for active TB in adults with promising results.

Aim: To investigate this new biomarker for active TB in paediatrics
METHODS: We measured IP-10 levels using ELISA in supernatants of whole blood samples stimulated with TB-antigens and negative control antigen. The samples were generated using the Quantiferon Gold in tube system. Results in active TB were compared to non-TB controls and latent TB infection.
RESULTS: Although baseline levels are not significantly different between cases and controls, the TB-antigen stimulated blood samples show a significantly higher level of IP10 in the TB cases. (Antigen stimulated control vs TB $P < 0.0008$, ratio of increase (Antigen: unstim) control vs TB $P < 0.025$). We are currently conducting tests to see if this difference is significant between active and latent TB, as this would be the most useful differentiation in clinical practice.
CONCLUSIONS: IP-10 and other biomarkers could provide promising alternatives for diagnosis of active TB and distinguish between active and latent TB infection in the paediatric population

Topic: Infections in migrants and travelers

Paper number: 1042

Presentation type requested: Poster Presentation

IMPORTED NEUROLOGICAL LYME DISEASE AND POST-LYME DISEASE SYNDROME IN AN SPANISH 10-YEAR-OLD BOY.

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BACKGROUND AND AIMS: Lyme Disease (LD) is a tick-borne disease caused by *Borrelia burgdorferi*. Although LD is endemic in more than 15 states in United States (US), and in many areas in Europe and Asia, it is uncommon in Spain. Despite the standard antibiotic treatment, some patients develop fatigue, musculoskeletal aches, and neurocognitive dysfunction. This is the so-called Post-Lyme Disease Syndrome (PLDS) and prolonged antibiotic therapy do not seem to improve its course.

METHODS: 10 year-old Spanish boy presenting with dental malocclusion and unilateral facial palsy. The patient had spent one month in US Eastern Coast (three months before attending at our center) referring an insect bite on the ipsilateral retroauricular area. No skin manifestations were reported.

RESULTS: Fundoscopy revealed bilateral papilledema. Lumbar puncture showed raised intracranial pressure (24 mmHg) with no biochemical abnormalities. Magnetic resonance imaging was performed demonstrating unilateral temporomandibular arthritis. Polymerase Chain Reaction to *B. burgdorferi* was negative both in plasma and cerebrospinal fluid. IgM and IgG blood serology were positive (EIA + Western-Blot). Intravenous Cefotaxime was maintained for 4 weeks with good clinical and serological evolution. Despite of this, persistent papilledema and raised intracranial pressure (18mmHg) were demonstrated in clinical follow-up. PLDS diagnosis was established and oral acetazolamide was started with good clinical outcome.

CONCLUSIONS: LD must be suspected in any patient with neurological, arthritic or cardiac symptoms, mainly if coming from an endemic area. Intravenous antibiotic therapy is needed when neurological involvement is present. If neurological symptoms persist despite good serological evolution, PLDS should be suspected.

Topic: Infections in migrants and travelers

Paper number: 1067

Presentation type requested: Poster Presentation

INFLUENZA PROPHYLAXIS FOR TRAVELLING CHILDREN

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BACKGROUND AND AIMS: Flu is spread all over the world. Traveling children are at high risk of contraction of flu - especially during the epidemic season. Another important problem is traveling within different hemispheres – because of differences in epidemic seasons and composition of vaccines. The aim of the paper is to present general rules of vaccinations against flu in traveling children.
METHODS: A review of available recommendations.
RESULTS: Vaccination against flu should be recommended annually for all healthy children 6-59 months and all children older than 6 months with additional chronic diseases – independently from the age.

Children traveling within the same hemisphere should receive the vaccine before epidemic season (it is typically November-February for Northern Hemisphere and April-September for the Southern Hemisphere). Children 8 years of age and younger who are receiving influenza vaccine for the first time should receive two doses (separated by at least 4 weeks). Children 9 years of age and older should receive one injection. Vaccinated children traveling to another hemisphere do not require the additional dose of vaccine against flu. Unvaccinated children traveling to another hemisphere in the epidemic season should receive influenza vaccine before expected travel (whether it is possible) or just after receiving destination country. In order to protect against infection antiviral drugs (oseltamivir or zanamivir) may be administered – for 2-6 weeks (dependently of the age of a child and number of doses required).

CONCLUSIONS: It is important to protect traveling children against flu; general rules of planning vaccines depend on the time and destination of travel.

Topic: Infections in migrants and travelers

Paper number: 1080

Presentation type requested: Poster Presentation

INTESTINAL PARASITE INFECTIONS IN IMMIGRANT CHILDREN

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BACKGROUND AND AIMS: In the last years we assisted to an increased migration of children coming from developing countries.

The aim of this study was to evaluate intestinal parasitosis in asymptomatic, recently immigrated children.

METHODS: From 2003 to 2007 we evaluated 73 children (mean age 6 years, range 1-14 years); 31 were coming from Africa (44%), 16 from India (22%), 13 from South America (17%) and 13 from East Europe (17%). None of them reported gastrointestinal symptoms. For all we performed a microscopic examination of stool specimen. **RESULTS:** We found a parasitosis in 30 children (41%); 16 children had only one kind of parasite in the stools, 14 had two or more. The most frequently protozoans found were *Giardia lamblia* (19 cases) and *Blastocystis hominis* (11 cases); *Endolimax Nana* and *Entamoeba Coli* were the other protozoary infections. Three stool samples were positive for *Trichuris Trichura*, two for *Ascaris Lumbricoides*, one for *Anchilostoma Duodenalis*. Children coming from African countries were more affected than children coming from other countries; no correlation was found between the kind of infection and the original country.

All these children were treated; then, for most of all, we did a stool sample control, that was negative.

CONCLUSIONS: Even using a single microscopic stool examination, we found a significant number of parasitic intestinal infections. We suggest to perform this simple and cheap exam in all children coming from developing countries regardless of symptoms, in order to avoid the risk of transmission in the community or any clinical consequences.

Topic: Infections in migrants and travelers

Paper number: 1140

Presentation type requested: Poster Presentation

MULTIPLE UNSUSPECTED INFECTIONS IN AN ADOPTED 9 YEAR-OLD GIRL.

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BACKGROUND AND AIMS: the number of internationally adopted children have increased in Spain since 2000, most of them coming from undeveloped countries. These children have an increased risk of infections which may be endemic in the origin countries but exceptional in the receiving ones. **METHODS:** A nine year-old girl, adopted from India two years before, was admitted at our Hospital presenting weight loss, asthenia, headache, vomiting and unstable gait for one month. **RESULTS:** MRI showed a cystic lesion in the left cerebellar hemisphere compatible with a pyogenic abscess and an hyperintense signal in left petrous apex suggestive of apical petrositis. Surgical resection of the lesion was performed and both CSF and abscess culture yielded penicillin-susceptible *Streptococcus pneumoniae* serotype 3. Antibiotic therapy with intravenous penicillin was maintained for 6 weeks, with good clinical and radiological evolution. During hospital stay other infectious diseases were diagnosed: bilateral tinea pedis (*Trichophyton rubrum*) treated with oral terbinafine and vesicular skin lesion affecting right calf with PCR positive for Herpes simplex virus type II. When fungal skin lesions affecting right toe improved, an hypopigmented and hypoaesthetic macule with raised margins was observed. Skin biopsy was performed and histological features were consistent with tuberculoid leprosy. Oral Rifampin and Dapsone were started. **CONCLUSIONS:** Clinicians must be aware of the possibility of imported infections in internationally adopted children. When hypopigmented and hypoaesthetic lesions appear in patients coming from endemic areas, leprosy should always be considered.

Topic: Infections in migrants and travelers

Paper number: 1306

Presentation type requested: Poster Presentation

THE DIAGNOSIS OF LATENT TUBERCULOSIS IN BCG VACCINATED CHILDREN COMING FROM ENDEMIC AREA

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BACKGROUND AND AIMS: The tuberculin skin test (TST) has been historically used for the diagnosis of tuberculosis (TB) and latent infection of TB. A new approach for the immunodiagnosis of TB has been introduced: Quantiferon-TB Gold (QFT). The QFT + TST + Chest X-ray give a veritable diagnosis in children coming from high risk epidemiologic areas.

To evaluate if QFT is reliable during childhood, associated with the TST in the diagnosis of latent TB in BCG-vaccinated children. **METHODS:** From 03.01.2006 to 12.31.2007, 157 BCG-vaccinated patients (73 M e 84 F), age >1y 4/12 <18 y (average age 10 y 6/12) had received TST + QFT.

We considered 3 groups:

- Group 1: TST 0-9 mm
- Group 2: TST 10-14 mm
- Group 3: TST > 14 mm

When QFT was positive, Chest x-Ray was performed.

RESULTS: Group 1: 18 patients (8 M and 10 F): 1 positive QFT

- Group 2: 61 patients (32 M and 29 F): 8 positive QFT
- Group 3: 78 patients (33 M and 45 F): 17 positive QFT. 1 patient had hilar lymphadenopathy at chest x-Ray.

26 patients (16,5%) on 157 showed a positive QFT.

Children with positive QFT received a 6 month of Isoniazid. Clinical follow-up was performed in children with negative QFT. **CONCLUSIONS:** QFT seems to be an adequate evaluation in the diagnosis of latent TB also during childhood. It is also helpful since it allows a precocious diagnosis of latent TB in BCG-vaccinated children and reduces the risk of treating false-positive reaction with therapy.

Topic: Infections in migrants and travelers

Paper number: 1424

Presentation type requested: Poster Presentation

EXTRAPULMONARY TUBERCULOSIS

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BACKGROUND AND AIMS: The current influx of African migrants to Europe has created challenges in diagnosing imported communicable diseases, including tuberculosis (TB). Although most countries, including Malta, screen all migrants for TB by means of a physical examination, chest X-ray and a tuberculin skin test, extrapulmonary tuberculosis in children is often difficult to recognise in countries with low TB endemicity rates.

METHODS: We describe two HIV-negative African children who presented in Malta with extrapulmonary TB: a 20-month-old boy from Sierra Leone with scrofuloderma, and a 9 year old girl from Somalia with cervical lymph node tuberculosis.

RESULTS: Mycobacterium tuberculosis, sensitive to isoniazid and rifampicin, was isolated from skin biopsies taken from cutaneous non-healing ulcers in the first case and from a lymph node excision biopsy performed on the second case. In view of the increasing incidence of multi-drug resistant tuberculosis (MDR TB) both children were started on quadruple anti-TB treatment consisting of isoniazid, rifampicin, pyrazinamide and ethambutol. Identification of the mycobacterial species and corresponding antibiotic sensitivities were obtained after 8 weeks and treatment was subsequently continued successfully on isoniazid and rifampicin. Contact tracing did not identify any adults with open TB, however latent tuberculosis infection was diagnosed in family members of both cases.

CONCLUSIONS: Children migrating from developing countries with high incidence rates of TB need to be carefully examined and investigated for both pulmonary and extrapulmonary tuberculosis. If unrecognised, the risk of dissemination of tuberculosis in children below the age of 5 years is high.

Topic: Infections in migrants and travelers

Paper number: 1451

Presentation type requested: Oral Presentation

IMPORTED CHILDHOOD MALARIA IN THE UNITED KINGDOM AND THE REPUBLIC OF IRELAND: ANALYSIS OF A NATIONAL SURVEILLANCE STUDY

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BACKGROUND AND AIMS: To describe the clinical features of imported childhood malaria in the United Kingdom and Ireland **METHODS:** Childhood malaria cases diagnosed between January 2006 and January 2007 were identified through active surveillance by paediatricians notifying cases to the British Paediatric Surveillance Unit (BPSU) and completing a questionnaire. **RESULTS:** Of the 172 cases, 117 children (68%) were resident in the UK or Republic of Ireland and developed malaria after travelling to a malaria-endemic country, while 55 children (32%) resided abroad and were visiting the UK or Republic of Ireland. Most of the infections (135 cases, 78%) were acquired in West Africa, mainly Nigeria (102 cases, 59%). Compared with children who had travelled to a malaria-endemic country, foreign visitors were younger (median age 6.5 years (IQR 3.8-10.5) vs. 9.6 years (5.6-12.8), $p=0.01$), more likely to have a previous history of malaria (29/55 (53%) vs. 30/117 (26%), $p<0.001$) and less likely to present with fever (50/55 (91%) vs. 116/117 (99%), $p=0.006$), low ($<5 \times 10^9/l$) white cell count (1/55 (2%) vs. 6/117 (5%), $p=0.04$) or very low ($<50 \times 10^9/l$) platelet levels (1/55 (2%) vs. 19/117 (16%), $p=0.006$). Of the 148 *P. falciparum* cases, 46 children (31%) fulfilled the World Health Organisation criteria for severe malaria and 11 (7%) required admission to a paediatric intensive care unit. None of the children died. **CONCLUSIONS:** Most cases of malaria in the UK and Republic of Ireland are imported from West Africa and up to a third have features of severe malaria.

Topic: Neoatal infections

Paper number: 1005

Presentation type requested: Poster Presentation

INTERLEUKIN-6 AND INTERLEUKIN-8 AS INFECTION MARKERS IN EARLY-ONSET SEPSIS OF TERM AND PRETERM NEONATES.

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BACKGROUND AND AIMS: Systemic infections are highly responsible for admittance of term and preterm infants at neonatal intensive care units. The incidence of neonatal sepsis is still high, it varies from 1 to 8,1 cases per 1.000 live births. The start of an antibiotic therapy is based on a combination of clinical observance and laboratory parameters, in particular IT-ratio and CRP value. However, the predictive value of these laboratory parameters as only indicators for early-onset sepsis is still unsatisfying.

METHODS: Serum samples were obtained from peripheral blood of 31 term and preterm neonates on day one after delivery during routine examinations and after informed consent of at least one parent had been given. Serum samples were centrifuged not later than two hours after blood collection and frozen at – 80°C. Interleukin-6 and interleukin-8 immunometric assays were performed according to the manufacturer's standard procedures.

RESULTS: Both interleukin-6 and interleukin-8 levels were able to distinguish between neonates with and without early-onset sepsis. IL-8 levels turned out to be superior as parameters for early-onset sepsis (IL-6: p 0,027; IL-8: 0,007). However, we did not detect a correlation between IL-6/IL-8 levels and IT-ratio or CRP values.

CONCLUSIONS: Both IL-6 and IL-8 levels were able to discriminate between neonates with and those without early-onset sepsis. A better correlation between IL-8 levels and clinical symptoms of early-onset sepsis may be explained by inclusion of preterm infants in this study, whose mothers had received corticosteroids before delivery which lead to downregulation of IL-6.

Topic: Neonatal infections

Paper number: 1006

Presentation type requested: Poster Presentation

CD28 EXPRESSION IN TERM AND PRETERM NEWBORNS WITH EARLY-ONSET SEPSIS

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BACKGROUND AND AIMS: The reduced ability of the neonate's immune system to respond to bacterial, viral or fungal organisms is reflected by a higher rate of infections. The incidence of neonatal sepsis is still high, it varies from 1 to 8,1 cases per 1.000 live births. The factor associated most significantly with development of septicaemia is low birth weight, therefore, preterm infants are at essentially higher risk. Inflammation and sepsis do not only contribute to a high mortality rate, but also to high morbidity. **METHODS:** Peripheral blood mononuclear cells were obtained from peripheral blood samples of 44 term and preterm infants with or without early-onset sepsis as well as of 11 children aged from 5 to 10 years during routine examinations and after informed consent had been given. Cells were prepared by ammonium chloride mediated lysis, incubated with the respective antibodies and analyzed by flow cytometry according to standard procedures. **RESULTS:** We compared CD28 expression of CD3+ cells of term and preterm neonates on day 1 after delivery with CD28 expression of CD3+ cells of children aged from 5 to 10 years. We found a significantly higher CD28 expression in lymphocytes of term and preterm infants obtained on day 1 of life (p 0,003 and 0,0003, respectively). Furthermore, term and preterm infants with early-onset sepsis showed a significantly lower CD28 expression than healthy neonates (p 0,009). **CONCLUSIONS:** To sum up, CD28 expression is different in neonates than in older children. Secondly, CD28 expression may serve as a laboratory parameter for early-onset sepsis.

Topic: Neonatal infections

Paper number: 1008

Presentation type requested: Poster Presentation

DECREASED CD4+ AND CD4+CD45RA+ EXPRESSION AND EARLY-ONSET SEPSIS IN TERM AND PRETERM NEONATES

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BACKGROUND AND AIMS: The reduced ability of the neonate's immune system to respond to bacterial, viral or fungoid pathogens is associated with a higher rate of infections and septic events. The incidence of neonatal sepsis is still high, it varies from 1 to 8,1 cases per 1.000 live births. **METHODS:** Peripheral blood mononuclear cells were obtained from peripheral blood samples of 44 term and preterm infants with or without early-onset sepsis as well as of 11 children aged from 5 to 10 years during routine examinations and after obtaining informed consent. Cells were prepared by ammonium chloride mediated lysis, incubated with the respective antibodies and analyzed by flow cytometry according to standard procedures. **RESULTS:** CD4+, CD8+, CD19+ and CD56+ lymphocyte subsets were investigated; furthermore, we detected CD45RA and CD45RO expression of CD4+ and CD8+ subpopulations. Besides a missing CD56 expression we did not find significant differences in expressionlevels of neonates compared to our control-group. However, the absolute count of CD4+ cells was significantly lower in term and preterm neonates exhibiting clinical signs of early-onset sepsis (p 0,01). Furthermore, CD4+ lymphocytes of neonates with early-onset sepsis expressed significantly less CD45RA (p 0,03). On the contrary, expressionlevels of CD4CD45RO as well as CD8CD45RA and CD8CD45RO were unchanged. **CONCLUSIONS:** To sum up, clinical signs of early onset sepsis on day one after delivery were strongly associated with lower absolute CD4+ count as a result of early depletion. In addition to that, CD4+CD45RA+ expression was significantly diminished.

Topic: Neonatal infections

Paper number: 1021

Presentation type requested: Poster Presentation

NEONATAL SEPSIS DUE TO NONTYPEABLE HAEMOPHILUS INFLUENZAE: A CASE REPORT

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BACKGROUND AND AIMS: Although Haemophilus influenzae infections have been decreased gradually by administering the Hib vaccine, especially Nontypeable Haemophilus influenzae (NTHI) infections maintain an important role on the severe systemic and local infections.

Even NTHI is not a member of the genital tract micro flora because of its asymptomatic nature, it may be considered as a flora bacterium. In state of prematurity, chorioamnionitis and premature rupture of membranes, it may be pathogen and responsible of the early onset of neonatal sepsis and genital tract infection. It should be in mind that NTHI disease has an acute pattern in case of having risk factors. Most of those children clinically improve to septicemia.

METHODS: **RESULTS:** **CONCLUSIONS:** A term neonate with tachypnea and retractions in the very first hours after birth due to Nontypeable Haemophilus influenzae sepsis is described in this paper to take attention to neonatal sepsis occurring with this agent.

Topic: Neonatal infections

Paper number: 1047

Presentation type requested: Oral Presentation

NEONATAL INFECTION AND PERIPHERAL OXYGENATION MEASURED WITH NEAR INFRARED SPECTROSCOPY

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Department Of Pediatrics, Medical University, Graz, Austria

BACKGROUND AND AIMS: Aim of the present study was to analyze peripheral oxygenation measured with near infrared spectroscopy (NIRS) in neonates with infection. **METHODS:** 40 neonates with gestational age (GA) >35 weeks were measured on calf with NIRS and venous occlusion within the first two days after birth. Oxygen-delivery (DO₂), oxygen-consumption (VO₂), tissue-oxygenation-index (TOI), and fractional-oxygen-extraction (FOE) were analyzed.

Heart rate, arterial oxygen saturation, central and peripheral temperatures were measured continuously. Arterial blood pressure was measured before and after venous occlusions. Capillary refill time was assessed over the sternum and the calf before venous occlusions.

Diagnosis of infection was based on c-reactive-protein >10mg/l and immature/total-neutrophil-ratio >0.2.

RESULTS: Out of the 40 neonates ten had an infection (GA 37.9±2.6weeks; birth weight (BW) 3055±780g; postnatal age (PA) 30±16hours) and were matched for GA (±1week) and PA (±10hours) to ten neonates without infection (GA 37.4±2.1weeks; BW 3209±400g; PA 30±15hours).

DO₂ (26.8±12.4µmol/100ml/min versus 43.1±14.5µmol/100ml/min; p=0.020), VO₂ (7.8±3.0µmol/100ml/min versus 10.7±2.3µmol/100ml/min; p=0.023) and TOI (64.9±8.1% versus 73.4±5.0%; p=0.009) were lower in the infection-group. FOE (0.31±0.08 versus 0.26±0.04; p=0.053) tended to be higher in the infection group.

Peripheral temperature (33.6±1.1°C versus 34.7±1.0°C; p=0.044) was lower and peripheral capillary refill time (3.2±0.8seconds versus 2.6±0.4seconds; p=0.040) was higher in the infection group.

No significant differences were observed in heart rate, blood pressure, arterial oxygen saturation, rectal temperature and sternal capillary refill time.

CONCLUSIONS: DO₂, VO₂ and TOI were reduced and FOE tended to be increased in neonates with infection. These parameters may serve for early diagnosis of neonatal infection in future.

Topic: Neoatal infections

Paper number: 1053

Presentation type requested: Poster Presentation

NEONATAL SEPSIS DUE TO NONTYPEABLE HAEMOPHILUS INFLUENZAE: A CASE REPORT

I. Gocmen, **F Karademir**, S.. Aydinöz, S. Suleymanoglu, C. Meral, E. Atas

GATA Haydarpaşa Teaching Hospital Department Of Pediatrics, Istanbul, Turkey

BACKGROUND AND AIMS: Although Haemophilus influenzae infections have been decreased gradually by administering the Hib vaccine, especially Nontypeable Haemophilus influenzae (NTHI) infections maintain an important role on the severe systemic and local infections.

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METHODS: **RESULTS:** **CONCLUSIONS:** A term neonate with tachypnea and retractions in the very first hours after birth due to Nontypeable Haemophilus influenzae sepsis is described in this paper to take attention to neonatal sepsis occurring with this agent.

Topic: Neonatal infections

Paper number: 1064

Presentation type requested: Oral Presentation

NEONATAL INFECTION AND PERIPHERAL OXYGENATION MEASURED WITH NEAR INFRARED SPECTROSCOPY

G. Pichler, A. Gaster, E. Peichl, K. Grossauer, H. Zotter, J. Kutschera, W. Mueller, B. Urlesberger

Department Of Pediatrics, Medical University, Graz, Austria

BACKGROUND AND AIMS: Aim of the present study was to analyze peripheral oxygenation measured with near infrared spectroscopy (NIRS) in neonates with infection. **METHODS:** 40 neonates with gestational age (GA) >35 weeks were measured on calf with NIRS and venous occlusion within the first two days after birth. Oxygen-delivery (DO₂), oxygen-consumption (VO₂), tissue-oxygenation-index (TOI), and fractional-oxygen-extraction (FOE) were analyzed.

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Diagnosis of infection was based on c-reactive-protein >10mg/l and immature/total-neutrophil-ratio >0.2.

RESULTS: Out of the 40 neonates ten had an infection (GA 37.9±2.6weeks; birth weight (BW) 3055±780g; postnatal age (PA) 30±16hours) and were matched for GA (±1 week) and PA (±10hours) to ten neonates without infection (GA 37.4±2.1weeks; BW 3209±400g; PA 30±15hours).

DO₂ (26.8±12.4µmol/100ml/min versus 43.1±14.5µmol/100ml/min; p=0.041), VO₂ (7.8±3.0µmol/100ml/min versus 10.7±2.3µmol/100ml/min; p=0.045) and TOI (64.9±8.1% versus 73.4±5.0%; p=0.017) were lower in the infection-group. FOE (0.31±0.08 versus 0.26±0.04; p=0.106) tended to be higher in the infection group.

Peripheral temperature (33.6±1.1°C versus 34.7±1.0°C; p=0.087) tended to be lower and peripheral capillary refill time (3.2±0.8seconds versus 2.6±0.4seconds; p=0.081) tended to be higher in the infection group.

No significant differences were observed in heart rate, blood pressure, arterial oxygen saturation, rectal temperature and sternal capillary refill time.

CONCLUSIONS: DO₂, VO₂ and TOI were reduced and FOE tended to be increased in neonates with infection. These parameters may serve for early diagnosis of neonatal infection in future.

Topic: Neoatal infections

Paper number: 1089

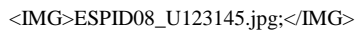
Presentation type requested: Poster Presentation

CURRENT SKIN ANTISEPSIS FOR CENTRAL VENOUS CATHETER INSERTION IN UK TERTIARY-LEVEL NEONATAL UNITS

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BACKGROUND AND AIMS: There is a high mortality and morbidity associated with catheter-related blood stream infections in neonates, yet no official UK guidelines exist for skin antiseptics prior to neonatal central venous catheter (CVC) insertion. This study aimed to identify which antiseptic solutions are currently being used for skin antiseptics before CVC insertion in UK neonatal intensive care units (NICUs).
METHODS: In October 2007 we surveyed all tertiary-level NICUs in the UK to ask about current practices for cutaneous antiseptics prior to CVC and umbilical catheter insertion.
RESULTS: Data was obtained from 50/50 (100%) NICUs surveyed. 8 different antiseptic preparations were being used (Table). Chlorhexidine-based solutions were used by 86% of NICUs, and its concentration varied from 0.015-1%.
CONCLUSIONS: These data show that there is no uniformity in type or concentration of antiseptic solutions being used for neonatal skin preparation prior to CVC insertion in the UK. Randomised controlled trials are warranted to find the optimal antiseptic solutions for use in neonates, preparations that will minimise both the risk of catheter-related morbidity and mortality and also any side effects associated with the use of these agents.



Topic: Neonatal infections

Paper number: 1148

Presentation type requested: Poster Presentation

RHINOVIRUS CAUSES SEVERE PULMONARY DISEASE IN PRETERM INFANTS

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BACKGROUND AND AIMS: Rhinoviruses are known cause of common cold in children and adults. Rhinovirus infections in preterm infants has not been reported previously.

To analyze clinical, radiologic, laboratory and virologic data of infants treated in the NICU with rhinovirus infection.

METHODS: Data of ten infants with confirmed diagnosis of rhinovirus infection by RT-PCR in nasopharyngeal aspirate admitted during 2003-2007 were analyzed retrospectively. Samples were also tested for RSV, human metapneumovirus, parainfluenza virus 1-4, influenzavirus, coronavirus, adenovirus and a Bocavirus (since 2006) by direct immunofluorescence and/or RT-PCR.

RESULTS: Eight infants were born prematurely (median GA and BW were 31 wks and 1600 g, respectively) and 2 were full-term. The M/F ratio was 1. The median age at onset of infection was 47 days (range 5-94). Clinical signs were respiratory distress, rhinorrhea, apnea and hypothermia. All infants required respiratory support for a median of 6 days (range 3-11). Chest radiograph showed atelectasis (n= 9), perihilar streakiness (n=9), focal consolidation (n= 5) and hyperinflation (n= 5). The median CRP value was 16 mg/L (range 2-109) and the median WBC count was $10 \times 10^9/L$ (range 4,5-16,7) at the time of diagnosis. The viral load of rhinovirus was high [median Ct value 23 (range 19,5-28,8)]. One infant was infected by rhinovirus (Ct 26,5), coronavirus (Ct 31) and RSV (Ct 35) at the same time.

CONCLUSIONS: Rhinoviruses may cause severe pulmonary disease requiring respiratory support in preterm infants. Important clinical signs are respiratory distress, rhinorrhea, apnea and hypothermia. The radiologic findings are atelectasis, perihilar streakiness, focal consolidation and hyperinflation.

Topic: Neoatal infections

Paper number: 1157

Presentation type requested: Poster Presentation

RAPID CLEARANCE FROM THE BLOODSTREAM OF COAGULASE-NEGATIVE STAPHYLOCOCCI (CONS) IN INFANTS WITH LATE-ONSET SEPSIS

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BACKGROUND AND AIMS: Although infants with late-onset sepsis due to CONS may be severely ill, clinical recovery generally occurs within 24-48 hours, as shown previously(1). Standard protocols prescribe an antibiotic treatment course of 7-14 days. However, there is no evidence for a certain duration of antibiotic treatment.

Aim of the study: To determine the clearance of bacteria from the bloodstream after 48-72 h of antibiotic treatment.

(1)Pediatrics 1999;103(3):E29

METHODS: Colony-forming units/ml (CFU/ml) are measured from blood samples drawn at onset of sepsis and after 48-72h of treatment in infants with proven CONS sepsis, probable sepsis (clinical signs of sepsis, blood culture negative) and no sepsis (controls). **RESULTS:** 67 infants were included (28 proven sepsis, 19 probable sepsis and 20 controls). CONS CFUs were detected in 24/28 infants with proven sepsis at onset of sepsis (median CFUs 25, range 0-500), vs in 1/7 of probable sepsis and in 1/20 controls (median number 0, range 0-5, resp.). After 48-72h of antibiotic treatment in 1/22 (4.5%) infants with proven sepsis 5 CFU/ml were detected (CONS resistant to administered antibiotics) vs no CFUs in probable sepsis (controls not measured). **CONCLUSIONS:** 1. Clearance of CONS from the bloodstream after 48-72h of treatment in 95.5% of the infants with proven sepsis.

2. Discontinuation of antibiotic treatment for CONS sepsis may be justified after 72h in clinically improved infants.

Topic: Neonatal infections

Paper number: 1171

Presentation type requested: Poster Presentation

A CRITICAL INFECTION IN A NEONATAL INTENSIVE CARE UNIT: STENTROPHOMONAS MALTOPHILIA

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BACKGROUND AND AIMS: Stenotrophomonas maltophilia is encountered usually in hospitalized newborns who were treated with broad spectrum antibiotics for a long period in the intensive care units. The invasive procedures such as endotracheal intubation, mechanical ventilation and central catheterization and using dirty incubators are the risk factors. Stenotrophomonas maltophilia was isolated in 1.4% of 1824 hospitalized neonates in Turkey. The mean age, weight and Stenotrophomonas maltophilia's isolated day of the newborns are 29.8 ± 3.8 weeks, 1360 ± 790 g, and 11.7 ± 9.7 days respectively. It is usually resistant to most of common antibiotics. Trimethoprim-sulfamethoxazole is the first choice. Quinolones and ticarcillin-clavulanate are also effective. Stenotrophomonas maltophilia positive cultures should be treated with effectively at the early phase, because of the serious complications and high risk of mortality.
METHODS:
RESULTS: In this report, Stenotrophomonas maltophilia sepsis was detected in a preterm who was born with a gestational age of 26 weeks, 920 g and whose postnatal age when it was isolated was 15 days. In our case Stenotrophomonas maltophilia was isolated in blood, tracheal aspirate and incubator cultures. Our case had risk factors, such as mechanical ventilation, endotracheal intubation and was using broad spectrum antibiotics for a long duration.
CONCLUSIONS: We treated our patient successfully with trimethoprim-sulfamethoxazole and ciprofloxacin for 6 weeks and discharged at the age of 2 months without any complication related to this critical infection. In this case report we aimed to point out neonatal septicemia of Stenotrophomonas maltophilia and clean, careful follow up in neonatal intensive care unit.

Topic: Neoatal infections

Paper number: 1198

Presentation type requested: Poster Presentation

MATERNAL AND NEONATAL RISK FACTORS TO PREDICT THE CHANGE OF EARLY EMPIRIC ANTIBIOTIC REGIMEN IN NEONATES.

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BACKGROUND AND AIMS: The narrow spectrum antibiotics (AB), used in presently recommended empirical regimens are not effective against all causative agents of early neonatal sepsis.

The aim of the study was to identify perinatal risk factors to predict the need for change in empiric AB in neonates requiring early AB therapy according to the CDC criteria.

METHODS: All infants born in the Maternity Clinic of Tartu University Hospital from August 1, 2006 to November 30, 2007, admitted to the 3rd level NICU within the first 72 hours of life and requiring empiric AB therapy were prospectively enrolled. In the first 6 mo penicillin and thereafter ampicillin in combination with gentamicin was used. Perinatal risk factors of infection and time of change in early empiric AB according to pre-defined criteria were registered for all infants. **RESULTS:** A total of 104 infants met the inclusion criteria, 30 had empirical AB changed within 13-175 hours. Among perinatal risk factors positive culture for Gram-negative bacteria from the birth canal (OR; 95% CI 10.7; 1.1-100.0), chorionamnionitis (2.9; 1.1-7.7), invasive procedures during pregnancy (2.9; 1.2-7.21), lower gestational age (28.4 +/- 2.3 wk vs 32.6 +/- 3.9 wk; <0.001), birthweight (1079 +/- 435 g vs 2065 +/- 861 g ; p<0.001) and 1st minute Apgar score (4.0 +/- 1.7 vs 5.0 +/- 2.1; p=0.024) were associated with the change of AB regimen. **CONCLUSIONS:** We suggest that the presence of the above mentioned risk factors might prompt a change or use of broad-spectrum antibiotics in the empirical AB regimen.

Topic: Neoatal infections

Paper number: 1202

Presentation type requested: Poster Presentation

TWO NOSOCOMIAL NOROVIRUS OUTBREAKS AT THE NEONATAL INTENSIVE AND INTERMEDIATE CARE UNIT

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BACKGROUND AND AIMS: Norovirus infection in preterm and term neonates rarely has been described. We report on two nosocomial norovirus outbreaks at the neonatal intensive care unit (NICU) and the Neonatal Intermediate Care Unit of the Paediatric Department of the Medical University Graz, Austria.
METHODS: Observational study on two nosocomial outbreaks of norovirus disease. Symptoms of infection in preterm and term neonates are described. Norovirus was detected in faecal specimen by ELISA and/ or PCR technique.
RESULTS: Episode I at the NICU: Between January and March 2007, 22 of 44 preterm infants were tested positive for norovirus. Out of 174 faecal specimen 63 (36%) tested positive by ELISA, thirteen specimen tested additionally by PCR were negative. Only the index patient developed symptoms with bloody stools for one day. Viral shedding longer than two weeks was observed in six (27%) patients with maximum 39 days.

Episode II at the Neonatal Intermediate Care Unit: Between December 2007 and January 2008 five of 36 neonates were tested positive for norovirus. All had clinical symptoms including vomiting and mild diarrhea in one patient and short-lasting diarrhea in four patients. Isolation of the infants and strict hygiene measures hardly stopped spread of disease. By discharge four of five patients still showed viral shedding.

CONCLUSIONS: Although spread of disease is difficult to confine, symptoms of disease are generally mild and self-limited in this population. However, we question the reliability of the norovirus-specific antigen assay by the fact of negative PCR testing during the first episode.

Topic: Neoatal infections

Paper number: 1219

Presentation type requested: Poster Presentation

EPIPHYSIS OSTEOMYELITIS' EARLY DIAGNOSIS, WHICH WAS DEVELOPED DURING SEPSIS IN NEWBORNS

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BACKGROUND AND AIMS: Bacterial sepsis and osteomyelitis is a great problem in neonatology. The aim of this article is to work out new methods of early diagnosis of epiphysis osteomyelitis in newborns.

METHODS: There was open prospective research by randomized method. From 250 newborns with bacterial sepsis, we picked out 58 with bone-joint system's damage. Also, was conducted ultrasonography and roentgenography of bone-joint. The bacterial research of blood, synovial fluid, was studied by PCR method and by routine culture method. For estimating existence and heaviness of infection was defined by Procalcitonini (PC)-by immunoluminometric method and C reactive protein (CRP) by Latex-agglutination method. Research was statistically reliable and agreed with clinical bioethical commission.

RESULTS: epiphysis osteomyelitis diagnosis was established by ultrasonography as soon as the first clinical sign was displayed, but by roentgenography, changes was not fixed. Identification and detection of bacteria which provoked sepsis and osteomyelities, were shown in 6 hours with PCR in 100%. Late than 72 hours we got positive bacteriological culture only in 35% by routine culture method; The meaning of CRP was higher than normal in 40%, but in 92% of PC was higher than normal and was agreed with the heaviness of disease.

CONCLUSIONS:

1. During sepsis, for early diagnosis of developed epiphysis osteomyelitis', must be conducted bone-joint's ultrasonography. It is quick, cheap, highly informational, safe method in newborns.
2. For evaluation of heaviness of illness, PC is more informationable than CRP.
3. PCR is more effective and quick method for detection and identification of bacteria from blood and sinovial fluid.

Topic: Neoatal infections

Paper number: 1233

Presentation type requested: Poster Presentation

AN UNUSUAL LOCALIZATION OF STAPHYLOCOCCUS AUREUS AT NEWBORN

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BACKGROUND AND AIMS: Staphylococcus aureus remains one of the major pathogens with high risk of morbidity and mortality especially for newborns.

The aim of the study: case report of an unusual localization of Staphylococcal infection at a newborn.

METHODS: male newborn age 3 weeks admitted at the Newborn Department of the Children's' Hospital Brasov Romania for sialoreea and fixed position of the neck. **RESULTS:** The newborn had fever, fixed and painful position of the neck associated with sialoreea. At admittance the lab exams showed leukocytes 16000 granulocytes 75%, ESR of 80mm/h, CRP of 4.45, and LDH of 763 mm/dl with an ultrasound that showed diffuse swallowing of the lateropharyngeal area. ETN examination possible laterocervical phlegmona. In dynamic the lab exams were leukocytes 15000, ESR of 58 mm/h, CRP of 0.43 and LDH of 830 and then leukocytes of 9960, ESR of 15 CRP negative. The CT scan was performed in the 2nd day after admittance and revealed a latero pharyngeal abscess that was not delineated to the nearby structures. The cultures taken from nasal and pharyngeal swabs were positive with Staphylococcus aureus. Treatment was started with Targocid for 14 days and continued another two weeks with Cefuroxime. At day 19 we performed another CT scan which showed marked reduction of the infected area. The child was discharged after 4 weeks of treatment with no sign of inflammation and in good state. **CONCLUSIONS:** latero pharyngeal abscess is an unusual localization of staphylococcal infection at a newborn.

Topic: Neonatal infections

Paper number: 1258

Presentation type requested: Poster Presentation

THE ROLE OF DIACYLATED PROTEINS AS NOVEL TOXINS IN STREPTOCOCCUS AGALACTIAE SEPSIS

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BACKGROUND AND AIMS: Streptococcus agalactiae (GBS) is the main cause of neonatal sepsis and meningitis, two highly inflammatory disease entities. Although it is well described that TLR2 plays a key role in the induction of the inflammatory process, GBS components that potently induce cytokines via TLR2 are largely unknown. Interestingly, GBS strains of the same serotype differ in released factors that activate TLR2.

The aim of this study was to identify inflammatory molecules that are released by GBS and that interact with TLR2. To this end we investigated aminoterminally diacylated proteins (lipoproteins) as essential for the GBS-induced inflammatory response, both in vitro and in vivo. **METHODS:** and **RESULTS:** Culture of GBS in the presence of the surfactant tween 80 inhibits proper protein acylation and the release of inflammatory cytokine inducing factors from GBS.

Accordingly, the release of inflammatory factors in vitro can be inhibited by a targeted deletion of the GBS acyl transferase Igt, which abrogates lipoprotein formation and decreases lethality in a mouse model of neonatal GBS sepsis. Finally, we identified a complex of the Toll-like receptors (TLR) 2 and 6 as the lipoprotein receptor on phagocytes.

CONCLUSIONS: Here we revealed (1) that bacterial lipoproteins (BLPs) are essential to the ability of soluble released factors of GBS to activate TLR2 and (2) that both aminoterminal acylation and subsequent maturation of BLPs are necessary for inflammatory activation both in vitro and in vivo. The discovery of these toxins and their cognate receptor complex opens new perspectives for therapeutic strategies in GBS sepsis.

Topic: Neoatal infections

Paper number: 1300

Presentation type requested: Oral Presentation

USEFULNESS OF COMPLETE BLOOD COUNT IN THE DIAGNOSIS OF EARLY-ONSET SEPSIS IN TERM AND NEAR-TERM NEONATES

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BACKGROUND AND AIMS: Complete blood count (CBC) is the most common screening tool for neonatal infection. However, its utility is in question and literatures claim that it needs reassessment. Its objective is to determine the accuracy of CBC in the evaluation of high risk term and near term neonates born to mothers with active infection at time of delivery.

METHODS: This is a validation study composed of 344 neonates born to mothers with active infection. CBC and blood culture were extracted prior to the start of antibiotics. Neutrophil indices, platelet count, as well as the clinical signs were noted and determine their sensitivity, specificity, positive and negative predictive values individually and in combination. Likelihood ratios were also noted.

RESULTS: Majority of the neutrophil indices were specific with high negative predictive values. Leukopenia, neutropenia, and abnormal immature and total neutrophil ratio (I:T ratio) had a likelihood ratios (LR) of 6.3, 4.5, and 3.4, respectively. Combinations of WBC indices showed LR of 3-4. The cut-off value of leukopenia, neutropenia, and I:T ratio that can predict sepsis were $<7,500/\text{mm}^3$ ($p < 0.001$), $< 5,400/\text{mm}^3$ ($p < 0.001$), and 0.17 ($p < 0.001$), respectively.

CONCLUSIONS: CBC in combination with the absence of clinical signs can rule out neonatal sepsis. It is specific and has high negative predictive value. Majority of the neutrophil indices and platelet count and their combinations were specific with high negative predictive values. Infection is 3-6 times more likely with the presence of either leukopenia, neutropenia, or an abnormal I:T ratio.

Topic: Neoatal infections

Paper number: 1304

Presentation type requested: Oral Presentation

INVASIVE FUNGAL INFECTION IN VERY LOW BIRTH WEIGHT INFANTS IN AUSTRALIAN AND NEW ZEALAND NEONATAL UNITS 1993-2006.

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BACKGROUND AND AIMS: Invasive neonatal fungal infection is topical and important, because the incidence is high in the USA and parts of Europe, affecting up to 14% of babies <1500g and prompting studies of antifungal prophylaxis.

Our aim was to study the epidemiology of invasive fungal infection in very low birth weight (<1500g) infants in Australian and New Zealand neonatal units.**METHODS:** Prospective, multi-centre surveillance study from 1993-2006 inclusive, identifying invasive fungal infection, defined by a positive blood or CSF culture.**RESULTS:** We identified 83 babies with invasive fungal infection, all but 1 due to Candida, among 11,781 babies with birth weight <1500g, an incidence of 0.70 % (95% CI 0-1.2%). Babies <1000g comprised 89% of the total, with an incidence of 1.6%. C. albicans and C. parapsilosis accounted for 61% and 35% of infections respectively. No hospitals used prophylactic fluconazole but 42% used oral nystatin prophylaxis. When comparing 1993-1999 with 2000-2006, the incidence of fungal infection fell from 1% to 0.5% (p<0.05) in babies <1500g and from 2.2% to 1% (p<0.01) in babies <1000g without changes in prophylaxis. 47% of infections occurred within 14 days of birth, with 26% between days 6 and 10. The mortality rate was 17% and did not change significantly over time. Meningitis occurred in 16.9% of cases and carried a 45% mortality rate. **CONCLUSIONS:** The incidence of invasive fungal infection is far lower than reported in the USA and seems to be declining without any specific new intervention. Mortality remains high, especially if there is associated meningitis.

Topic: Neoatal infections

Paper number: 1307

Presentation type requested: Oral Presentation

MANAGEMENT OF THE NEWBORN IN PROVEN OR SUSPECTED TUBERCULOSIS IN PREGNANCY

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BACKGROUND AND AIMS: The prevalence of Tuberculosis (TB) in pregnancy in Western Europe is increasing. However specific management of the newborn from risk pregnancies is poorly described. **METHODS:** We have aimed to provide guidelines for diagnosis and management, based on childhood TB-guidelines and scarce reports of TB in newborns. **RESULTS:** TB infection in utero, through hematogenous route or ingestion/ aspiration of amniotic fluid, can lead to congenital TB, usely resembling late neonatal sepsis with presence of ≥ 1 criteria from Cantwell and Correa. Post natal infection, through close contact with the contagious mother, can cause either intrapulmonary, extrapulmonary or disseminated disease, usely occuring in the first 3-6 months of life.

Diagnosis is challenging. Chest X-ray, ultrasound of liver and spleen, lumbal puncture and fundoscopy may be helpful. Tuberculin skin test is usely negative in the newborn. PCR and cultures for mycobacteria should be performed on all available specimen, including amniotic fluid and placenta.

Mortality is high due to postponed diagnosis and treatment and a high proportion of disseminated disease in the newborn, especially in those co-infected with HIV.

CONCLUSIONS: Correct management of the newborn, requires an evaluation of the presence of infection/ disease in the newborn as well as an evaluation of the risk for ongoing transmission from close contacts. Decisions for isolation, breast feeding, chemoprophylaxis and treatment must result into an immediate stop of exposure and prevention of active disease in case of a non-diseased newborn and into prompt treatment in a diseased child to prevent morbidity and mortality.

Topic: Neoatal infections

Paper number: 1308

Presentation type requested: Oral Presentation

THE EFFECT OF INTRAPARTUM ANTIBIOTICS ON THE SEPSIS WORK-UP OUTCOME AMONG HIGH RISK TERM AND NEAR-TERM NEONATES

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BACKGROUND AND AIMS: Widespread use of intrapartum antibiotics have led a controversy on the evaluation and management of infants because sepsis work-up on neonates might be affected by it. Its aim is to determine the effects of antenatal antibiotics on the sepsis work-up outcome on high risk neonates.**METHODS:** This is a prospective cohort on neonates who were born to mothers exposed and not exposed to intrapartum antibiotic. All had CBC and blood culture prior to the start of postnatal antibiotics. Results of the sepsis work-up and antibiotic-resistant organisms in each arm were noted and compared. Follow-up of the study neonates was done up to 3 months after discharge and the occurrence of late-onset bacteremia was also noted.**RESULTS:** One hundred and eight neonates in each arm were studied. White blood cell count and absolute neutrophil count showed a decreased risk of having abnormal values with an adjusted of RR 0.74 and 0.76, respectively. However, association was weak. Intrapartum antibiotics did not show association with the sterilization of blood culture (p 0.818 [RR 1.10 CI 0.49,2.48]) and development of antibiotic-resistant organisms (p 1.00 [RR 1.02 CI 0.67,1.55]). **CONCLUSIONS:** Exposure to antenatal antibiotics failed to demonstrate normalization of the white blood count indices and sterilization of blood culture. The development of antibiotic-resistant infection failed to show significant difference whether the mothers were exposed to antenatal antibiotics or not. The number of doses of intrapartum antibiotics did not demonstrate association with antibiotic-resistant organisms. There were no rehospitalization related to late-onset bacterial infection.

Topic: Neoatal infections

Paper number: 1377

Presentation type requested: Oral Presentation

COAGULASE-NEGATIVE STAPHYLOCOCCAL BLOOD ISOLATES OF IN A NEWBORN UNIT TYPED BY PULSED FIELD GEL ELECTROPHRESIS

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BACKGROUND AND AIMS: Coagulase-negative staphylococci (CNS) infection is associated with a significant increase in morbidity and mortality. To determine whether CNS isolated from blood culture of neonates represented single or multiple clones, and to ascertain by PFGE analysis in order to diagnose neonatal sepsis. **METHODS:** The 90 CNS strains collected from blood of 80 neonates with clinical presentations of infection were enrolled. We studied the CNS strains by using PFGE. **RESULTS:** 80 neonates were included in the study. Full term infants were 59 cases (73.8%), premature were 18.8%, and small for gestational age of full term infants were 7.5%. According to the diagnosis of neonatal sepsis, there were 27 cases diagnosed sepsis.

71 patients had a single positive blood culture, and 9 had multiple positive blood cultures. The species distribution was *S. epidermidis* 62.2%, *S. haemolyticus* 21.2%, *S. hominis* 14.4%, and *S. Warneri* 2.2%.

Overall, there were 46 major separate types. Among 90 CNS there were 6 groups of PFGE genotypes were indistinguishable, and 2 groups were isolated from 2 patients of blood cultures in different time, they were diagnosed sepsis in no question. Endemic clones were demonstrated in the current study, the most marked example being a single clone of *S. hominis* that contained 12 isolates, 2 of which were associated with bacteremia. The distribution of species among the 27 neonatal sepsis, 18 cases were *S. epidermidis*, which was the leading cause, and then *S. hemolyticus*, *S. hominis*. **CONCLUSIONS:** PFGE can identify endemic clones of CNS, and can aid clinical doctors to diagnose and discard sepsis.

Topic: Neoatal infections

Paper number: 1382

Presentation type requested: Oral Presentation

NEONATAL MYCOPLASMA HOMINIS OR UREAPLASMA UREALYTICUM AIRWAY COLONIZATION AND NEUROLOGICAL OUTCOME IN VERY PRETERM INFANTS

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BACKGROUND AND AIMS: Vaginal colonization of *Ureaplasma urealyticum* or *Mycoplasma hominis* (Uu/Mh) in pregnant women is found in nearly 50% of birth occurring prematurely. No clinical study has evaluated the consequences of Uu / Mh airway colonization on neurological development in very premature infants. **METHODS:** A case-control study analyzed neonatal events and follow up at 2 years of age of a cohort of preterm infants born below 32 completed weeks' gestation with a Uu/Mh colonization higher than 10000 cfu/ml. Fifty-nine consecutive cases were compared with 118 controls paired at the period of birth. All results were adjusted for gestational age. **RESULTS:** A clinical chorioamnionitis (27%) and a prolonged rupture of the membranes (47%) were usually associated with postnatal Uu/Mh airway colonization. In this study, neither early neonatal morbidity nor the incidence of chronic lung disease was worsened by Uu/Mh detection in airways. Neurological investigations (electroencephalograms, ultrasound scans) did not show any deleterious effect of Uu/Mh compared with controls. The neurological follow-up at 6 months, 1 and 2 years of age did not show any difference between the two groups. **CONCLUSIONS:** This study did not show any neurological adverse effect of a Uu/Mh airways colonization during the first 2 weeks of life. The extensive use of antibiotics against Uu/Mh in this population (88%) may explain this lack of respiratory and neurosensory deleterious effect and should therefore be recommended.

Topic: Neoatal infections

Paper number: 1383

Presentation type requested: Poster Presentation

NEONATAL CONJUNCTIVITIS: WHAT ROLE FOR PROFILAXIS?

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BACKGROUND AND AIMS: The effectiveness of profilaxys of bacterial conjunctivitis is still a matter of debate. The objective of this study was to compare the use of topical oxitetracilin versus no profilaxis, followed by surveillance period without profilaxis.

METHODS: A randomized clinical trial took place in a level II hospital. Phase I (2006-2007) included all newborn, for a whole year. Two groups were selected, alternate days criteria, with one group using topical oxitetracilin and the other did not use any. Newborn were controlled up to their 28th day postnatal age. In phase II, profilaxis was abolished and newborn were also controlled. Data was compared after completion of phase I and after phase II.

RESULTS: 2181 newborns were included in phase I. Demographic data concerning gender distribution, Graffard index, prenatal care, maternal habits and infections during pregnancy did not have a significant statistical difference. Delivery, postconceptional age and infectious risk were also without statistical difference between both phase I groups. About 108 developed conjunctivitis, 27 with identifiable germen. In the 108 newborns with conjunctivitis, 51 had done previous eye profilaxis; from the 81 with no identifiable germen 33% had profilaxis and in the 27 with identified germen 55% had previous profilaxis. There was no statistical significance in the outcome (conjunctivitis) in phase I groups. In phase II, the incidence of conjunctivitis was similar to phase I.

CONCLUSIONS: In our data, profilaxis with oxitetracilin did not prove superior to no profilaxis in phase I. Phase II surveillance confirmed this assumption.

Topic: Neoatal infections

Paper number: 1404

Presentation type requested: Poster Presentation

ULTRASOUND HEPATOBILIAR SISTEM LIKE SCREENING IN UMBILICAL CATHETERIZATION

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BACKGROUND AND AIMS: Hepatic abscess is rare in the neonatal period, if untreated, the outcomes remains uniformly fatal. **METHODS:** We present 6 cases of preterm referred to our hospital at birth.

4 of the babies were males, 2 females.

Premature, with a median gestational age of 33 weeks and birth weight was 2.000 gr, age of diagnosis was 13.6 days. All babies developed fever, hepatomegalia, abdominal distension, hipertransaminasemia.

Received antibiotic treatment with amphotericin and fluconazolo, 2 of this, presents solitary hepatic abscess, dreined, and then treated with antibiotics, 4 presents at blood culture Candida, in 2 were negative.

RESULTS: All infants, showed at serial ultrasound of hepatobiliar system, the resolution of hepatic abscess.

In our babies with major risk factors for epatic abscess we execute ultrasound of hepatobiliar system. **CONCLUSIONS:** Staphilococcus, Streptococcus. and E.Coli, Candida, Klebsiella, Pseudomonas are the most common organism isolated from solitary hepatic abscess in neonates. The hepatic abscess can be either multiple or solitary. Routes of infection are: via contagious structure or hepatic artery trough systemic circulation or portal vein via umbilical vein, mesenteric or splenic vein.

Major risk factor for hepatic abscess are sepsis, umbilical catheterization, and omphalitis. Minor include NEC, abdominal surgery, maternal infections, infant of diabetic mother, exchange trasfusión and asphyxia neonatorum. The signs and symptoms i neoante are non-specific and are essentially those of sepsis.

The diagnosis of liver abscess in the neonate cannot established from the clinical picture alone, is important ultrasound of hepatobiliar or computed tomography, to make early diagnosis and to institute appropriate treatment.

Topic: Neoatal infections

Paper number: 1416

Presentation type requested: Poster Presentation

**INCIDENCE AND CLINICAL OUTCOME OF SEPTICEMIA: A SINGLE-CENTER CASE-CONTROL
RETROSPECTIVE ANALYSIS**

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BACKGROUND AND AIMS: Neonatal sepsis remains the primal cause of mortality and morbidity of neonates and especially the pre-terms. **METHODS:** Review of infected cases with positive blood cultures and registration of incidence and cause of sepsis at the time (precocious or belated) and place (nosocomial or not) of appearance. **RESULTS:** 863 neonates were hospitalized in our neonatal intensive care unit between January 2003 and February 2004 (14 months). 35/654 (5.3%) blood cultures were found positive in 32 neonates. Of these, 15 experienced a < 35 weeks gestation. 12/32 were infected while hospitalized. All of them were pre-term and in 8/12 gram (-) bacteria were detected. 15/32 neonates were infected during the first 72 hours of life and in all but one gram (+) bacteria were found. 12/15 were full-term neonates. The most common microbe was Staphylococcus. 19/32 neonates were affected by Klebsiella pneumoniae. All gram (+) bacteria were sensitive to vancomycin and all gram (-) to imipenem, amikacin and ciprofloxacin. The frequency of sepsis was 6.21%. The mortality rate was 6.25% (2/32). Premature rupture of membranes was seen in 2 neonates. No relationship was found between sepsis and maternal diabetes mellitus, multiple pregnancies, meconium aspiration, gender and the way of delivery. **CONCLUSIONS:** The resistant to oxacyclin Staphylococci aureus and epidermidis as well as the multi-resistant gram (-) bacteria are the most frequent factors of sepsis in our unit. Nosocomial infections are usually caused by Klebsiella (ESBL). The early onset sepsis is almost exclusively due to gram (+) bacteria.

Topic: Neoatal infections

Paper number: 1440

Presentation type requested: Oral Presentation

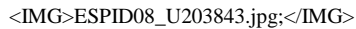
APPROPRIATE ANTIBIOTIC TREATMENT IMPROVES UREAPLASMA INFECTION OUTCOME IN THE NEONATAL MOUSE

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BACKGROUND AND AIMS: Ureaplasma commonly causes newborn infection. Although erythromycin treatment is standard, many report therapy failures. We recently reported >73% of ureaplasma resistant to erythromycin, while 100% sensitive to azithromycin in-vitro. We aim to determine if appropriate antibiotic treatment improves ureaplasma infection outcome in the neonatal mouse.

METHODS: Ureaplasma ATCC strains 33697 (serotype 14) and 33698 (serotype 8), and clinical strains B079 (serotype 14) and B125 (seotype 6) were evaluated in-vitro for antibiotic MIC. FVB-albino mice pups were used to determine: erythromycin and azithromycin pharmacokinetics by bioassay; survival, quantitative blood culture, and growth following treatment of ureaplasma infection with saline, erythromycin, or azithromycin. **RESULTS:** See Table: **CONCLUSIONS:** We have established a neonatal model of ureaplasma infection. With appropriate dosing, treatment outcome appears related to in-vitro antibiotic sensitivity.



Topic: Neonatal infections

Paper number: 1459

Presentation type requested: Poster Presentation

SUCCESSFUL INTRAVENTRICULAR ADMINISTRATION OF CASPOFUNGIN IN A NEONATE WITH VENTRICULAR SHUNT INFECTION DUE TO CANDIDA PARAPSILOSIS

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BACKGROUND AND AIMS: Management of hydrocephalus requires cerebrospinal fluid (CSF) shunting procedures. Fungi, most commonly *Candida* spp., can rarely cause infection of ventricular shunts (VS). *Candida* biofilm formation on VS is problematic because candidal organisms in the biofilm have reduced susceptibility to antifungal agents. We report a rare case of VS infection due to *Candida parapsilosis*, the second presented case found in a search of the medical literature, eradicated with intraventricular caspofungin infusion and deoxycholate amphotericin B. **METHODS:** Case report **RESULTS:** A 29-week premature female was born by cesarean delivery due to hemorrhage and intractable contractions of her mother, with a BW=1200 g and Apgar scores 6 at 1 min and 8 at 5 min. Her neonatal period was complicated by intraventricular hemorrhage and hydrocephalus requiring a VS. Six months after the admission to the NICU she developed a VS-related ventriculitis due to *C. parapsilosis* with negative blood cultures. Intravenous deoxycholate amphotericin B (1mg/kg/24hr) was initiated. Due to the serious condition of the neonate, VS could not be removed and caspofungin (25mg) intraventricular administration was added to the regimen. Six days later (2 caspofungin infusions) CSF cultures became negative. No adverse effects were noted, CSF cultures remained negative and the neonate continues to do well 6 months later. **CONCLUSIONS:** This case suggests a role for intraventricular caspofungin on the clearance of *C. parapsilosis* in CSF. Furthermore, it provides supportive evidence for the use of this echinocandin in the treatment of neonatal candidiasis.

Topic: Neoatal infections

Paper number: 1480

Presentation type requested: Poster Presentation

PREDICTORS OF URINARY TRACT INFECTION IN YOUNG INFANTS

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<pre>BACKGROUND AND
AIMS:</pre>.....
<pre>METHODS:</pre>.....<pre>RESULTS:</pre>.....<pre>CONCLUSI
ONS:</pre>.....

Topic: Neoatal infections

Paper number: 1486

Presentation type requested: Poster Presentation

RAPID C-REACTIVE PROTEIN IN THE NEONATAL INTENSIVE UNIT: PREDICTIVE VALUE AND LIMITATIONS

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<pre>BACKGROUND AND AIMS:</pre>.<pre>METHODS:</pre>.<pre>RESULTS:</pre>.<pre>CONCLUSIONS:</pre>.

Topic: Parasitic infections

Paper number: 1015

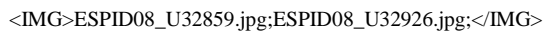
Presentation type requested: Oral Presentation

BINDING STUDIES OF THE ROSETTING INTERACTION BETWEEN COMPLEMENT RECEPTOR 1 (CR1) AND PLASMODIUM FALCIPARUM ERYTHROCYTE MEMBRANE PROTEIN 1 (PFEMP1)

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BACKGROUND AND AIMS: Plasmodium falciparum Erythrocyte Membrane Protein 1 (PfEMP1), a modular malaria protein expressed on the surfaces of infected human erythrocytes (RBC), mediates multiple pathophysiological adhesive phenomena including rosetting between infected and uninfected erythrocytes. Complement Receptor 1 (CR1; CD35), a membrane-bound single chain glycoprotein member of the Regulators of Complement Activation (RCA) protein family, has been implicated as one of the human receptors for PfEMP1 in rosetting. Furthermore, two single nucleotide polymorphisms (K1590E/R1601G) in CCP 25 of CR1, observed frequently in populations originating from malaria endemic regions of Africa, are epidemiologically associated with a decreased incidence of cerebral malaria.
METHODS: As a means of identifying the specific region of CR1 that binds to DBLa-1, a series of fragments of CR1 corresponding to the individual long homologous repeats (LHR) have been expressed. In addition, with respect to the fragment corresponding to LHR-D, variants incorporating both Caucasian and African polymorphisms have been developed.
RESULTS: The results of binding studies between these CR1 fragments and protein modules corresponding to DBLa-1 domains from both rosetting and non-rosetting strains of P. falciparum will be presented.
CONCLUSIONS: The adhesive interactions between CR1 and PfEMP1 are illustrative of the complex evolutionary interplay between the human and Plasmodium genomes.



Topic: Parasitic infections

Paper number: 1016

Presentation type requested: Poster Presentation

FALSE POSITIVE PET IN HODGKIN'S DISEASE CAUSED BY TOXOPLASMOSIS

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BACKGROUND AND AIMS: Positron emission tomography, PET, is an established diagnostic method in malignant tumours utilizing their elevated glucose metabolism. In the GPOH HD 2002 protocol PET was optionally used for restaging and follow-up.

METHODS: We present a 13-year old patient who was treated for Hodgkin's disease III ESB in 2005. Restaging investigations included whole-body PET, thoracic CT, bone scintigraphy as well as cervical, abdominal and pelvic MRI.
RESULTS: A PET taken 1 ½ years after therapy showed a circumscribed tracer uptake at multiple locations which primarily corresponded to glucose metabolising lymph nodes. In addition, the thoracic CT showed progression.

To exclude a relapse, one lymph node was biopsied. Histology showed a reactive follicular hyperplasia and sinus histiocytosis consistent with an infection. No signs of Hodgkin's disease were found. Toxoplasmosis antibody titers in the blood were highly positive.

CONCLUSIONS: The sensitivity of PET in Hodgkin's disease is 92%, the specificity 98%(1). False positive results have been observed in infections e.g. tuberculosis, cryptococcosis, paragonimiasis and pneumocystis carinii(2,3). Tracer uptake due to toxoplasmosis has not been observed yet(4).

(1) Hutchings et al. Positron emission tomography with or without computed tomography in the primary staging of Hodgkin's lymphoma. Haematologica 2006;91(4):482-489.

(2) Chang et al: False positive and false negative FDG-PET scans in various thoracic diseases. Korean J Radiol 2006;7(1):57-69.

(3) Beker et al. False Positivity of FDG-PET/CT in a Child With Hodgkin Disease. Pediatr Blood Cancer 2007, in press.

(4) Love et al. Radiographics 2005;25(5):1357-1368.

Topic: Parasitic infections

Paper number: 1105

Presentation type requested: Poster Presentation

PARASITIC INFECTIONS INVOLVING THE MYOCARDIUM AND PERICARDIUM

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BACKGROUND AND AIMS: Parasitic infections produce a wide spectrum of cardiac manifestations. They may involve various anatomic structures of the heart and are manifested clinically as myocarditis, cardiomyopathies, pericarditis, or pulmonary hypertension in many resource-constrained settings. **METHODS:** However, many parasitic infections involving the heart may also be currently diagnosed in developed countries due to growing worldwide travel, blood transfusions, and increasing numbers of immunosuppression states such as organ transplantation, use of immunosuppressive agents, or HIV/AIDS. **RESULTS:** The most widely studied parasitic infection affecting the heart is Chagas' disease or American trypanosomiasis. African trypanosomiasis may also cause a myocarditis. The protozoan parasite, *Entamoeba histolytica* rarely causes a pericarditis while *Toxoplasma gondii* may cause myocarditis, usually in immunocompromised hosts. The larval forms of the tapeworms *Echinococcus* and *Taenia solium* may cause space-occupying lesions of the heart. Severe infection with the nematode *Trichinella spiralis* may cause myocarditis. **CONCLUSIONS:** Several parasitic infections involve the myocardium and pericardium. Clinicians anywhere in the globe need to be aware of the potential cardiac manifestations of parasitic diseases.

Topic: Parasitic infections

Paper number: 1163

Presentation type requested: Poster Presentation

A PLASMODIUM VIVAX CASE ACCOMPANIED BY PARVOVIRUS B 19 AND HERPES SIMPLEX TYPE 1

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<pre>BACKGROUND AND AIMS:</pre>Erythroid precursor cells are known as the most targeted cells by parvovirus B19 and plasmodium. Parvovirus B19 infection may appear with a clinical presentation fever and aplastic crisis. Findings like fever, pancytopenia and determined parvovirus B19, herpes simplex and plasmodium vivax together seen very rarely in the literature.
<pre>METHODS:</pre>A five-year-old male patient attended us with the complaints of fever and fatigue going on a few days ago. On physical examination he was found as pale. He had bilateral crepitant rales on lungs, labial herpes lesions and hepatomegaly.

Antibiotherapy was given because of fever, rales in auscultation and infiltration in the roentgenography.

<pre>RESULTS:</pre>Laboratory investigations revealed a hemoglobin of 7.8 g/dl, white blood cell count 3,200/mm³, platelets 39,000/mm³, erythrocyte sedimentation rate (ESR) 123 mm/h, C- reactive protein (CRP) 13 mg/L (normal < 2 mg/L). Electrolytes, renal and hepatic functions and urinalysis were normal. Hemoculture remained sterile. Antibodies against to EBV, CMV and HIV 1-2, however those of parvovirus B19 Ig M and herpes simplex type1 Ig M were positive. Grubel-widal and Brucella-wright agglutination tests were within normal ranges. Bone marrow aspiration was performed. It was not considered as kala-azar and malignancy. Because his relatives diagnosed with malaria in recent, it searched by thick blood drop and plasmodium vivax was observed.
<pre>CONCLUSIONS:</pre>Antimalarial treatment was started as primakin and clorokin .Fever was decreased to normal and hemoglobin level raised to 10.4 g/dl. Patient was directed to malaria therapy center for follow up.

Topic: Parasitic infections

Paper number: 1168

Presentation type requested: Poster Presentation

EFFECT OF GLUCANTIM ON THE TREATMENT OF VISCERAL LEISHMANIASIS

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BACKGROUND AND AIMS: Kala-azar (visceral leishmaniasis) is endemic in southern Iran. We retrospectively evaluated 367 infants and children with visceral leishmaniasis at hospitals affiliated to Shiraz University of Medical Sciences in Fars Province (located in the southwestern part of Iran).
METHODS: This study was conducted at Hospitals affiliated to Shiraz University of Medical Sciences in the southwestern part of Iran. Medical records of all children younger than 15 years with final diagnosis of VL were reviewed. Patients were treated with sodium Glucantim 20 mg antimony/kg daily for 21 days. Response was assessed by defervescence, improvement of general condition, weight and anemia and regression of organomegaly. Drug side effects also were reviewed.
RESULTS: Patients responded well to Glucantim therapy with a cure rate of 96.7%. Relapse was observed in 8.2% (30) of patients. Fever subsided within the first week and hepatosplenomegaly regressed gradually between 2th and 3th weeks. Relapse was observed in 8.2% (30) of the patients. Twenty patients died during therapy (after receiving two to 12 doses of Glucantim). Mortality in this series was 7.3%. Twenty-three patients died during therapy. Jaundice and grossly deranged liver function tests were bad prognostic signs.
CONCLUSIONS: Glucantim was the first-choice treatment and the side effects were very low. The response to Glucantim in our series was excellent.

Topic: Parasitic infections

Paper number: 1236

Presentation type requested: Poster Presentation

CUTANEOUS LEISHMANIASIS: CLINICAL REPORT OF FOUR CASES

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BACKGROUND AND AIMS: Leishmaniasis is caused by different species of Leishmania protozoa. There are four major clinical types: cutaneous (Old and New World), diffuse cutaneous, mucocutaneous, and visceral. Cutaneous leishmaniasis is endemic in Spain, but its incidence in children is low.

METHODS: We reviewed the four cases of cutaneous leishmaniasis treated at Hospital La Paz (Madrid, Spain) since 2000. Diagnosis was made by cutaneous biopsy culture.

RESULTS: Case 1: 14-month-old toddler with an ulcerated lesion that had appeared several months before. He was treated with intralesional pentavalent antimony with a favourable response.

Case 2: 12-year-old boy that showed an erythematous nodule on the cheek that had appeared 4 months before. He received treatment with intralesional pentavalent antimony and healed.

Case 3: 4-month-old baby that had developed an erythematous nodule on malar region. He was successively treated with intralesional pentavalent antimony, imiquimod and topical amphotericin B, showing every time an improvement which was followed by a relapse when treatment was interrupted. He finally received intravenous liposomal amphotericin B for ten days and recovered completely.

Case 4: 9-year-old child that presented with ulcerated lesions on his jaw and right hand after returning from Bolivia. He was treated with oral itraconazole showing no response. Afterwards he was given liposomal amphotericin B for ten days and achieved complete healing.

CONCLUSIONS: Amphotericin B may be a valid option for the treatment of cutaneous leishmaniasis, mainly in those cases unresponsive to conventional drugs. None of the patients treated with amphotericin B showed side-effects.

Topic: Parasitic infections

Paper number: 1417

Presentation type requested: Poster Presentation

A SPORADIC CASE OF VISCERAL LEISHMANIASIS PRESENTING WITH HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS

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BACKGROUND AND AIMS: Visceral leishmaniasis is an endemic infestation in the southeastern region of Turkey. **METHODS:** A 33-month old girl was presented to our university clinic, which is in a non-endemic region for leishmaniasis, with a history of fever, that has started one month earlier. She had been given antibiotics for an upper respiratory infection, but had no benefit from them. She had night sweats and has lost about one kilogram since the onset of her symptoms.

Physical examination revealed an active but pale child with abdominal distention, and splenomegaly.

She had a hemoglobin concentration of 7.9 g/dL, a platelet count of 110 000/ μ L, an erythrocyte sedimentation rate of 88 mm/hour, and a C-reactive protein of 3.62 mg/dL. The albumin/globulin ratio had reversed (albumin: 3.68 mg/dL, globulin: 5.82 mg/dL) and the triglyceride concentration was high (513 mg/dL). All other laboratory test results were normal.

Although bone marrow aspirate and biopsy showed a hypercellular bone marrow without any signs of hemophagocytosis, a treatment protocol consisting of dexamethasone, etoposide, and cyclosporin A was started. A second bone marrow aspiration showed histiocytes with phagocytosed erythrocytes and *Leishmania amastigotes*. **RESULTS:** With the cessation of the above mentioned protocol and starting of amphotericin B, the spleen became non-palpable. The hemoglobin concentration and platelet count returned to normal. **CONCLUSIONS:** Leishmaniasis should be considered in the differential diagnosis of fever of unknown origin and in the etiology of hemophagocytic lymphohistiocytosis.

Topic: Parasitic infections

Paper number: 1460

Presentation type requested: Poster Presentation

CHILD WIRH PEDICULOSIS PUBIS-CASE REPORT

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BACKGROUND AND AIMS: Pediculosis pubis is infectious disease, caused by Crab louse, mainly transmitted as a result of close body contact.

We are presenting 5-years-old child with 6 month history of bluish spots on the trunk. Child was treated with local corticosteroid prescribed by pediatrician.

Clinically maculae ceruleae were found on the trunk, and extremities. Lesions were followed by itch. Mother observed worsening of symptoms and signs of lesions when child is febrile. There was no familial history of similar lesions or other skin disease. Child sleeps alone, attending preschool facility.

Crab lice were found attached to the skin. Parents were also observed and no lice were found, neither other signs of disease. Diagnosis was confirmed by microscopic finding of pediculosis pubis.

Lesions and symptoms regressed after local antiparasitic therapy.

METHODS: Not applicable **RESULTS:** Not applicable **CONCLUSIONS:** Not applicable

Topic: Parasitic infections

Paper number: 1468

Presentation type requested: Poster Presentation

FOUR CASES OF VISCERAL LEISMANIASIS IN CHILDREN WITH DIFFERENT PRESENTING SYMPTOMS

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BACKGROUND AND AIMS: Four cases of visceral leishmaniasis (a disease caused by the parasite *Leishmania donovani*) in children are presented. **METHODS:** A 2 year old child presented with fever for five days and anorexia. The clinical examination, apart from a slightly enlarged spleen, was normal. Laboratory test revealed pancytopenia, ESR: 45mm/1sthour and CRP:56mg/dl. Because the non-effectiveness of the antiseptic treatment and a Coombs test(+), a performed bone marrow biopsy was diagnostic for visceral leishmaniasis. Two infants, <1 year old, presented with fever of gradual onset, poor weight gain, severe hepatosplenomegaly, cardiac murmur and ascites. Pancytopenia, with severe anemia required blood transfusion (Hb:5,5 gr/dl) with Coombs test(+) led to the diagnosis of Leishmaniasis, confirmed by bone marrow biopsy. A 13 year boy presented with weight loss, malaise, physical activity intolerance and jaundice. Clinical findings were hepatomegaly and severe splenomegaly. In the following days began to have fever and pancytopenia, with Coombs test(+) and CRP :42mg/dl. The four children were treated with amphotericin B IV for five days and a second course on the 10th day from the beginning. **RESULTS:** Discussion: Visceral leishmaniasis is characterised by gradual onset of fever, sweats, weight loss, massive hepatosplenomegaly and ascites at the end stage of the disease. Pancytopenia, hyperglobulinemia, Coombs test(+) are characteristics. Differential diagnosis includes EBV infection, brucellosis, bacterial endocarditis, histoplasmosis, military tuberculosis leukemia, lymphoma. Bone marrow biopsy confirmed the diagnosis and the treatment of choice is amphotericin B. **CONCLUSIONS:** Visceral leishmaniasis, although rare, should be kept in mind even though a child has non-characteristic symptoms at the beginning.

Topic: Respiratory tract infections

Paper number: 1000

Presentation type requested: Poster Presentation

RECURREENT CHYLOTHORAX IN CHILDREN

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BACKGROUND AND AIMS: Chylothrax is a rare condition of an abnormal collection of lymphatic Fluid in pleural space. It maybe seen at any age but typically in neonatal and childhood periods. The most causes are unknown but generally divided to traumatic (mostly iatrogenic : thorax surgerys) and nontraumatic (congenital abnormalities of lymphatic system, infection, malignancies) causes. **METHODS:** Case Report **RESULTS:** In this issue we present an 11 years old boy complaining of respiratory distress, wheezing and cough for 4 days. and after a few works up underwent nessecary treatment with impression of idiopathic recurrent chylotharax. **CONCLUSIONS:** Definit diagnosis is the based on pleural effusion analysis: Fat > 400mg% , TG > 200mg% , SG > 1012 and > 90% lymphocyte in gram stain(1).

Primary treatment is conservative and then surgery when it is recurrent or unresponsive to medical supportive therapy(2).

Topic: Respiratory tract infections

Paper number: 1001

Presentation type requested: Poster Presentation

**MACROLIDE RESISTANCE OF GROUP A BETA HAEMOLYTIC STREPTOCOCCUS ISOLATED FROM
OUTPATIENT CHILDREN IN LATVIA**

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BACKGROUND AND AIMS: Group A streptococcus (GAS) is involved in up to 30% of pharyngitis cases, meaning that most children presenting with pharyngitis complaints would not benefit from antibiotic treatment. During the last ten years treatment of GAS pharyngitis has emerged as a critical issue for the increased resistance to macrolides, therefore the determination of antimicrobial susceptibility of a clinical isolate is often crucial for the optimal antimicrobial therapy of infected patients.

The objective was to determine antimicrobial resistance of group A beta haemolytic Streptococcus isolated from outpatient children. **METHODS:** 96 GAS strains isolated from pharynx of outpatients having acute pharyngitis symptoms from July 2002 to April 2006. Antimicrobial resistance of the isolates was determined as described in CLSI standards. Antimicrobial resistance genes (ermA, ermB and mefA) were detected by amplification of streptococcal DNA with specific primers. **RESULTS:** Antimicrobial susceptibility test revealed that all strains tested were sensitive to vancomycin, linezolid, penicillin and ceftriaxone. Simultaneously, high level of resistance to macrolides was found – 75 isolates out of 96 (78%) were resistant to clindamycin and erythromycin. No significant change in resistance incidence was observed.

Studies on molecular basis of resistance showed that majority of strains harboured either the ermA (27), or ermB (23), or both (24). The mefA gene was detected only in one strain.

CONCLUSIONS: There is a high (78%) antimicrobial resistance of GAS to macrolides in outpatient children, which could be explained by frequent macrolide use in outpatient treatment, therefore they would not be the first drug of choice.

Topic: Respiratory tract infections

Paper number: 1002

Presentation type requested: Oral Presentation

EFFECT OF ANTIBIOTICS FOR OTITIS MEDIA ON MASTOIDITIS IN CHILDREN: RETROSPECTIVE COHORT STUDY USING THE UK GENERAL PRACTICE RESEARCH DATABASE

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BACKGROUND AND AIMS: Information is needed on whether mastoiditis has increased in association with the decline in antibiotics prescribed to children by GPs in the UK. **METHODS:** A retrospective cohort study was conducted using the General Practice Research Database. Children aged 3 months to 15 years between 1990 and 2006 were eligible for inclusion. Children temporarily registered with their general practice were excluded. Incidence of mastoiditis and prevalence of antecedent otitis media in affected children was determined. The risk of developing mastoiditis within three months following an episode of otitis media and the protective effect of antibiotic treatment was estimated. **RESULTS:** 854 children had mastoiditis (incidence 1.3 per 10,000 child-years), only a third of whom (35.7%; 305/854) had antecedent otitis media. Risk of mastoiditis, following otitis media, was 1.8 per 10,000 episodes (139/792,623) after antibiotic treatment compared with 3.8 per 10,000 (149/389,649) without treatment, and increased with age ($P < 0.01$). Antibiotics were protective for mastoiditis (OR 0.56; 95% CI: 0.44-0.71). GPs would need to treat 4,831 otitis media episodes with antibiotics to prevent one child developing mastoiditis. Completely stopping prescribing antibiotics for otitis media would result in 178 extra mastoiditis cases per year in children in the UK. **CONCLUSIONS:** Most children with mastoiditis have not previously seen their GP for otitis media. Antibiotics halve the risk of mastoiditis in children with otitis media, but the high number needed to treat to prevent one case rules out treating otitis media as a strategy to prevent mastoiditis. GPs should be alert to acute symptoms of mastoiditis, particularly in older children.

Topic: Respiratory tract infections

Paper number: 1022

Presentation type requested: Oral Presentation

**CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF HUMAN BOCAVIRUS IN DANISH INFANTS -
RESULTS FROM A PROSPECTIVE BIRTH COHORT STUDY**

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BACKGROUND AND AIMS: Human bocavirus (HBoV) is a recently discovered parvovirus that has been associated with respiratory illness. The aims of this study were to determine the frequency and shedding duration of HBoV in infants with acute respiratory tract infection (ARTI) and in asymptomatic infants from a birth cohort of healthy children, and to describe the clinical and epidemiological characteristics of HBoV infections. **METHODS:** HBoV was detected by real-time polymerase-chain reaction of nasal swab specimens obtained from 228 healthy children followed in the community from birth to one year of age during a two-year-period from 2004-2006. Nasal swabs and symptom diaries were collected at monthly home visits. **RESULTS:** HBoV was detected in 57 of 697 (8.2%) nasal swab specimens from children with ARTI, and in 13 of 152 (8.6%) swabs from asymptomatic children. HBoV was present mainly during the winter months. An additional respiratory virus was identified in 27 (47.4%) HBoV-positive samples, rhinovirus and coronavirus-OC43 most frequently. Thirty-four (68%) of 50 children with ARTI shed HBoV for less than one month, 13 (26%) shed HBoV for two months, 2 (4%) for three months, and 1 (2%) for four months. Seven asymptomatic children shed HBoV for less than one month, two children for two months, and one asymptomatic child had five HBoV-positive nasal swabs detected over six consecutive months. **CONCLUSIONS:** Asymptomatic carriage of HBoV is common in infants less than one year of age, and an HBoV-positive test result does not imply that HBoV is the cause of the illness.

Topic: Respiratory tract infections

Paper number: 1055

Presentation type requested: Poster Presentation

VITAMIN A AND ZINC LEVELS IN SOCIOECONOMICALLY DISADVANTAGED CHILDREN WITH COMMUNITY-ACQUIRED PNEUMONIA

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BACKGROUND AND AIMS: Among preventive measures from childhood pneumonia nutritional factors, supplementation zinc and vitamin A, preventing passive smoking, improving socioeconomic conditions and immunization exist. We aimed to determine the nutritional status, investigate social conditions, frequency of vitamin A and zinc deficiencies in children which were hospitalized with the diagnose of community-acquired pneumonia. **METHODS:** Sixty children, who were hospitalized during January 2006 to January 2007, were included in the study, by cross-sectional method. **RESULTS:** Thirty of the children (50%) were girls. Mean age was 3.7±3.6 years (min-max: 1 month-14 years). Socioeconomic levels were low in 73.3%, 38.3% were passive smokers and 33.3% were breast-fed less than six months. Mean levels of vitamin A were 1.0±0.5 µmol/L (min-max: 0.20-2.35), and zinc were 15.4±5.1 µmol/L (min-max: 8.9-31.5). Vitamin A levels were low in 18 (30%) and zinc in 5 (8.3%). Low vitamin A levels were associated with inadequate fruit and vegetable consumption (p=0.002). Low zinc levels were seen in 0-2 year group (p=0.01). Malnutrition was not determined in any case. Lower weight and height percentiles were associated with longer hospital stay (p=0.09). **CONCLUSIONS:** Vitamin A supplementation was offered to children with pneumonia. Also, zinc deficiency should be considered in infancy. Passive smoking should be prevented, education of mothers and population is crucial.

Topic: Respiratory tract infections

Paper number: 1058

Presentation type requested: Oral Presentation

THE ROLE OF RESPIRATORY VIRAL INFECTIONS AMONG CHILDREN HOSPITALIZED FOR COMMUNITY-ACQUIRED PNEUMONIA IN A DEVELOPING COUNTRY

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BACKGROUND AND AIMS: Community-acquired pneumonia (CAP) in children less than 5 years of age in developing countries is usually considered a bacterial infection and is a common cause of death. Limited information is available on the impact of respiratory viruses as a cause of pneumonia in a developing country. **METHODS:** A nasopharyngeal aspirate for viral studies, acute blood buffy-coat for pneumococcal DNA search, blood culture, as well as acute and convalescent serum samples for viral and bacterial serology were collected from 184 children less than five years of age with acute respiratory infection symptoms, pulmonary infiltrates on the first chest radiograph, and resolution of these conditions within 4 weeks of follow-up in Salvador, North-east Brazil. Laboratory investigations for 16 microbes were carried out. **RESULTS:** Evidence of a potential etiologic agent was obtained in 144 (78%) cases. Viral, bacterial, and mixed infections were found in 110 (60%), 77 (42%), and 52 (28%) patients, respectively. Mixed viral-viral (8, 4%), bacterial-bacterial (1, 0.5%), and viral-bacterial (43, 23%) infections were identified, and up to four concomitant microbial infections were detected. Rhinovirus (38, 21%) was the most common viral pathogen and Streptococcus pneumoniae (39, 21%) was the most common bacterial pathogen. **CONCLUSIONS:** Respiratory viral infections were commonly found associated with community-acquired pneumonia. One quarter and one fifth of the cases were mixed viral-bacterial and pneumococcal infections, respectively. These findings indicate the need for more prospective studies on the occurrence of respiratory viral infections in developing countries.

Topic: Respiratory tract infections

Paper number: 1083

Presentation type requested: Poster Presentation

**MYCOPLASMA HOMINIS NECROTIZING PLEUROPNEUMONIA IN AN IMMUNOCOMPETENT ADOLESCENT.
CASE REPORT.**

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BACKGROUND AND AIMS: Mycoplasma hominis (M. hominis) has no cell wall and is insensitive to most antibacterial agents. It has fastidious growth requirements and PCR appears to be the diagnostic test of choice. **METHODS:** Fifteen year-old previously healthy female admitted for pneumonia (clinical picture, leukocytosis, lobar condensation). Oral clarithromycin started, and ceftriaxone added later owing to persisting fever. After 2 weeks of persistent fever: bilateral necrotizing pneumonia, pleural and pericardial effusions on CT scan. Cultures of the material obtained by pleural tap negative for pyogenic pathogens but M. hominis revealed by eubacterial PCR, eventually obtained by culture (sensitive to tetracyclines and quinolones only) and confirmed by specific PCR. M. hominis also identified by specific PCR in the pericardial fluid. Culture and specific PCRs for common respiratory pathogens negative in all specimens obtained during the entire disease period. Doxycycline started and temporally associated with clinical improvement. Full clinical recovery with no sequel on discharge chest X-ray. **RESULTS:** This is the second case report of M. hominis pneumonia in a healthy and immunocompetent individual, and the first one in the pediatric age range. M. hominis is known to colonize the urogenital and respiratory mucosal surfaces. It is a cause of genital infections in adults and may be implicated in neonatal infections. Mainly in immunocompromised hosts it is described as the etiologic agent of serious extragenital infections. **CONCLUSIONS:** In immunocompetent adolescents with pneumonia not responding to macrolides and b-lactams agents, M. hominis should be considered and eubacterial PCR is a useful tool to detect unusual pathogens.

Topic: Respiratory tract infections

Paper number: 1093

Presentation type requested: Oral Presentation

RAPID MULTIANALYTE IDENTIFICATION OF RESPIRATORY TRACT PATHOGENS

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BACKGROUND AND AIMS: Respiratory tract infections are a major cause of mortality, morbidity, and economic loss. Because of the heavily overlapping symptoms and the lack of point-of-care compatible diagnostic methods, pathogen-specific diagnosis and treatment of respiratory infections is seldom possible. The patients are usually treated empirically. We have developed a new rapid immunoassay methodology which would allow automated multianalyte detection of respiratory tract pathogens at the point-of-care, for example, in paediatric units. The analyte portfolio covers a significant proportion of respiratory pathogens, including:

Group A streptococcus

Streptococcus pneumoniae

Influenza A and B viruses

Respiratory syncytial virus

Metapneumovirus

Adenovirus

Parainfluenza 1-3 viruses.

The assay of pneumococcus is based on high negative predictive value. **METHODS:** This one-step methodology is based on a separation-free ArcDia TPX immunoassay technique and the use of dry-chemistry reagents. According to the assay protocol, cotton swab samples taken from the nose and the throat are subjected to quantitative multianalyte testing which provides results within 20 minutes. The performance of the methods has been validated with clinical samples (n=300) and standard preparations by using reference methods based on TR-FIA, ELISA, immunochromatography, and/or culture. **RESULTS:** The results demonstrate that the new methodology enables rapid multianalyte testing of respiratory tract pathogens with high sensitivity (80-100 %) and specificity (98-100 %). **CONCLUSIONS:** The test provides positive results in 20 minutes while the results for low positive and negative samples are reported within two hours. Due to its simplicity and low cost structure, the methodology would be well suited for rapid point-of-care testing, allowing correct diagnosis and pathogen-specific medication.

Topic: Respiratory tract infections

Paper number: 1097

Presentation type requested: Oral Presentation

INCREASING THE DETECTION RATE PATHOGENS ASSOCIATED WITH ACUTE BRONCHIOLITIS IN HOSPITALIZED YOUNG CHILDREN BY USING VARIOUS LABORATORY ASSAYS

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BACKGROUND AND AIMS: In 50-60% of young children with acute bronchiolitis pathogens are detected by routine laboratory assays such as RSV rapid test and direct immunofluorescence assay (DFA). The aim of the study was to determine the pathogens of acute bronchiolitis in hospitalized children by using various diagnostic assays. **METHODS:** The study that was conducted in the peak season between 1.12.05 and 31.3.06 Included were previously healthy children <2 years old hospitalized with acute bronchiolitis. Sputum or nasal wash specimens obtained within 48 hours of admission were tested for RSV by the rapid test, (DFA) and reverse transcription PCR, for Influenza virus, and Para influenza viruses by DFA and reverse transcription PCR, for Adenovirus by DFA and PCR for DNA, for Human Metapneumovirus (HMPV) RNA by reverse transcription PCR and for Bordetella pertussis DNA by PCR.

RESULTS: Overall 477 children were included in the study (95% of all children < 2 years admitted with acute bronchiolitis) in whom 410 pathogen were detected. PCR alone detected 116 (28%) of the pathogens. At least one pathogen was detected in 375/477 (77%) children. RSV was detected in 333 (70%), HMPV in 7(1.4%), Influenza A in 6(1.2%), Bordetella pertussis in 4 (0.7%), Adeno virus, and Influenza B 2(0.3%) in each. **CONCLUSIONS:** 1. Pathogens associated with acute bronchiolitis were detected in most children during the peak season 2. RSV was the sole pathogen in the majority of the children. 3. Using various laboratory techniques mostly PCR was highly effective in increasing detection rate.

Topic: Respiratory tract infections

Paper number: 1098

Presentation type requested: Oral Presentation

INCREASING THE DETECTION RATE OF PATHOGENS ASSOCIATED WITH ACUTE BRONCHIOLITIS IN HOSPITALIZED YOUNG CHILDREN BY USING VARIOUS LABORATORY ASSAYS

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BACKGROUND AND AIMS: In 50-60% of young children with acute bronchiolitis pathogens are detected by routine laboratory assays such as RSV rapid test and direct immunofluorescence assay (DFA). The aim of the study was to determine the pathogens of acute bronchiolitis in hospitalized children by using various diagnostic assays. **METHODS:** The study that was conducted in the peak season between 1.12.05 and 31.3.06 Included were previously healthy children <2 years old hospitalized with acute bronchiolitis. Sputum or nasal wash specimens obtained within 48 hours of admission were tested for RSV by the rapid test, (DFA) and reverse transcription PCR, for Influenza virus, and Para influenza viruses by DFA and reverse transcription PCR, for Adenovirus by DFA and PCR for DNA, for Human Metapneumovirus (HMPV) RNA by reverse transcription PCR and for Bordetella pertussis DNA by PCR. **RESULTS:** Overall 477 children were included in the study (95% of all children < 2 years admitted with acute bronchiolitis) in whom 410 pathogens were detected in 375 (77%) children. PCR alone detected 116 (28%) of the pathogens. As a sole pathogen, RSV was detected in 333 (70%) children, HMPV in 7(1.4%) children, Influenza A in 6(1.2%) children, Bordetella pertussis in 4 (0.7%) children, Adeno virus, and Influenza B in 2(0.3%) each children. **CONCLUSIONS:** 1. Pathogens associated with acute bronchiolitis were detected in most children during the peak season 2. RSV was the sole pathogen in the majority of the children. 3. Using various laboratory techniques mostly PCR was highly effective in increasing detection rate.

Topic: Respiratory tract infections

Paper number: 1103

Presentation type requested: Oral Presentation

ASSOCIATION OF HOST FACTORS WITH THE RADIOLOGICAL DIAGNOSIS OF COMMUNITY-ACQUIRED PNEUMONIA AMONG CHILDREN

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BACKGROUND AND AIMS: Acute respiratory infection (ARI) is the most common cause of illness in children, and community-acquired pneumonia (CAP) is the most serious ARI. Evaluation of suspected CAP is a frequent indication for imaging in children. Our aim was to assess the association of clinical aspects with the radiological diagnosis of CAP.

METHODS: From March/06 to December/07, we attempted to identify all CAP cases among the patients who sought care at the Emergency Room of the Professor Hosannah de Oliveira Pediatric Center, in Salvador, Northeast Brazil. Demographic and clinical data were registered into a standardized form and all chest x-rays were evaluated by the same radiologist. Pneumonia was defined as presence of pulmonary infiltrate (PI).

RESULTS: Out of 30,985 patients seen, 695 (2.2%) had the diagnosis of CAP by the assistant pediatrician. Chest x-ray was available for evaluation in 282 (41%) cases. Detection of a PI was described in 154 (55%) chest x-rays out of which 117 (76%) was alveolar. The median age (months) was 17 (mean 20±14, min. 12 days, max. 59 months). There were 148 (53%) males. The most frequent complaints were cough (99%), fever (91%), difficult breathing (78%) and the most frequent physical findings were tachypnea (73%), crackles (58%), wheezing (51%) and chest indrawing (36%). PI was associated with female sex (54% vs 40%, P=0.02) and fever (94% vs 87%, P=0.03). Absence of PI was associated with difficult breathing (86% vs 72%, P=0.005), wheezing (60% vs 44%, P=0.007) and chest indrawing (42% vs 30%, P=0.04). The difference of mean age was significant when patients with (23±14) and without (16±13) PI were compared (P=0.0001).

CONCLUSIONS: Detection of PI was associated with host factors. Signs and symptoms of asthma were associated with absence of PI.

Topic: Respiratory tract infections

Paper number: 1106

Presentation type requested: Oral Presentation

**THE 2006-2007 RSV SEASON AT THE KING ABDULAZIZ MEDICAL CITY, NATIONAL GUARD HEALTH AFFAIRS,
RIYADH, SAUDI ARABIA**

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BACKGROUND AND AIMS: Respiratory syncytial virus (RSV) is a leading cause of lower respiratory tract infection and hospital admission in infants and young children. Palivizumab is approved for the prophylaxis of RSV in high-risk populations.

Aims:

Describe the 2006-2007 RSV season and compare to the 2003-2004 season.

Describe RSV in high risk populations

Determine the potential benefit of Palivizumab

METHODS: Study period was from October 2006 through April 2007. All cases of clinical bronchiolitis were collected. Patients with confirmed RSV disease by positive enzyme-immune assay on nasopharyngeal samples were determined. Data analyzed included age, sex, month of admission, gestational age, admission and PICU days. Patients ≤ 35 weeks were analyzed for potential benefit from Palivizumab. **RESULTS:** There were 583 children admitted with a diagnosis of bronchiolitis, representing an 85% increase over the 2003-2004 season. 394 were NPA positive for RSV, more than double the 2003-2004 season. The average duration of hospital stay was 6.9 days. 77 children required PICU admission (102 % increase over the 2003-2004 season) with an average stay of 7.8 days. Of the 583 bronchiolitis admissions 92 patients were ≤ 35 weeks gestational age. 48 of these 92 patients met the guidelines for Palivizumab and would have potentially benefited from prophylaxis including 12 PICU admissions. **CONCLUSIONS:** There has been a significant increase in RSV burden both in ward and PICU admissions. This has not been paralleled by an increase in resources. A large number of admissions were among the high-risk population that would potentially benefit from Palivizumab, however cost-benefit remains a concern.

Topic: Respiratory tract infections

Paper number: 1112

Presentation type requested: Poster Presentation

EPIDEMIOLOGICAL AND LABORATORY STUDY OF CHILDREN HOSPITALIZED FOR PNEUMONIA DURING THE YEAR 2007.COMPARATIVE STUDY 2007-2005.

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BACKGROUND AND AIMS: Pneumococcus is referred as the leading cause of community-acquired pneumonia. However, after PCV7 was licensed, in October 2005, its prevalence seems to reduce.

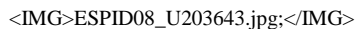
Aim: To analyse the epidemiological and laboratory findings of pneumonia cases –due to pneumococcus or other pathogen- and the comparison with those of 2005.

METHODS: Retrospective analysis of 119 cases of pneumonia hospitalized from 01/01/07 to 31/12/07 and comparison with those of 2005. The diagnosis of pneumococcal pneumonia (P/P) was made by detecting the polysaccharide antigen (PAg) in urine samples. **RESULTS:** TABLE 2007.

Comparing with 2005, it is notable that:

- Laboratory abnormalities and epidemiological findings did not differ significantly.
- 69% were immunized with PCV7 in 2007 against 6.5% in 2005.
- The prevalence of P/P in 2005 was 50% against 18% in 2007.
- The percentage of P/P among patients immunized with PCV7 remained high (70%).
- In 40% of PAg+ patients, ampicillin-sulbactam was changed to a 3rd generation cephalosporin against 17.5% in 2005 and in 0.1% to vancomycin.

CONCLUSIONS: After the implementation of PCV7, P/P overall prevalence is reduced but still, remains high among PAg+ patients. Moreover, pneumococcus resistance to penicillin seems to augment problematically establishing the need for next generation antibiotics.



Topic: Respiratory tract infections

Paper number: 1113

Presentation type requested: Poster Presentation

A 3YEAR PERIOD PNEUMOCOCCAL PNEUMONIA SURVEILLANCE IN CORRELATION WITH THE IMPLEMENTATION OF PCV7.

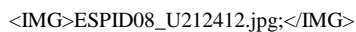
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BACKGROUND AND AIMS: Pneumococcus is referred as the most frequent cause of community-acquired pneumonia though, it appears that its prevalence is being reduced after the implementation of PCV7 (7-valent conjugated vaccine).

Aim: To evaluate the impact of PCV7 on pneumococcal pneumonia during a 3-year period (Jan 2005-Dec 2007), before and after its implementation in the National Immunization Programme of Greece, in October 2005.

METHODS: Retrospective analysis of cases hospitalized for Lower Respiratory Tract Infection (LRTI) from 01/01/05 to 31/12/07. Pneumococcal pneumonia was diagnosed by detecting the polysaccharide antigen by latex agglutination in urine samples.
RESULTS: TABLE
CONCLUSIONS: The prevalence of pneumococcal pneumonia was significantly reduced during the study period demonstrating that PCV7 contributes to the enhancement of herd immunity among paediatric patients. However, the percentage of patients immunized with PCV7 and pneumococcal pneumonia augments, assuming that these cases were due to strains not included in the vaccine.



Topic: Respiratory tract infections

Paper number: 1123

Presentation type requested: Poster Presentation

**CHANGES IN ANTIBIOTICS USAGE FOR UPPER RESPIRATORY INFECTIONS IN PEDIATRIC CLINICS -
NATIONWIDE INVESTIGATIONS IN 2002 AND 2007, JAPAN**

Dr.¹, Dr., Dr., Dr., Dr., Dr.

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⁶Fukazawa Pediatric Clinic, ⁷Yoshida Pediatric Clinic

BACKGROUND AND AIMS: To clarify the changes in antibiotic use for upper respiratory infections in the five years. **METHODS:** The questionnaires were mailed to doctors randomly selected from the members' list of the Society of Ambulatory and General Pediatrics of Japan. Answers were faxed back by 157 members in 2002 and 161 in 2007, respectively. The subjects were children aged between 3 months and 15 years who visited our clinics within 72 hours after onset, and suffered from one or more symptoms and signs including fever of more than 37.5 degrees, cough, nasal discharge and a sore throat. The cases suffering from infections with specific origins (i.e. GABHS infection and adenoviral infection) were excluded. **RESULTS:** The antibiotics ratio in all patients changed significantly from 1443/3055 (47.2%) to 746/2917 (25.6%) (p<0.0001).

The details of the antibiotics are as follows. Penicillins changed from 302 (20.8

Topic: Respiratory tract infections

Paper number: 1133

Presentation type requested: Oral Presentation

DETECTION OF PNEUMONIAS WITH THORACIC SONOGRAPHY AS COMPARED TO CHEST X-RAYS IN PEDIATRIC PATIENTS

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BACKGROUND AND AIMS: To determine the usefulness and sensibility of thoracic ultrasound in patients with suspected pneumonias as compared with the gold standard approach of chest x-rays. **METHODS:** We evaluated consecutive patients who underwent chest x-ray (one frontal projection) for suggestive signs and symptoms of pneumonia. All patients underwent chest ultrasound (multiphased 7,5-10 mHz linear probe) within 24 hours since admission. The operator was blind to the results of chest x-ray. A positive examination consisted of lung atelectasis, hepatization and/or pleural effusion. **RESULTS:** 27 patients were included (11 girls and 16 boys), with a median age of 4 years (range 1 to 11 years), fever onset 3 hours to 15 days before admission; 4 had no auscultatory signs of pneumonia. Chest x-rays were positive in 26 out of 27 patients; the only patient with negative chest x-ray had a positive lung ultrasound (fever onset few hours before imaging studies). Of the 26 patients with radiological diagnosis of pneumonia, 25 patients had ultrasonographic signs.

The sensibility of thoracic ultrasound for detecting pneumonias as compared to chest x-rays was good (25/26, 96%). In one single case with negative x-ray, the ultrasound allowed the early diagnosis and localization of pneumonia.

CONCLUSIONS: Thoracic ultrasound is a safe, fast and reliable test to diagnose pneumonias in children, as compared to conventional chest x-ray examination. The advantages of this technique are that it can be performed at the bedside, can be repeated without side effects and avoids ionizing radiations to the patients.

Topic: Respiratory tract infections

Paper number: 1145

Presentation type requested: Poster Presentation

COMMUNITY-ACQUIRED PNEUMONIA IN CHILDREN ATTENDING EMERGENCY ROOMS IN THE SOUTH AREA OF MADRID DURING 2002-2003 WINTER SEASON

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BACKGROUND AND AIMS: To describe characteristics of pediatric pneumonia, a retrospective/multicentre study was performed in South Madrid area. **METHODS:** Records of all patients (1-24 months), with pneumonia suspicion, attending emergency departments in 5 hospitals and 3 primary care centres (1-Dec-2002 to 28-Feb-2003) were reviewed. Comparisons were performed by Chi-square test. **RESULTS:** 533 patients (13.23 ± 0.27 months; 52% males) were included: 46.5% attended nursery schools, 25.3% immigrants, and 19.7% had received at least one dose of 7-valent conjugate vaccine. Clinical diagnosis was performed based on fever (94.5%), cough (93.9%), tachypnea (53.7%) and auscultatory findings (70%); 97.4% patients presented abnormal chest Rx (lobar pattern the most frequent). Pleural effusion was present in 3.2% and atelectasis in 3.5% patients. Within the previous two weeks, 17.2% had received antibiotics (amoxicillin +/- clavulanate: 72.7% cases). Blood cultures were obtained in 68.2% cases, being positive 4.4% (50% of them yielding *S. pneumoniae*). Respiratory samples were obtained in 28.5% patients, yielding positive results 39.7% (91.7% of them due to syncytial respiratory virus). Hospitalisation was required in 62.8% patients (length of stay: 5.78 ± 0.25 days). Final diagnoses were: definitive pneumococcal pneumonia (1.2%), highly probable pneumococcal pneumonia (17.7%), probable pneumococcal pneumonia (30.8%), possible pneumococcal pneumonia (34.4%) and other pneumonia types (15.9%). **CONCLUSIONS:** Among patients requiring hospitalisation, rate of nursery school attendance was lower (41.2% vs. 56.0%; p=0.002), and rate of immigrants was higher (28.8% vs. 18.5%; p=0.019). Hospitalisation rates were higher in highly probable (88.0%) than in probable/possible pneumococcal pneumonia (63.0%) or other pneumonias (58.4%) (p<0.001).

Topic: Respiratory tract infections

Paper number: 1179

Presentation type requested: Poster Presentation

EVALUATION OF THE ROLE OF MYCOPLASMA PNEUMONIAE IN CHILDHOOD PNEUMONIAS

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BACKGROUND AND AIMS: Mycoplasma pneumoniae known as the most frequent agent of atypical pneumonia, is also the leading cause of pneumonia in school-age children and young adults. Mycoplasma pneumoniae accounts for 7- 40% of all community-acquired pneumonias among children 3-15yr of age. In our study we aimed to investigate the incidence of Mycoplasma pneumoniae in childhood pneumonias.

METHODS: Between January 2003- December 2007, 282 cases aged between 5-15 years and hospitalized with the diagnosis of pneumonia were included in the study. Latex Agglutination Test ,a calitative test to determine specific IgM type antibodies against Mycoplasma pneumoniae, was used.

RESULTS: 111 of total 282 cases were Mycoplasma pneumoniae antibody positive (39.4%). The highest ratio of Mycoplasma pneumoniae antibody positivity was found at the age of 8 (18.9%). 57 of 111 cases were male (51.4%) and 54 were female (48.6%). Pneumonia was found to be seen mostly in the season spring (35%) and in the month of May. Among all cases of pneumonias, Mycoplasma pneumoniae antibody positivity ratio was highest in May (15.3%). Of 111 cases 70 had lobar pneumonia (59%), 41 had bronchopneumonia (36.9%), 11 had pleural effusion (9%)

CONCLUSIONS: The occurrence of mycoplasmal illness is related, in part, to age and pre-exposure immunity. Overt illness is unusual before 3 yr of age. Younger children appear to have frequent mild or subclinical infections , and reinfections appear to be common. The peak incidence of illness occurs in school-aged children.

Topic: Respiratory tract infections

Paper number: 1193

Presentation type requested: Poster Presentation

PULMONARY INFECTIONS IN PRIMARY IMMUNODEFICIENCY

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BACKGROUND AND AIMS: Primary immunodeficiency diseases are disorders in which part of the body's immune system is missing or does not function properly due to intrinsic defects in the immune system. These patients have an increased susceptibility to pulmonary complications as well as to primary infections. This study was to illuminate the pulmonary infections of primary immunodeficiency patients and characterize the pattern according to specific immune defects. **METHODS:** We reviewed 37 patients with primary immunodeficiency at Severance hospital in Korea. **RESULTS:** Most of them have been diagnosed from their recurrent respiratory infections and had suffered from pulmonary complications. In some cases, there were unique features of lung abnormalities in specific defects. Hypogammaglobulinemia patients showed peribronchial wall thickening or bronchiectasis, and pneumatocele or emphysematous changes were characteristic features in hyperIgE syndrome. On microbiological date, various bacteria including *S. aureus*, *P. aeruginosa*, *S pneumoniae* were isolated in hypogammaglobulinemia patients' sputum or ear discharge. And in some patients with cell-mediated immune defect, yeast and ameba were isolated in sputum and bronchial washing fluid respectively.

CONCLUSIONS: Infections account for most of these complications, but the host reaction to infection seems to lead characteristic findings that could be helpful for diagnosis. The physician should play an important role for the early diagnosis of the child with a primary immunodeficiency to prevent pulmonary complication.

Topic: Respiratory tract infections

Paper number: 1195

Presentation type requested: Poster Presentation

DETECTION OF METAPNEUMOVIRUS (hMPV) AND BOCAVIRUS (hBoV) IN CHILDREN LESS THAN 5 YEARS OLD HOSPITALIZED WITH LOWER RESPIRATORY TRACT INFECTIONS

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BACKGROUND AND AIMS: To evaluate the role of hMPV and hBoV infection in children hospitalized with lower respiratory tract infections (LRTI)
METHODS: 105 nasopharyngeal specimens were collected. RSV, Influenza A and B, Parainfluenza 1-3, and adenovirus were detected by conventional techniques. hMPV was detected by enzyme-immunoassay (Biotrin International) and real-time RT-PCR (Prodesse). hBoV was detected by PCR assay based on a previously described sequence. The clinical characteristics were prospectively gathered. Disease severity was determined by the length of hospitalization days and requirement for supplemental oxygen
RESULTS: Fourteen samples (13%) were positive for hMPV and 29 (30%) were positive for hBoV, being third and second in frequency behind the RSV, respectively. The percentage of children who required supplemental oxygen was higher in children infected with hMPV ($p < 0.036$) than in not infected with hMPV, and not difference was detected with hBoV ($p = 0.253$). There were no differences in terms of hospitalization days in children infected and non-infected with both hMPV as hBoV. In 5 of the 14 hMPV cases (36%) there was coinfection. In 15 of the 29 hBoV cases (52%) there was coinfection, being in 9 cases the infection severe (60%). When hBoV was detected alone, the infection was severe in only 4 cases (28.6%)
CONCLUSIONS: 1. hMPV and hBoV are viruses frequently found in children hospitalized with LRTI.

2. hMPV could be considered an etiological agent of severe viral respiratory infection.
3. The hBoV pathogenicity requires further investigation, but, our results seem to show an important role in LTRI in children.

Topic: Respiratory tract infections

Paper number: 1197

Presentation type requested: Poster Presentation

THE BURDEN OF HOSPITALIZATIONS DUE TO ACUTE BRONCHIOLITIS OF YOUNG CHILDREN IN ISRAEL

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BACKGROUND AND AIMS: Acute Bronchiolitis (AB) is common cause of young children hospitalizations. The aim was to assess the burden of disease among hospitalized children in Israel. **METHODS:** The study was conducted in the peak season between 1.12.05 and 31.3.06. Included were previously healthy children < 2 years hospitalized with AB in 3 medical centers in northern Israel. From each child data were collected regarding clinical course, and length of hospitalization. Total hospitalization records were extracted from computerized database for each hospital. A projection for Israel was made based on hospitalization periods presented by Ministry of Health. **RESULTS:** Overall 447 children were included (95% of children hospitalized with AB during the study period) comprising 10.7% of all hospitalized children. Complete data was available for 340 children (62% males) in whom the mean age was 12 weeks, and 79% were younger than 6 months. No death attributed to AB was recorded. The mean length of hospitalization was 4.5 days (0-178 days), and 17.6% of all hospitalization days during the study period were attributed to AB. It is estimated that during the peak season, 4100 children < 2 years with AB are hospitalized in Israel, contributing almost 18000 hospitalization days concentrated in this limited time period. This must be an underestimation since children older than 2 years and all immune compromised children were not included in the study survey. **CONCLUSIONS:** The burden of AB hospitalizations in Israel is significant. Anti-RSV vaccine would be expected to greatly reduce this burden on the health care system.

Topic: Respiratory tract infections

Paper number: 1200

Presentation type requested: Oral Presentation

INCIDENCE OF COMMUNITY-ACQUIRED PNEUMONIA AMONG CHILDREN UNDER 5 YEARS OF AGE IN SALVADOR, NORTHEAST BRAZIL, IN A 6-MONTH PERIOD

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BACKGROUND AND AIMS: Community-acquired pneumonia(CAP) imposes a big problem to childhood health, mainly in developing countries. Nonetheless, information on CAP incidence is scarce and our aim was to provide such information.**METHODS:** This is a prospective, population-based cohort study conducted in 4 communities in the urban zone of Salvador, Northeast Brazil. Every child aged less than 4 years living in the study area and without known immunodeficiency; cystic fibrosis; heart disease; neuromuscular disorder; chronic respiratory illness, except asthma, or HIV-infected mother was invited to participate in the study. After receiving informed consent signed by parents or legal guardians, information on child's health and life style was obtained by a standardized form. Each child was followed by home visit or telephone call, every week. Whenever a child presented with cough and respiratory distress, a thorough investigation was performed in a sentinel paediatric hospital and registered into another standardized form. Chest x-ray was read by a blind pediatric radiologist.**RESULTS:** 1095 children were followed up in the first 6 months of the study. The median age at recruitment was 20months (mean: 21mo, minimum: 3days, maximum: 3years) and 537(49%) were males. The incidence of CAP was 62/1000child-year (95%CI: 48-79/1000child-year) (clinical diagnosis), 27/1000child-year (95%CI: 18-40/1000child-year) (presence of tachypnea according to the WHO guidelines) and 24/1000child-year (95%CI: 16-36/1000child-year) (presence of pulmonary infiltrate on chest x-ray). Alveolar infiltrate was described in 77% of the radiologically diagnosed cases.**CONCLUSIONS:** The maximal burden of CAP among children was 7.9% yearly. In order to add on health policy, investigation of etiology is a priority.

Topic: Respiratory tract infections

Paper number: 1207

Presentation type requested: Poster Presentation

INFECTION BY NOCARDIA IN A CYSTIC FIBROSIS PATIENT

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BACKGROUND AND AIMS: Infection by nocardia is an uncommon disease, affecting immunocompromised patient. This bacteria has rarely been isolated from cystic fibrosis patients (CF), especially without any oral corticosteroids. We report a case of a patient with CF harbouring *Nocardia farcinica*.
METHODS: The patient is a 18-year-old male with diagnosis of CF at 8 years old (F508 del/G85E). An allergic bronchopulmonary aspergillosis was treated in 1998 with itraconazole and a primo colonization with *Pseudomonas aeruginosa* was eradicated in 2003. From may 2006, he presented recurrent left and right pneumothorax.

In june 2006, he presented with dyspnea, fever, and nodular eruption on the ankles. Chest X-Ray and CT scan revealed a right pneumothorax, severe bronchiectasis and bilateral alveolar consolidation. Sputum specimen isolated *Nocardia farcinica*, without any other pathogens. A treatment with intravenous cotrimoxazole associated with imipenem and amikacin during 3 weeks was initiated followed by oral cotrimoxazole during 9 months. The symptoms and the alveolar consolidation CT scan improved.

During 2007, his respiratory condition worsened. His FEV1 declined from 50 to 26 % predicted, pneumothorax recurred. He was presenting a chronic colonization with *Pseudomonas aeruginosa* and was expecting a lung transplantation.

RESULTS: *Nocardia*, a gram positive bacilli can cause mainly pulmonary infection, usually in the setting of immunodepression. The most frequent species is *Nocardia asteroides*. In CF, very few cases have been reported, almost always *Nocardia asteroides* but exceptionnaly *Nocardia farcinica*.
CONCLUSIONS: In case of worsening pulmonary condition in CF patients, *Nocardia* should be searched, as others unusual pathogens.

Topic: Respiratory tract infections

Paper number: 1226

Presentation type requested: Poster Presentation

COMPARISON OF AN INTERFERON-GAMMA ASSAY WITH THE TUBERCULIN SKIN TESTING IN CHILDREN FOR THE DIAGNOSIS OF TUBERCULOSIS INFECTION AND DISEASE

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BACKGROUND AND AIMS: The tuberculin skin test (TST) has been used as the standard method for the diagnosis of tuberculosis (TB) infection but it often provides false positive and false negative results. New immunodiagnostic methods have been developed but the pediatric data are limited. In this study, the QuantiFERON-TB Gold In tube method (QFT-IT) was assessed in the evaluation of children with tuberculosis infection and disease and was compared to the TST. **METHODS:** Both TST and QFT-IT were prospectively evaluated in high risk children examined for contact with adult tuberculosis (n= 55) and in patients with tuberculosis disease (n=23). **RESULTS:** QFT-IT was positive in 6/6 children with confirmed TB (extrapulmonary 4, pulmonary 2), in 5/5 children with probable and in 4/12 with possible pulmonary TB. Result was indeterminate in 2 cases. In all BCG (-) active cases (n=11) there was an excellent agreement between TST and QFT-IT results except in one TST (-), QFT-IT (+) patient with meningitis. Among high-risk children contacts of adult TB cases QFT-IT was positive in 15/31 (48%) of household contacts, in 7/15 (47%) of those exposed a few hours each week and in 0/9 of those with a few, rare contacts. In BCG (-) contacts (n=30) there was an excellent correlation between TST (pos in 10/30, 33.3%) and QFT-IT (positive in 11/30). By contrast, TST was positive in all BCG (+) contacts while QFT-IT was positive in 11/25 (44%). **CONCLUSIONS:** The QFT-IT method is a useful tool in clinical practice for the diagnosis of tuberculosis infection especially in BCG-vaccinated children

Topic: Respiratory tract infections

Paper number: 1238

Presentation type requested: Poster Presentation

MYCOPLASMA PNEUMONIAE INFECTION IN PRESCHOOL AND SCHOOL-AGED CHILDREN

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BACKGROUND AND AIMS: Mycoplasma pneumoniae is a major cause of lower respiratory tract infection (LRTI) in children older than 5 years old, while rarely affects preschool children. Aim of the present study was to investigate the epidemiological, clinical and laboratory characteristics of M. pneumoniae-LRTI in children hospitalized in a tertiary pediatric unit during 1- year period. **METHODS:** Titers of IgG and IgM antibodies specific for M. pneumoniae were determined in blood serum samples by ELISA . PCR was performed for detection of M. pneumoniae in genetic material extracted from nasopharyngeal swab samples. **RESULTS:** Out of 306 children aged 1 month to 14 years old, hospitalized with LRTI, current infection with M. pneumoniae was diagnosed in 26 (8.5%), while coinfection with adenovirus or RSV was identified in three children. The majority of patients (16/26, 61.5%) were > 5 years old, 8/26 (30%) 2-5 years old, while, interestingly, 2/26 (7.7%) were 6 months old-infants with acute bronchiolitis. Most common symptoms included fever (88.5%) and cough (88.5%). Dyspnoea signs were more frequently detected in younger children (23.1%).

Consolidation was the most common finding in the chest X-ray (14/26, 53.8%). Two children had pleural effusion. Interstitial changes were reported in 10/26 children (38.5%) and more frequently in children aged < 5 years. A girl suffered from pancreatitis as a complication during the disease. All children recovered completely.

CONCLUSIONS: M. pneumoniae is a common cause of infection of the LRT in infants and preschool-aged children, although there may be differences in the clinical presentation and laboratory findings compared to older ones.

Topic: Respiratory tract infections

Paper number: 1267

Presentation type requested: Poster Presentation

THE FIRST YEAR OF ENHANCED SURVEILLANCE OF PNEUMOCOCCAL EMPYEMA IN UK CHILDREN

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BACKGROUND AND AIMS: The incidence of paediatric empyema has risen dramatically over the last decade. Most cases in the UK are related to infection with *S. pneumoniae*, with serotype 1 predominant. The heptavalent pneumococcal conjugate vaccine was introduced into the UK national immunisation schedule in September 2006. The vaccine does not contain antigen for serotype 1. Enhanced national surveillance of paediatric pneumococcal empyema was introduced in parallel with vaccine introduction in collaboration between the Health Protection Agency and members of the British Paediatric Respiratory Society.

METHODS: An initial screening PCR for pneumolysin is performed on culture negative specimens of empyema fluid. If positive, the specimens undergo serotyping using the Bio-Plex pneumococcal serotype assay for serotypes. 1, 3, 4, 5, 6A, 6B, 7F/A, 8, 9V, 14, group 18, 19A, 19F and 23F.

RESULTS: The median age at the time of sampling was 5.1 yrs (range 0.2 yrs – 16.8yrs). 59% (n=50) of samples came from children age 5yrs or under. Most samples were received in either December (n=12) or March (n=14). Serotype 1 was the most frequently detected serotype, found in 63% (52/83) of specimens. In children under 2 years (n=19), serotype 19A (n=5) and serotype 3 (n=5) were detected most frequently.

CONCLUSIONS: Ongoing surveillance of changes in the incidence and serotype prevalence patterns of empyema will be important for monitoring changes in the natural epidemiology of this condition, and to detect any influences of the new conjugate vaccine. This and future data will be important for planning policy in regard to the introduction of future pneumococcal vaccines.

Topic: Respiratory tract infections

Paper number: 1287

Presentation type requested: Poster Presentation

ADENOVIRUS IN INFANTS HOSPITALIZED FOR BRONCHIOLITIS

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BACKGROUND AND AIMS: Bronchiolitis is the most common lower respiratory tract infection in infants under 6 months of age. The objective of this study is to determine the viral etiology of children hospitalized for bronchiolitis.**METHODS:** Two hundred and fifty infants younger than one year old were hospitalized for bronchiolitis between November 2006 – December 2007 and 104 of them were included in the study group. At the time of hospital admission, physical examination findings of the cases were recorded and nasopharyngeal aspirates were obtained for virus isolation from each of the cases. The clinical course was documented during the hospital stay. **RESULTS:** The male/female ratio was 1.2:1 and the median hospital stay was 8.4 days. Eighty four percent of the cases were aged less than 6 months (median age 92 days). Viral etiology was confirmed in 62.5 % of the patients. Adenovirus was isolated in 19.8 % of the cases. Other viruses isolated were : RSV (18.7 %), parainfluenza 1-2 (10.6 %), Influenza A (8.6 %) and influenza B (4.8 %). Adenovirus was the most frequent cause of bronchiolitis in our study group.**CONCLUSIONS:** RSV is always mentioned at the top of the spectrum of causing agents in bronchiolitis but adenovirus had taken the first place in our study group. In this study, we aimed to remind that the cause of bronchiolitis is mostly viral agents in infants under six months old and it is important to avoid unnecessary antibiotic use in these cases.

Topic: Respiratory tract infections

Paper number: 1296

Presentation type requested: Poster Presentation

PULMONARY ABSCESS WITH LONG-LASTING FEVER: A CASE REPORT

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BACKGROUND AND AIMS: Pulmonary abscess is a result of lung infection that leads to destruction of lung parenchyma, forming cavitations containing purulent material and central necrosis. **METHODS:** In this article we present a four years old male complaining from fever lasting for one week, protective cough and fatigue, diagnosed as lung abscess. **RESULTS:** The case was a four years old child having absence seizures since ten-months-old and using valproic acid. He was admitted with the complaint of fever, throat pain and was diagnosed as acute tonsillitis and begun to use cefuroxime axetil. After three days of therapy he was admitted to hospital again because of unresponsive fever, but he did not use the drug well. The diagnosis was acute tonsillitis and cefuroxime axetil was changed to amoxicillin-clavulanate. After one week he still had fever and fatigue but physical examination was normal. The laboratory findings were as the leukocyte count: 19800/mm³, CRP: 112mg/L. The chest radiograph showed a mass with proper counter in the upper zone of right lung. In the CT lung abscess was seen and teicoplanin + meropenem treatment was began. The fever was over on fourth day. He was operated on sixth day for the abscess. The hemoculture and abscess culture were normal. The immunologic findings were also normal. He was discharged after twenty one days treatment period. **CONCLUSIONS:** The history, physical examination and radiography findings are important in the diagnosis of pulmonary abscess. In this article we wanted to emphasize that lung parenchyma can present with high fever and toxic clinics.

Topic: Respiratory tract infections

Paper number: 1299

Presentation type requested: Poster Presentation

CLINICAL PERTUSSIS: WHAT ABOUT CASES WITH AND WITHOUT MICROBIOLOGICAL CONFIRMATION?

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BACKGROUND AND AIMS: It is intended to distinguish the clinical and epidemiological characteristics of the cases with microbiological confirmation of pertussis of those that was not achieved. **METHODS:** Descriptive study of patients ≤ 3 years treated at the emergency department in 2006-2007 with suspected whooping cough. Culture and polymerase chain reaction (PCR) for *Bordetella pertussis* was performed in nasopharyngeal samples. **RESULTS:** Sixty-six clinically suspected cases of whooping cough were addressed in our Emergency Department. We obtained microbiological confirmation in 18 children (27%), all by PCR; 3 of them also had a positive culture for *B. pertussis*. Of cases with microbiological confirmation, 66.8% were concentrated in the months of August and September. Comparing the two cohorts there were not significant differences in age (p: 0,408) or sex (p 0,317). 72,2% of the confirmed cases weren't properly immunized, versus 51% of the unconfirmed, with significant differences among patients of ≥ 2 months (p: 0,005) Microbiological confirmed cases have a very low incidence of associated cold symptoms (22,2 vs. 77,8.%), with significant difference (p: 0,006). The treatment was discontinued in 38 out of 48 cases without microbiological confirmation, but not in 10 because the clinical suggestive or the patients severity were too high. The outcome was satisfactory in all patients. **CONCLUSIONS:** The PCR for *B. pertussis* in nasopharyngeal samples is the most sensitive method to detect whooping cough. The incidence picked highest among the months of August and September. Most confirmed cases are presented without associated cold symptoms.

Topic: Respiratory tract infections

Paper number: 1301

Presentation type requested: Poster Presentation

RAPID STRIP TEST FOR DIAGNOSIS OF STREPTOCOCCAL PHARYNGITIS IN CHILDREN :IRAN

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BACKGROUND AND AIMS: To compare between Rapid strip test and conventional pharyngeal culture" for diagnosis of streptococcal pharyngitis in children.**METHODS:** This cross sectional study had done in 187 children (less than 14 years) with fever and pharyngitis admitted to pediatrics clinic in Rasul Akram hospital and Shahid Heidari clinic in Tehran during 2006- 2007. Throat swab obtained from every case. Rapid strip test for detection the streptococcal antigen on throat swab and pharyngeal conventional culture on blood agar in second step had done. We compared the results of two methods.

Chi square values (CI 95%, $p < 0.05$) were calculated for all categorical variables

RESULTS: In 34.5% of cases streptococcal antigen detected in pharyngeal specimen by Rapid strip test. We detected group A Streptococcus in 15.7% of pharyngeal culture. There was no correlation between two methods ($PV < 0.1$). Probably, negative pharyngeal culture results are due to antibiotic usage in near half (43.2 %) of patients. Positive rapid test results in pharyngeal swab was age dependent. ($P < 0.05$)

There was good correlation between observation of petechia in pharynx and positive rapid test in pharyngeal swab $P < 0.004$. Throat culture results was related to previous antibiotic usage in cases $P < 0.03$

CONCLUSIONS: Diagnosis of streptococcal pharyngitis was done in most cases by Rapid strip test with negative pharyngeal culture. Presence of " petechia in pharynx " was highly suspicious for streptococcal pharyngitis in cases. Diagnosis of streptococcal pharyngitis only based on clinical findings are misleading in most times. Rapid strip test in pharyngeal swab are helpful for rapid diagnosis and treatment.

Topic: Respiratory tract infections

Paper number: 1328

Presentation type requested: Poster Presentation

MYCOPLASMA, CHLAMYDIA AND VIRAL INFECTIONS IN CHILDREN WITH CHRONIC COUGH.

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BACKGROUND AND AIMS: to study the role of mycoplasma, chlamydia and viral infections in children with chronic cough. **METHODS:** Examination of 80 children (2–17 y.o.), 50 boys and 30 girls, suffering chronic cough for more than 6 weeks. The virologic research of aspirates from the upper respiratory tract on presence of originators of acute respiratory diseases was carried out. **RESULTS:** Practically at each child those or other infectious agents, in most cases in associations (70 %) were taped. Adenoviruses were taped more often (61, 4 %). "Latent" serovariants of adenoviruses, which can persist in lymphoid tissue for a long time were taped in overwhelming majority (77, 1 %), so-called "active" adenoviruses, which often can be the originators of acute respiratory tract infectious - in 22, 9 %. The parainfluenza viruses were taped almost at half of surveyed (43, 2 %), the antigens of respiratory syncytial virus were found at 30 % of children. Mycoplasma pneumoniae antigens were taped in 26 % of cases. Chlamydia trachomatis and Chlamydia pneumoniae antigens were taped much less often (13, 7 % and 4, 1 %). The virus of simple herpes was taped at 19, 2 % of surveyed. The antigens of cytomegalovirus were found out in 24, 7 % of cases. **CONCLUSIONS:** There is possible to find the persistence of various associations of originators of virus infections, such as adenoviruses, parainfluenza, the respiratory syncytial virus and the intracellular originator - Mycoplasma pneumoniae in children with chronic cough. The Chlamydia trachomatis infectious apparently has less essential importance at this pathology.

Topic: Respiratory tract infections

Paper number: 1332

Presentation type requested: Oral Presentation

METEOROLOGIC FACTORS AND ACUTE RESPIRATORY INFECTIONS (ARI) OF CHILDREN IN MAINZ 2001 - 2006

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BACKGROUND AND AIMS: While information on the onset of epidemics of ARI is important e.g. for the optimal timing of vaccination (e.g. RSV) and treatment strategies (e. g. influenza), there is, however, a striking lack of knowledge about the seasonality of ARI. Aiming at better predictions on the activity of ARI-pathogens, the influence of climate on hospitalization rates for ARI in children was investigated.**METHODS:** From 2001 to 2006 3,044 samples from hospitalized children up to 16 years were tested for 19 non-colonizing ARI-pathogens by multiplex-RT-PCR at the Department of Paediatrics, University of Mainz (completeness: 70%). The Institute for Atmospheric Physics, University of Mainz, provided data on temperature, wind velocity, relative humidity and air pressure. Associations between monthly hospitalizations and meteorological parameters were analysed by Spearman correlations and time-series analysis.**RESULTS:** Mean monthly temperature, relative humidity and air pressure correlated significantly with the number of hospitalizations due to ARI per month. Mean temperature correlated highly with the frequency of common ARI pathogens (RSV: $rs = -0.80$, influenza A $rs = -0.57$, rhinovirus : $rs = -0.51$, adenovirus: $rs = -0.45$) and was a significant predictor on hospitalization rate due to these in the time-series analysis ($p \leq 0.01$). For RSV-hospitalizations in an ARIMA model including a seasonal component, relative humidity and air pressure R^2 was 0.73.**CONCLUSIONS:** Seasonality of ARI in children can partially be explained or even predicted by meteorological factors. Based on weather forecasts, the model presented may help to predict the onset of specific ARI epidemics in the future.

Topic: Respiratory tract infections

Paper number: 1339

Presentation type requested: Oral Presentation

**CLINICAL BURDEN OF INFLUENZA INFECTION AMONG CHILDREN <15 YEARS: RESULTS FROM
RETROSPECTIVE REVIEW IN KOREA, 2004-2007**

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BACKGROUND AND AIMS: Globally, the influenza virus is a common pathogen for children's clinic visits and hospitalizations, but few studies describe this impact on Korean children. **METHODS:** A total 1370 cases of lab-confirmed influenza were identified from March 2004 to June 2007. We conducted a review of records of children < 15 years treated for lab-confirmed influenza in five hospitals in Korea to describe trends in patient characteristics. **RESULTS:** Over the study period, 966 (71%) hospitalizations and 404 (29%) clinic visit cases were identified. Of 1215 cases, 808 (67%) and 407 (33%) were confirmed with influenza A and B respectively and 342 (42%) and 90 (22%) were <2 and 651 (81%) and 276 (68%) were <5 years. Of 1369 cases, 98% had fever and 31% had fever duration > 5 days among 1285. Diagnosis was made as LRI in 32% URI in 38% and ILI in 19% of cases. Antibiotics were used on 820 cases (60%) and Oseltamivir on 397 (29%). Among inpatients, children < 1 and <2 years had average LOS of 6 and 5.4 days. Among 428 with influenza vaccination record, 221 (51.6%) cases were vaccinated 207 (48.4%) were unvaccinated. **CONCLUSIONS:** From the analysis, Influenza A was found to be more frequent in incidence with younger age distribution than Influenza B. This study showed that influenza virus is critical pathogen to Korean children and furthermore, confirmed the need for further studies on younger age groups to reduce overall burden of pediatric influenza and improve vaccination policy in Korea.

Topic: Respiratory tract infections

Paper number: 1354

Presentation type requested: Poster Presentation

EFFICACY OF INACTIVATED INFLUENZA VACCINE IN PREVENTING ACUTE OTITIS MEDIA (AOM) IN CHILDREN WITH RECURRENT UNCOMPLICATED OR COMPLICATED AOM

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BACKGROUND AND AIMS: Influenza vaccine is effective in preventing acute otitis media (AOM) in day-care children and in those with a history of recurrent uncomplicated AOM. We evaluated the preventing efficacy of influenza vaccine in children with a history of recurrent AOM complicated (rC-AOM) or non complicated (rUN-AOM) by spontaneous perforation.

METHODS: In November 2006, 180 children aged 1-4 years with a history of rUN-AOM or rC-AOM (≥ 3 episodes in 6 months) randomly received an inactivated virosomal influenza vaccine (Inflexal V Berna) or no treatment. During a 6-month follow-up pneumatic otoscopy and tympanometry were performed every 4-6 weeks and in case of respiratory symptoms.

RESULTS: 90 children (48 rUN-AOM, 42 rC-AOM) were vaccinated while 90 (49 rUN-AOM, 41 rC-AOM) were controls. Among 97 children with rUN-AOM, AOM was diagnosed in 20 (41.7%) vaccinated children compared to 39 (79.6%) controls ($p=0.0002$). The mean number of episodes of AOM was 0.62 ± 0.87 in those vaccinated compared to 2.14 ± 1.59 in controls (reduction 70%, $p < 0.001$). Among 83 with rC-AOM, AOM was diagnosed in 29 (69.1%) vaccinated children compared to 35 (85.4%) controls ($p=0.13$). The mean number of episodes of AOM was 1.31 ± 1.26 in those vaccinated and 2.00 ± 1.45 in controls (reduction 34.5%, $p=0.02$).

CONCLUSIONS: The preventing efficacy of inactivated virosomal influenza vaccine is significantly greater in children with rUN-AOM compared to those with rC-AOM. In children with rC-AOM influenza vaccine does not significantly interrupt recurrences but it is effective in reducing the number of new episodes.

Topic: Respiratory tract infections

Paper number: 1364

Presentation type requested: Oral Presentation

HIGH DISEASE BURDEN AND PROPENSITY FOR ASTHMA IN RHINOVIRUS-ASSOCIATED INFECTIONS IN HOSPITALIZED CHILDREN: COMPARISON WITH INFLUENZA

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BACKGROUND AND AIMS: For a long time, human rhinoviruses (RVs) have been considered as mild upper respiratory pathogens, drawing little attention. Nevertheless, in the last few years, using sensitive detection methods and considering the association between common colds (mostly RV-induced) and asthma exacerbations, their role in respiratory disease has been revisited. The purpose of this study was to evaluate RV-associated disease burden in comparison to another important respiratory pathogen, influenza virus (IFV).

METHODS: We conducted a prospective study in 1378 hospitalized children (aged 6 months to 14 years) during 3 consecutive years (2003-2005). Inclusion criteria were presence of respiratory symptoms or fever ($>37.8^{\circ}\text{C}$) at admission, upon which a questionnaire and nasal aspirate were obtained. The presence of IFV (H1, H3, B) and RV was assessed by RT-PCR.

RESULTS: Yearly prevalence of IFV and RV were 13% and 41%, respectively, while during the 'influenza season' 21% and 45%. Double infections were infrequent (4%). RV-associated cases were higher in infants (0.5-2y: 49% vs $>5\text{y}$: 27%), while IFV infection was marginally higher in toddlers (0.5-2y: 11%, 2-5y: 16%). RV-associated disease burden was higher irrespective of admission cause, however, it was significantly higher in children admitted for asthma (RV/IFV=11) than those admitted for fever (RV/IFV=2.3), or any cause (RV/IFV=3.4). Furthermore, wheezing was present in 43% of RV-positive subjects, in contrast to 16% of IFV-positive.

CONCLUSIONS: RV-associated disease burden is high in hospitalized children, especially during infancy. RV infection induces wheezing and is associated with asthma proportionally more often than IFV, a finding reported for the first time.

Topic: Respiratory tract infections

Paper number: 1367

Presentation type requested: Oral Presentation

**TRANSCRIPTOME ANALYSES OF PERIPHERAL BLOOD CELLS FROM CHILDREN WITH RSV INFECTIONS
REVEALS INVOLVEMENT OF MULTIPLE IMMUNE RESPONSE PATHWAYS**

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BACKGROUND AND AIMS: RSV infection is one of the leading causes of acute lower respiratory tract infections among young children. Up to 2% of all children are hospitalized in their first year of life and 7-21% of them require ventilatory support. Environmental, viral and host factors contribute to disease susceptibility and severity. Effective prevention and treatment strategies remains elusive. **METHODS:** To get detailed insight into the molecular pathogenesis and the human host response against viral respiratory infections and to improve current intervention strategies, we performed transcriptome analyses on clinical samples derived from children under 5 years of age with clinical symptoms of viral lower respiratory tract infection. Based on severity of disease, they were assigned to a certain patientgroup and nasopharyngeal aspirates and blood were drawn. Samples were collected during both the acute phase of infection and during recovery and isolated blood cells were used for microarray analyses. **RESULTS:** From 9 RSV-positive patients (three from each patientgroup), microarray analyses have been performed on PBMCs and granulocytes, differences in gene expression between mechanically ventilated children and children with milder symptoms were studied. Also, genes and genetic pathways important in the host response against RSV were identified. **CONCLUSIONS:** This information is expected to result in the discovery of diagnostic biomarkers and provides an opportunity for identification of mediators that are critical to the host response to disease upon RSV infection. In addition, these data may give the possibility for prediction of the prognosis of an individual patient and will contribute to the development of more adequate intervention strategies.

Topic: Respiratory tract infections

Paper number: 1373

Presentation type requested: Poster Presentation

CHEST RADIOGRAPHIC DIAGNOSIS OF SUSPECTED PULMONARY TUBERCULOSIS AMONG CHILDREN IN A COMMUNITY SETTING

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BACKGROUND AND AIMS: Definitive radiographic diagnosis of pulmonary tuberculosis (PTB) may be difficult in ambulant children with mild disease.

We aimed to compare agreement on radiographic diagnosis among children with suspected tuberculosis in a community setting.

METHODS: Records of 1869 children investigated for PTB during a South African tuberculosis vaccine trial (2001-2006) were used. Chest radiographs were reviewed blind by 3 experienced paediatricians and classified into 6 categories of likelihood of diagnosis (PTB = highly likely / likely / or suspicious; NOT PTB = inconclusive / other abnormality / normal). Radiographs of 1354 children (72.4%), mean age 15 months, were reviewed by all 3 reviewers for purposes of this comparison. **RESULTS:** 67% of children reported TB contacts, 40% had cough > 2 weeks, and 22% loss of weight. 1.9% were HIV-infected, 28% had a Mantoux test > 15 mm, and 107 children (7.9%) cultured *Mycobacterium tuberculosis* (sputum / gastric lavage).

Radiographic diagnosis of PTB was made in 12%, 20%, and 66% of suspected cases. Percentage agreement between reviewer pairs for binary categories (PTB / NOT PTB) was 43%, 51%, and 81%, with kappa 0.09, 0.18, and 0.29. Percentage agreement for hierarchical categories was 51%, 57%, and 84%, with weighted kappa 0.06, 0.13, and 0.28.

CONCLUSIONS: Among young children in the community with suspected PTB, the percentage with radiographic diagnosis of PTB ranged from 12 – 66% of cases investigated. Agreement between reviewers was poor for binary and hierarchical diagnostic categories.

Topic: Respiratory tract infections

Paper number: 1375

Presentation type requested: Poster Presentation

MYCOPLASMA PNEUMONIAE IN CHILDREN

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BACKGROUND AND AIMS: Mycoplasma pneumoniae (Mp) is an important agent in etiology community-acquired pneumonia (CAP) in children. The aim of prospective study was determination of aetiological agents, and a proportion of Mp of them and common and unusual clinical features of Mycoplasma infection. **METHODS:** Prospective 3-year study of CAP in hospitalized children (0 – 18 years) in 3 University Hospitals in Prague in 2005 – 2007. The diagnosis of CAP was verified by X-ray examination in all children, Mp infection was confirmed by serum anti Mp antibodies by KFR and/or by ELISA test. **RESULTS:** CAP was diagnosed in 255 children. 119 of them were taken 2 blood samples for serology of Mp and serological examination. In 49 cases (21%) was confirmed Mp infection. The majority of patients with Mp were in school children age (23) and 17 adolescents. Leukocytosis ($> 10 \times 10^5$ /ml) was in 26 children, CRP > 10 mg/ml we found in 42, both elevated level in 24 cases. Pertussis-like syndrome was observed in 4 children. From extrapulmonary manifestation we found rash, myalgia, headache, meningismus and gastrointestinal findings. For initial antibiotic therapy there were used macrolides in 7, doxycycline in 11, lincosamids in 6, change of therapy (from betalactams to macrolides/doxycycline) in 11 cases. Betalactams without macrolides were used in 14 children without complications. **CONCLUSIONS:** Mp infections were the most frequent in school children and adolescents, and had a benign course; severe course and complications were rare. Macrolides and tetracyclines were the most frequently used for initial therapy.

This study is supported by grant IGA Ministry of Health NR/8297-3.

Topic: Respiratory tract infections

Paper number: 1388

Presentation type requested: Poster Presentation

RSV BRONCHIOLITIS – CHARACTERISTICS OF HOSPITALIZED CHILDREN AT UNIVERSITY MEDICAL CENTER LJUBLJANA

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BACKGROUND AND AIMS: Purpose of study was to assess and evaluate data of children with RSV bronchiolitis who were hospitalized. **METHODS:** Retrospective study between October 2000 and September 2006. Demographic data, risk factors, treatment and complications were analysed. **RESULTS:** 812 children < 3 years with RSV bronchiolitis were studied. Number of hospitalizations increased 7 times over 6 year period. Most hospitalizations took place from January to April. Mean age was 11 months, 55,8% were males. 5,5% of patients had atopy, 85% were breast-fed. 329 (40,5%) were < 6 months, 25 born before 32 weeks of gestation and 13 (52%) of them were treated in intensive care unit (ICU). From children < 2 years 14 had broncho-pulmonary disease (BPD) and 19 congenital heart disease (CHD). Among them 7 with BPD and 10 with CHD were admitted in ICU. Hospital stay ranged from 1 to 60 (mean 7,2) days. 68% patients needed supplemental oxygen (mean 5,4 days), 40% were treated with bronchodilator, 11% with corticosteroids, 33% received antibiotics. 86 (10,6%) were admitted to ICU (mean stay 9,5 days), 71(8,7%) were mechanically ventilated (mean 7,3 days). 2 children died.

CONCLUSIONS: Conclusions: Number of children with RSV bronchiolitis treated in our hospital increase every year. RSV season starts late in winter. There is probably over prescribing of additional treatments especially with bronchodilators and antibiotics. Number of patients with risk factors (BPD, CHD, prematurity) is small, but they are at threat for more serious RSV disease and admittance to ICU.

Topic: Respiratory tract infections

Paper number: 1414

Presentation type requested: Oral Presentation

ROLE OF RESPIRATORY PATHOGENS IN INFANTS HOSPITALIZED FOR THEIR FIRST EPISODE OF WHEEZING AND THEIR IMPACT ON SUBSEQUENT RECURRENCES

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BACKGROUND AND AIMS: Wheezing episodes are a common reason for the hospitalization of infants and young children. The aim of this study was to evaluate the infectious agents associated with the first episode of acute wheezing requiring the hospitalization of otherwise healthy infants during their first year of life, and define the role of each in causing recurrences. **METHODS:** A total of 85 patients aged <12 months and hospitalized because of a first acute episode of wheezing were prospectively enrolled in Italy. Upon enrollment, nasopharyngeal swabs were collected for the real-time polymerase chain reaction detection of respiratory syncytial virus (RSV), influenza virus, adenovirus, parainfluenza viruses, rhinovirus, human metapneumovirus, human coronaviruses, bocavirus, enterovirus, and paraechovirus; nasopharyngeal aspirates were also obtained to detect atypical bacteria. **RESULTS:** At least one infectious agent was identified in 76 children (89.4%). RSV was the most frequently detected pathogen (61.2%), and its prevalence was significantly higher in children <3 months than in those aged 3-12 months (56.6% vs 68.7%; $p < 0.0001$). Only the children with RSV infection experienced recurrent wheezing. Viral load was significantly higher in children with than in those without recurrent wheezing ($8.27 \times 10^5 \pm 2.10 \times 10^6$ vs $9.88 \times 10^2 \pm 2.41 \times 10^3$; $p < 0.05$). **CONCLUSIONS:** This study shows that RSV is the main cause of hospitalization during the first wheezing episode in infants, and that it seems to be the only pathogen associated with a high frequency of recurrences. A high viral load seems to be strictly related to the likelihood of recurrence.

Topic: Respiratory tract infections

Paper number: 1446

Presentation type requested: Oral Presentation

DISEASE SEVERITY OF LOWER RESPIRATORY TRACT INFECTIONS IN PREMATURE INFANTS CAUSED BY RSV ALONE OR CO-INFECTED BY OTHER RESPIRATORY VIRUSES.

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BACKGROUND AND AIMS: Respiratory syncytial virus (RSV) causes high morbidity in premature infants. The frequency of reports of respiratory virus co-infections has increased and some have suggested that co-infections can cause higher disease severity. We evaluated clinical parameters in premature infants hospitalized due to LRTI caused by RSV alone or with viral co-infections over a 2 year period in Ribeirão Preto, SP, Brazil. **METHODS:** Premature infants born at or before 35 weeks of gestational age (GA) and with confirmed RSV LRTI were further screened by RT-PCR for all respiratory viruses. Length of hospital stay (LOS) and oxygen supplementation (O₂) and frequency of ICU admissions were evaluated. **RESULTS:** We found 50 premature infants with RSV LRTI admissions. Of them 26 had RSV alone and 24 had RSV plus another virus (rhinovirus, metapneumovirus, enterovirus, influenza, coronavirus). The LOS and O₂ were respectively 19.5 and 11.4 days for those with RSV alone and 10.5 and 7.3 days for those with co-infections. 30.8% (8/26) of the patients with RSV alone were admitted to the ICU as compared to 4.2% (1/24) of those with co-infections. For patients with RSV alone, premature infants with GA < 33 wks had 24.7 and 14.0 days of LOS and O₂, compared to 13.4 and 8.5 days for those with co-infections. The frequency of BDP was similar in both groups (11.5% vs 12.5% respectively for patients with RSV alone and with co-infections). **CONCLUSIONS:** The data suggest that respiratory virus co-infections do not significantly increase disease severity in premature infants with RSV LRTI.

Topic: Respiratory tract infections

Paper number: 1449

Presentation type requested: Poster Presentation

COST ANALYSIS OF RSV LOWER RESPIRATORY TRACT HOSPITALIZATION IN PREMATURE INFANTS AND ONE YEAR FOLLOW-UP AFTER RSV PRIMARY INFECTION.

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BACKGROUND AND AIMS: RSV causes high morbidity in premature infants and prophylaxis with palivizumab has been recommended for them. The cost-benefit of RSV prophylaxis depends of the costs of RSV infection. We evaluate primary RSV hospitalization in premature infants and one year follow-up in Ribeirão Preto, SP, Brazil **METHODS:** Infants \leq 35 wks of GA with a confirmed RSV LRTI without co-infection had their medical records reviewed for hospital cost analysis. Additional medical costs in the 12 months period after RSV hospitalization were also reviewed. **RESULTS:** We found 25 premature infants with RSV LRTI admissions. 15 (60%) had \leq 32 wks GA and 10 (40%) had 33 – 35 wks GA and 18 (72%) were boys. Overall, length of hospital stay (LOS) was 19.2 days, with 36% (9/25) ICU admissions with an average hospital cost of 12,133.28 US dollars. For GA \leq 32 wks the LOS was 23 days and ICU admission was 33% (5/15) with an average cost of 14,668.33 US dollars. For GA 33 – 35 wks the LOS was 13.6 days and ICU admission was 40% (4/10) with an average cost of 8,280.72. Follow-up data were available from 15 patients with 73% recurrence of wheezing and 40% of readmissions, with additional average costs per patient of 4,767.41 US dollars. **CONCLUSIONS:** Average hospital costs for premature infants with RSV LRTI were 12,133.28. Additional costs in 12 months follow-up were 16,900.68 US dollars. Those costs are higher than previous reported in developed countries may be due to longer hospital stay in developing countries.

Topic: Respiratory tract infections

Paper number: 1465

Presentation type requested: Oral Presentation

PHARYNGEAL BACTERIAL COLONIZATION AS RISK FACTOR FOR BACTEREMIA DURING TONSILLECTOMY

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BACKGROUND AND AIMS: Tonsillectomy may be followed by bacteremia that can have severe clinical consequences. Evaluation of risk factors for the development of bacteremia during tonsillectomy may be useful in order to identify patients who always require antibiotic prophylaxis. **METHODS:** A total of 131 children (84 males; mean age \pm SD, 6.60 \pm 3.28 years) undergoing tonsillectomy by dissection technique and who did not receive antibiotic therapy for at least 20 days before the intervention were enrolled. In all of them, immediately before the anesthesia, and 30 seconds and 20 minutes after tonsils removal, blood cultures were taken. Moreover, swab cultures were obtained from the central regions of each tonsil. Microbiologic data regarding blood cultures were analyzed taking in account tonsil swab cultures, patient's age and the indication for tonsillectomy (recurrent infections or obstructive sleep apnoea). **RESULTS:** After 30 seconds from tonsils removal, bacteremia was observed in 23 children (17.6%) with a previously negative blood culture. Blood culture was still positive for the same bacteria after 20 minutes in 12/23 cases (52.2%). Haemophilus influenzae was the main cause of bacteremia and in 6/7 of the H. influenzae cases this pathogen remained in the blood. The positivity of blood culture was significantly associated with pharyngeal bacterial colonization (33.9% of the colonized vs 4.2% of the not colonized; $p < 0.0001$), whereas patient's age and indication for tonsillectomy did not appear related to bacteremia. **CONCLUSIONS:** Tonsil swab for bacterial culture should always be performed before undergoing tonsillectomy and in case of positive results antibiotic prophylaxis should be recommended before surgery.

Topic: Respiratory tract infections

Paper number: 1472

Presentation type requested: Poster Presentation

THE RWANDAN SCORE TO DIAGNOSE TUBERCULOSIS IN HIV INFECTED CHILDREN IN RURAL SITES IN RWANDA.

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BACKGROUND AND AIMS: As no specific gold standard exists for TB diagnosis, clinical score is helpful in contexts where expertise and exams are not available. **METHODS:** 198 HIV-1 infected children (3 months to 15 years old) were selected for antiretroviral treatment at CHU of Kigali from January 2005 until June 2006. A staff with a panel of experienced paediatricians decided whether to treat for TB without considering the existing scores. The decision of this staff is considered as the gold standard for this analysis.

In September 2007, an easier score was proposed by the RPS (Rwandan Paediatric Society), using criteria accessible at different levels of health care: Cough >15 days despite antibiotics, fever >15 days despite antibiotics with negative blood smear, severe malnutrition, contact with a TB and HIV infection. This score also considers results of PDD, Chest X ray, AFB if available.

RESULTS: For 198 children infected with HIV/AIDS, Crofton score has 97% of sensitivity and 50.5% of specificity. Brazilian score has 82.2% of sensitivity and 73.2% of specificity. Using the score proposed by RPS, we have a sensitivity of 89% and a specificity of 72, 8 % compared to the same gold standard. These data are easier to gather than the tools used in the university hospital. **CONCLUSIONS:** Using these easy criteria, we obtained a score with a reasonable sensitivity and specificity for TB diagnosis in HIV-infected children. This score should be used everywhere, as children are rarely treated for TB in rural context.

Topic: Respiratory tract infections

Paper number: 1473

Presentation type requested: Poster Presentation

RECURRENT SEVERE PNEUMONIA OF INFANCY WITH NEONATAL ONSET

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BACKGROUND AND AIMS: Recurrent pneumonia of infancy, with same topographic distribution is rather unusual in children without congenital structural abnormalities. Severe such cases, with respiratory failure and ventilatory support, are even more rare. **METHODS:** Case presentation **RESULTS:** 3 weeks-old female premature infant is admitted for cough and respiratory distress (80/minute RR, 90% saturation in room-air). Significant worsening in 24h, with coma, seizures and severe respiratory failure. Radiological aspect: opaque right lung area. Ventilatory support was initiated. Cultures of endotracheal (ET) aspiration fluid: *Klebsiella oxytoca*. Slow resolution with 13 days of mechanical ventilation and iv antibiotics. 2w, 7w and 10w later admission for similar clinical findings and same radiological aspects. Chest CT ruled out congenital pulmonary malformation and documented enlarged mediastinal lymph nodes and pleural effusion. Elevated ESR, CRP and leukocytosis (minimum WBC count 22.400/mm³, maximum 47.700) were documented. All these episodes were with negative ET cultures and negative blood-cultures. Chest Rx of mother (heavy smoker) revealed active pulmonary TB infection. TB was diagnosed by gastric-aspirate microscopy and culture-documented BK. Adequate tuberculostatic treatment generated complete cure and resolution of failure to thrive of this child.

- CONCLUSIONS:**
1. Romania has the highest incidence-rate of TB infection.
 2. Pediatricians should have a high index of suspicion in unusual case-presentation of TB in infancy.
 3. Recurrent pneumonia of infancy with same topography should be suspected as TB if congenital lung malformations are excluded by lung HRCT.

Topic: Urinary tract infections

Paper number: 1115

Presentation type requested: Poster Presentation

**PROPHYLACTIC ANTIBIOTICS FOLLOWING URINARY TRACT INFECTION (UTI) IN CHILDREN: A
NATIONWIDE ISRAELI SURVEY**

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BACKGROUND AND AIMS: Recurrent UTIs with or without vesico-ureteral reflux (VUR) are the leading cause for long-term prophylactic antibiotics in children. Recent data question the efficacy of antibiotic prophylaxis in preventing recurrent infections and subsequent renal scarring, and, moreover, suggest increasing rates of resistance following widespread antibiotic use.

Objectives: To portray the approaches in Israel regarding antibiotic prophylaxis and evaluation of children after a single event of UTI.

METHODS: A questionnaire regarding the approach to antibiotic prophylaxis and to diagnostic evaluation following the first event of febrile UTI, according to age and renal imaging, was sent to all directors of Departments of Pediatrics and Units of Pediatric Infectious Diseases and Pediatric Nephrology in Israel. **RESULTS:** The questionnaire was completed by 54 (93%) directors. Most practitioners of all sub-specialties prescribe prophylactic antibiotics after a single event of UTI despite lack of evidence of its efficacy. Pediatric nephrologists use DMSA renal scans for diagnosis and follow-up more often than other specialists. First generation cephalosporins are the most commonly used agent for prophylaxis, while pediatric nephrologists prescribe trimethoprim-sulphamethoxazole and nitrofurantoin more often than the other specialists. **CONCLUSIONS:** Despite the concern of increasing antibiotic resistance and the lack of evidence supporting its efficacy, prophylactic antibiotics after a single event of febrile UTI is still the common practice for most Israeli specialists. Most practitioners base their decision of whether or not to prescribe prophylaxis on the presence of VUR as demonstrated by cystography, rather than on the presence of renal scarring as demonstrated by DMSA scan.

Topic: Urinary tract infections

Paper number: 1196

Presentation type requested: Poster Presentation

DOES A NEGATIVE DMSA MAKE VOIDING CYSTOURETHROGRAPHY UNNECESSARY AFTER FIRST FEBRILE URINARY TRACT INFECTION

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BACKGROUND AND AIMS: Urinary tract infection (UTI) in children may result in renal scarring. The reason to investigate children with a UTI is to exclude any urinary tract abnormality, the commonest vesicoureteric reflux (VUR). There is confusion about the role of imaging in the investigation of a first UTI. The objective of this study is to determine whether a negative DMSA renal scanning can rule out the possibility of high VUR in infants after first febrile UTI. **METHODS:** A prospective study of 364 infants, aged 1 to 24 months (276 less than 12 months). 131(36%) were males and 233(64%) females. Infants with pathological prenatal ultrasound were not included in this study. They were diagnosed of febrile UTI. DMSA (until 2 months after UTI diagnosis) and cystourethrography were performed. **RESULTS:** 140 patients (39%) had a pathological DMSA scan. 102 infants (28%) had vesicoureteral reflux: 71(19,5%) grades 1-2 and 31(8,5%) grades 3-5. DMSA was normal in 177(67,6%) infants with no reflux, 39(53,5%) with reflux grades 1-2 and 9(29,5%) with reflux grades 3-5 (all of them were reflux grade 3). Kendall's tau-b, p for trend <0,001. DMSA was not a good imaging test for high reflux: Youden's J 0.355, sensitivity: 0.71(CI 95% 0,55-0,85), Specificity 0,65(CI 95% 0,6-0,7), Negative Likelihood 0.45(CI 95% 0,26-0,78), Negative post-test probability 4%(CI 95% 2,1-7,4) **CONCLUSIONS:** Initial negative DMSA does not exclude a high VUR. Voiding cystourethrography is mandatory in infants with first febrile UTI because children with dilatation of collecting system (VUR grade 3) are at increased risk for UTI.

Topic: Urinary tract infections

Paper number: 1231

Presentation type requested: Poster Presentation

IMAGING STUDIES IN CHILDREN WITH URINARY TRACT INFECTION

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BACKGROUND AND AIMS: To assess the value of imaging studies in children with urinary tract infection (UTI). **METHODS:** The clinical data, laboratory results and radiological imaging findings of 1891 unselected children (1375 girls, 516 boys) with UTI were gathered and analysed retrospectively. **RESULTS:** The age of the children ranged from 1 day to 15 years (mean age 3.2 ± 2.9 years) and 76 % were less than 5 years at the time of diagnosis. About half (53 %) of UTI episodes were febrile and 25 (5 %) cases were bacteremic. Ultrasonography (US) was performed on all but one of the children and voiding cystourethrography (VCUG) was performed in 1139 (60 %) children. US was abnormal in 404/1890 (21 %) cases and in 16/1890 (<1 %) cases renal scarring was found. Any grade of vesicoureteral reflux (VUR) was found in 389/1139 (34 %) and high grade (III to V) VUR in 174/1139 (15 %) cases. Among 826 children with normal US and who had VCUG done, 93 (11 %) had high grade VUR. **CONCLUSIONS:** We found that vesicoureteral reflux is common (34 %) among children evaluated after UTI. High grade VUR occurred in 15 % of the children. In case of a normal US, the rate of high grade VUR was 11 %. US showed renal scarring in less than 1 %. We conclude that it is not justified to perform VCUG routinely after UTI, especially as the clinical value of finding even high grade VUR has been recently challenged.

Topic: Urinary tract infections

Paper number: 1237

Presentation type requested: Oral Presentation

PURPLE URINE: INDICATOR OF URINARY TRACT INFECTION

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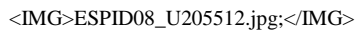
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BACKGROUND AND AIMS: Purple urine is a very rare occurrence. Our patient is unique in being the only reported case in paediatric population. **METHODS:** A 5-year-old girl presented to accident and emergency department with sudden onset of purple urine and dysuria (fig 1). History ruled out ingestion of coloured food or food additives. A past history of urinary tract infection with Klebsiella was noted. Systemic examination was unremarkable. **RESULTS:** Urine dipstick showed pH-7.85, leucocytes and Nitrites +++. Urine microscopy showed WCC-200, RBC-50 and bacteria ++. Urine culture grew e.Coli >10⁵ Cfu/dl sensitive to Trimethoprim.

The symptoms resolved on 2nd day of treatment with Trimethoprim. Follow up urine MC&S and renal ultrasound scan were normal.

CONCLUSIONS: Several reports have been published on Purple urine bag syndrome (PUBS) in adults. These reports note increased frequency of PUBS in elderly patients with chronic catheterisation, constipated women and patients with renal tract anomalies. There is a documented association with alkaline urine and some urinary tract infections. The purple colouration of urine is attributed to indigo in alkaline urine.

Though unusual, purple urine could be an indicator of urinary tract infection even in children.



Topic: Urinary tract infections

Paper number: 1291

Presentation type requested: Poster Presentation

THE URINARY TRACT PATHOGENS AND ANTIBIOTIC RESISTANCE

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BACKGROUND AND AIMS: Antibiotic resistance in urinary tract infection (UTI), one of the most common bacterial diseases in childhood, is still a major health problem. In this study we aimed to assess the resistance patterns of urinary tract pathogens to commonly used antimicrobials and evaluate the alternative drugs for empirical treatment of UTI. **METHODS:** A prospective study was carried out in Department of Pediatrics, Zeynep Kamil Maternity And Children's Training And Research Hospital, between October 2005 – October 2006. **RESULTS:** We analysed 126 urine cultures. Mean age of all children was 60.6 ± 44.16 months (range 1 month to 14 years). Female / male ratio was 5.2. The most causative agent was Escherichia coli (81.7 % of cases) followed by Proteus (7.1 %), Klebsiella (4.0 %) and Pseudomonas (1.6 %). The overall resistance to antibiotics was as follows ; ampicillin 84.9 %, ampicillin sulbactam 73.8 %, cefuroxim 21.4 %, trimetoprim-sulfometoxazole 42.9 %, gentamicin 12.7 % and ceftriaxone 12.7 %. Nitrofurantoin has been shown to have the lowest resistance rate 4.9 % as ciprofloxacin. We observed high resistance to ampicillin , ampicillin sulbactam and trimetoprim-sulfometoxazole.

CONCLUSIONS: In conclusion, empirical initial treatment with trimetoprim-sulfometoxazole is inadequate in approximately one third of UTI cases. The use of ampicillin as a single agent for empirical treatment of a suspected UTI would not cover many of the uropathogens. Nitrofurantoin may be suitable for lower UTI treatment for older children and aminoglycosides are reasonable alternative drugs in all age groups for empirical treatment with an acceptable resistance.

Topic: Urinary tract infections

Paper number: 1302

Presentation type requested: Poster Presentation

**URINARY TRACT INFECTIONS IN CHILDREN: BACTERIOLOGY AND ANTIBIOTIC SUSCEPTIBILITY PATTERNS
IN DIFFERENT AGE GROUP**

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BACKGROUND AND AIMS: Our goal is to consider the bacteriology and antibiotic susceptibility patterns in children with urinary tract infections (UTIs). **METHODS:** We studied 257 children with UTIs during 2003-2007. We separated them in 3 different age groups: infants, preschool and older children. We recorded demographical and laboratory findings. The susceptibility of uropathogens was determined using the MIC according to the NCCLS. **RESULTS:** In infants 68% were boys and in other groups 100% girls. Specimens were collected by suprapubic aspiration in 64% of infants, by catheter in 78% of preschool children and by mid-stream voiding collection in older children. It was the first episode of UTI in 92% of infants, in 23% of preschool children and in 48% in older children. The urinalysis was normal in 27%, 22%, 4% in each group. The main bacterial pathogen was E.coli (78%, 84%, 80%). Resistance to antibiotics of all bacterial pathogens was: Ampicilline (18%, 7%, 18%), amoxicilline-clavulanate (14%, 5%, 12%), cefuroxime (4%, 3%, 12%), ceftriaxone (6,2%, 1,7%, 8,3%), trimethoprim-sulfomethoxazole (TMP-SMX) (2,4%, 25%, 10%), gentamycin (1%, 5,5%, 0%). Renal ultrasound was abnormal in 17% of infants, in 30% of preschool children, in 24% of older children and vesicoureteral reflux was found in 15% of infants, in 25% of preschool children, in 20% of older children. **CONCLUSIONS:** UTIs are common among boys in infancy and in older age in girls. Infants with UTIs may have a normal urinalysis. In our region antibiotics for empirical treatment of UTIs are a second generation cephalosporin or amoxicillin-clavulanate, in all ages.

Topic: Urinary tract infections

Paper number: 1322

Presentation type requested: Poster Presentation

PREVENTION OF THE BIOFILM FORMATION OF UROPATHOGENIC ESCHERICHIA COLI BY CRANBERRY JUICE

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BACKGROUND AND AIMS: Escherichia coli forms biofilm and persistent biofilm-like structures in the urinary tract. Cranberry juice prevents urinary tract infections (UTI) but its mechanism of action is not well-known. We wanted to find out if the urinary metabolites of cranberry juice prevent the biofilm formation of uropathogenic E. coli in vitro. **METHODS:** Eighteen E. coli strains were isolated from pediatric UTI patients. The urine samples of three adult voluntary subjects (A male, B and C females) were collected at baseline (control urine) and after two weeks of daily ingestion of 200 ml cranberry juice (cranberry urine). Urine samples were used as growth media. Biofilm was quantified by staining the bacteria after incubation and measuring the optical density (OD) of material attached on polystyrene microtiter plates. The formation of organized biofilm structures was verified with scanning electron microscopy and the viability of attached bacteria with confocal scanning laser microscopy.

RESULTS: The mean OD of E. coli strains was lower when cultured in cranberry urine than in control urine (mean of the differences 0.09, 95% CI of the difference 0.06 to 0.12, P<0.001). The OD of all strains cultured in the urine samples of subjects A and B and 9/18 strains cultured in the urine samples of subject C were lower when cultured in the cranberry urine than in the control urine. Subject C appeared to have a positive pregnancy test during the study. **CONCLUSIONS:** The urinary metabolites of ingested cranberry juice prevent in vitro the biofilm formation of E. coli isolated from pediatric UTI patients.

Topic: Urinary tract infections

Paper number: 1326

Presentation type requested: Poster Presentation

EPIDEMIOLOGY OF URINARY TRACT INFECTIONS IN CHILDREN AND ANTIBIOTIC RESISTANCE

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BACKGROUND AND AIMS: Urinary tract infections (UTI) are most frequent bacterial infections in children and one of the most common reason for antimicrobial prescription . The aim of this study was to determine the antimicrobial susceptibility and resistance of the bacteria isolated from the urine.**METHODS:** Identified pathogens from urine cultures in 2007 were evaluated retrospectively.**RESULTS:** A total of 155 urine cultures were positive. The most prevalent pathogen was E. coli (n: 103, 66%). Other pathogens were P. mirabilis (n:18, 11%), K.pneumoniae (n:13, 8.3%) followed by P.vulgaris, P. aeruginosa, group D B hemolitik streptococcus. Of the E. Coli isolates the resistance were 28% to ampicillin , 20.3 % to co-trimoxazole, 14.6 to amoxicillin- clavulonate, 12.7 % cefazolin, 8.9% to cefuroxime axetil. Of the P.mirabilis isolates the resistances were 30% to co- trimoxazole, 24.2 % to ampicillin , of the K.pneoumoniae isolates the resistances were 22% to ampicillin, 16.1% to cefazolin. The resistance of third generation cephalosporins, imipenem, nitrofurantoin, ciprofloxacin and gentamicin remain low, respectively 0%, 1.5%, 2.7%, 4%, and 10%.**CONCLUSIONS:** In our study we found that E. coli remains predominant pathogen of UTIs in children . This information about antimicrobial susceptibility is useful to maintain update the hospital protocol for empirical UTI treatment.

Topic: Urinary tract infections

Paper number: 1348

Presentation type requested: Oral Presentation

EXTENDED SPECTRUM BETA LACTAMASE (ESBL) GRAM NEGATIVE URINARY TRACT INFECTIONS IN CHILDREN IN LEICESTER, UK

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BACKGROUND AND AIMS: ESBL Gram negative bacteria are resistant to penicillins and cephalosporins, and often possess additional resistance mechanisms to unrelated antibiotic classes. Consequently, useful therapeutic agents are few, usually require parenteral administration and are not usually first line agents. Infections are difficult to treat in the community and empirical antibiotic choices are inadequate. Recently, there has been an increase in community-onset urinary tract infections (UTIs) in adults caused by ESBL in the UK. However, there is no published information on ESBL UTIs in children. This paper presents data on ESBL UTIs in children in Leicestershire, a county of England with a population of nearly 1 million.

METHODS: A retrospective microbiology laboratory database review of all community and hospital urines sent from patients less than 16 years at the time of collection, for the 12 month period December 2006 to November 2007 inclusive. Cultures resistant to cefpodoxime were tested for ESBL activity, and speciated.

RESULTS: 1958 culture positive urine specimens were received from 1444 children. 31 children (2.1% of those with positive cultures) had 41 ESBL positive urines; 24 were E coli, six Klebsiella species, one unidentified coliform. 32% of the children with ESBL were male, compared with 20% for all children with positive cultures. 39% were aged less than 1 year. 25 ESBL UTIs had a community onset. One boy died from UTI-related sepsis.

CONCLUSIONS: ESBL UTIs are not rare and may be a source of potentially fatal sepsis. More studies are required to define the epidemiology of this infection.

Topic: Urinary tract infections

Paper number: 1455

Presentation type requested: Poster Presentation

THE USE OF SERUM PROCALCITONIN AS A CRITERION FOR THE DMSA PERFORMANCE IN CHILDREN WITH FEBRILE URINARY TRACT INFECTION

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BACKGROUND AND AIMS: The objective was to assess procalcitonin (PCT) as an early inflammatory marker of the development, the severity and the reversibility of renal lesions in children with febrile urinary tract infections (UTI). **METHODS:** The study included 60 children with febrile UTI, aged (median, range) 0.6 years (0.1-9.5 years). White blood count (WBC), C-reactive protein (CRP) and PCT levels were measured on admission and on the 3rd treatment day, whereas renal involvement was assessed with DMSA scintigraphy within 7 days after admission and after 6 months. **RESULTS:** Renal parenchymal lesions on DMSA occurred in 47% patients. During febrile UTI, PCT and CRP levels increased in parallel with the severity of renal lesions in acute DMSA. During repeat DMSA, PCT levels were increased in the group with partially versus totally reversible renal lesions (5.3 vs 3.0 µg/L, p=0.005). PCT and CRP had a high sensitivity (94% and 100%) and negative predictive value (97% and 100%) and their best performance was at the cut-off value of 1.0 µg/L and 20 mg/L respectively. PCT had higher specificity than CRP (100% vs 55%). **CONCLUSIONS:** PCT is a sensitive marker of the development, severity and persistence of renal lesions in childhood febrile UTI. DMSA scintigraphy is invasive and expensive and should be omitted during the first episode of a febrile UTI of young children with low (<1.0 µg/L) PCT levels.

Topic: Vaccines and prevention

Paper number: 1029

Presentation type requested: Poster Presentation

PERCEPTION OF INFLUENZA VACCINATION AMONG PARENTS OF PRESCHOOL CHILDREN

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<pre>BACKGROUND AND AIMS:</pre>Children less than 59 months belong to a risk group for influenza complications and should be vaccinated. The aim of our cross-sectional study was to learn general perception of influenza vaccination in parents for preschool children younger than 59 years.<pre>METHODS:</pre>A validated survey was administrated in seven public day-care facilities in Warsaw. 484 surveys were administrated; the response rate was 62%.

<pre>RESULTS:</pre>The influenza immunization rate in children of surveyed parents was 4%. 72% parents thought their child was unlikely to contract influenza. 80% believed influenza vaccine might deteriorate the immunological system of a child. 42% considered vaccination unsafe, 77% believed it may cause the disease or predispose to recurrent respiratory tract infections. The main reason for nonvaccination was the lack of influenza recommendation by health professionals (89%).

<pre>CONCLUSIONS:</pre>Parents of preschool children hold a number of misconceptions about vaccinations. Influenza vaccine coverage among children younger than 59 months is low. Family doctors and pediatricians should be more aware of necessity to inform and encourage parents to vaccinate their children against influenza.

Topic: Vaccines and prevention

Paper number: 1035

Presentation type requested: Poster Presentation


ANTIBIOTIC NON-SUSCEPTIBILITY IN PEDIATRIC VERSUS ADULT SPANISH S. PNEUMONIAE INVASIVE ISOLATES PRE- AND POST-INTRODUCTION OF CONJUGATE VACCINE AND RESPIRATORY FLUOROQUINOLONES

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BACKGROUND AND AIMS: To explore the influence of the conjugate vaccine and respiratory-fluoroquinolones in S. pneumoniae non-susceptibility. **METHODS:** IMS data and ISCH databases (January 2000-August 2007) were analysed. **RESULTS:** Table.

From 2000 to 2007, vaccine doses increased from 0.0 to 17.1 units/1,000 inhabitants, antibiotic consumption (DDD/1,000 inhabitants/day) was maintained for β -lactams (≈ 16), decreased for macrolides (from 4.4 to 2.7), and increased for respiratory-fluoroquinolones (from 0.3 to 2.7). Vaccine serotypes significantly ($p < 0.001$) decreased in children (63.5% vs 14.4%) and in adults (47.3% vs 21%), with significant ($p < 0.001$) higher rate of vaccine serotypes in children in 2000 and in adults in 2007. **CONCLUSIONS:** Non-susceptibility for PEN/ERY significantly decreased in children, and for PEN in adults. The significant differences ($p < 0.001$, 2000-2005) between children and adults with respect to PEN/ERY non-susceptibility disappeared in 2007 ($p = 0.5$), when LVX non-susceptibility was higher ($p = 0.06$) in adults.



Topic: Vaccines and prevention

Paper number: 1039

Presentation type requested: Poster Presentation

TRENDS OF SEROTYPES INCLUDED IN THE 7-VALENT CONJUGATE VACCINE AMONG INVASIVE PNEUMOCOCCI IN SPAIN OVER THE LAST 29 YEARS (1979-2007)

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BACKGROUND AND AIMS: Resistance clusters in 7-valent conjugate-vaccine (PCV-7) serotypes. Use/introduction of antibiotics (aminopenicillins in 80's, long half-life macrolides/cephalosporins in 90's, respiratory-fluoroquinolones in 2000's) and PCV-7 (in 2001) might influence time course of these serotypes among invasive pneumococci. **METHODS:** ISCHII databases (January 1979-August 2007: 22,831 invasive isolates) were analysed. Temporal trend of each PCV-7 serotype among invasive pneumococci was calculated by non-linear regression adjusted to best fit (highest r² value). **RESULTS:** Figure.

Best goodness of fit was cubic function for all trends. r² ranged from 0.483 (p=0.001) to 0.758 (p<0.001) for all serotypes except serotype 4 (r²=0.207; p=0.115). **CONCLUSIONS:** Tendency showed increase in 90's (after launch of long half-life macrolides/cephalosporins) and decrease in 2000's (after introduction of PCV-7 for children and respiratory-fluoroquinolones for adults) for all PCV-7 serotypes, but serotype 23F (decrease tendency beginning in late 80's), among invasive pneumococci



Topic: Vaccines and prevention

Paper number: 1044

Presentation type requested: Poster Presentation

VACCINATION COVERAGE IN INDIGENOUS AND IMMIGRANT CHILDREN OF 6-7 AND 10-12 YEARS OF AGE IN SOUTH-EAST ATTICA (GREECE)

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BACKGROUND AND AIMS: Vaccination of Greek population has changed during recent years, mainly due to immigration. The purpose of the current study was to assess the immunization level among children of our area.

METHODS: A prospective cross-sectional study was carried out during a two years period. The sample consisted of 494 children aged 6-7 (256) and 10-12 years (238). Vaccinations, sex and nationality were recorded. The criteria for full vaccination were based on recommendations of the National Immunization Committee.

RESULTS: 172 participants (34.8%) were immigrants. Both indigenous and immigrants children aged 10-12 years had a better full coverage for DTP (98,3%), Polio (96,6%) and MMR (88,6%) compared with the younger children (87,8%, 84,3% and 74,6% respectively) ($p < 0.001$). In contrast, children aged 6-7 years showed significantly higher vaccination rates for the newly recommended vaccines: Hib, meningococcal C (Men C) and varicella ($p < 0.001$). Although all immigrants were partly or fully vaccinated with DTP and polio, more than half of them (52.3%) had never received any immunization against Hib. A higher coverage was observed in indigenous compared to immigrants in the youngest age group and the differences were statistically significant for DTP, Polio, Hib, MMR, Men C and Hepatitis A vaccines for all number of doses. In the age of 10-12 years, Greeks had better coverage than immigrants for all doses of Hib, MMR and HepA vaccines ($p < 0.001$).

CONCLUSIONS: 1) Completion of immunization program was significantly delayed in both, indigenous and immigrants. 2) More efforts are required in order to increase vaccination coverage especially for immigrant children, in Greece.

Topic: Vaccines and prevention

Paper number: 1052

Presentation type requested: Poster Presentation

IMPORTANCE OF SPONTANEOUS REPORTING OF ADVERSE EVENTS (AE): EXPERIENCE IN MENINGOCOCCAL C VACCINATION IN BRAZIL FROM 2003 TO 2007

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BACKGROUND AND AIMS: The meningococcus group C is nowadays the most important agent involved in meningitis cases in infants and children and is the most relevant agent in these infections in Brazil. This disease can lead to a variety of complications and even to death, which demands prevention that can be done through vaccination of susceptible children. However, it is also very important to monitor the safety and tolerability of the vaccine available for use, in way that the AE can be prevented or adequately handled, and the interactions with concomitant vaccines and treatments can be predicted.
METHODS: Retrospective study. Data obtained from manufacturer records based on patients spontaneous notifications of AE from September 2003 to March 2007. These patients were also contacted by phone for the follow-up and outcome of the event.
RESULTS: The postmarketing data showed that of the 562,600 doses of meningococcal vaccine applied only 16 patients (0,003%) presented any AE post-vaccination. From these patients, we managed to find 4 types of notified AE, which included gastrointestinal, neurological, immunological and reactions in the application site, a total of 20 reported AE. All cases had satisfactory clinical resolution in the follow-up. Vaccine failure was not reported.
CONCLUSIONS: Although vaccine reaction causality cannot be established in all cases, this monitoring is of great importance once it allows providing a means for detecting new or previously unreported vaccine-related AE, determining the number of AE reported nationwide, allows collection and analysis of vaccine-specific AE event information and assists in the assessment of potential risk factors for AE.

Topic: Vaccines and prevention

Paper number: 1059

Presentation type requested: Poster Presentation

THE PNEUMOCOCCAL DISEASE BURDEN AND POTENTIAL IMPACT OF UNIVERSAL INFANT IMMUNIZATION WITH 7-VALENT PNEUMOCOCCAL CONJUGATE VACCINE (PCV-7) IN BRAZIL.

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BACKGROUND AND AIMS: The knowledge of the pneumococcal disease burden and the potential immunization impact is crucial for the introduction of the PCV-7 vaccine into a National Program of Immunization. **METHODS:** To address these critical aspects, we constructed a decision analytic model to assess the health benefits of this vaccine in Brazil. **RESULTS:** Considering direct PCV-7 benefit, we projected that without pneumococcal vaccination, 3,122,943 cases of AOM due to any cause; 315,954 clinical pneumonia cases due to any cause; 196,398 chest x-ray-confirmed pneumonia cases due to any cause; 1,236 pneumococcal meningitis cases, and 364 pneumococcal sepsis cases would occur annually in children <5 years of age. Of the AOM and pneumonia cases, 320,631 cases of AOM and 88,961 cases of clinical and chest x-ray confirmed pneumonia were estimated to be due to pneumococcus. Pneumococcal cases were associated with 71,821 hospitalizations (21 per 1,000 children) and 339,370 outpatient visits (98 per 1,000 children). Annually, PCV-7 was projected to prevent 269,136 cases of pneumococcal disease (AOM - 209,862 cases; Pneumonia - 58,226 cases; Pneumococcal sepsis - 238 cases; Pneumococcal meningitis - 809 cases), and avert 3,301 deaths, in children <5 years of age. Overall, PCV-7 saved 0.99 life per 1,000 children vaccinated and averted 80.8 cases of disease per 1,000 children vaccinated.

Additionally, we estimated in the sensitive analyses that the universal infant immunization with PCV-7 would prevent 1.3 millions pneumococcal disease cases and 7,235 deaths, annually, when indirect benefits were considered. **CONCLUSIONS:** The public health rationale for PCV-7 introduction is clear and could be considered a priority.

Topic: Vaccines and prevention

Paper number: 1066

Presentation type requested: Poster Presentation

KNOWLEDGE AND ATTITUDE TO RECOMMENDED VACCINES AMONG PARENTS

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BACKGROUND AND AIMS: Polish schedule of vaccination consists of obligatory and recommended vaccinations: pentavalent and hexavalent against diphtheria, pertussis, tetanus, poliomyelitis, Haemophilus influenzae and hepatitis B), pneumococci, meningococci, HPV, varicella, hepatitis A. The aim of the study was to estimate general knowledge and attitude of parents concerning with recommended vaccines. **METHODS:** The survey was performed among patients of four of private out-patient pediatric clinics in Warsaw. The questionnaire was previously validated (Kappa statistics 0,6). The survey was fulfilled by trained pollsters. 95 parents participated in the survey (78 women and 17 men). The average age of a parent was 34 years (SD 5,4). **RESULTS:** 96% parents performed recommended vaccines in their children. The general reason for taking recommend polyvalent vaccines was wish to decrease number of injections (99%). Among recommended monovalent vaccines the most commonly chosen were these against: pneumococci (97%), meningococci infections (58%), HPV infections (42%), hepatitis A (35%), rotavirus infection (30%), varicella (21%), and flu (16%).

The main source of knowledge about vaccines was doctors (78% - the only source and an additional source). Other sources were declared only together with others: media (36%), friends and family (21%), internet (20%). Most of parents (57%) declared that doctors answered the questions asked by parents; only 43% observed that a doctor initiates this topic.

CONCLUSIONS: Most of parents of investigated private pediatric clinics decided to give their children recommended vaccines. The main source of knowledge about vaccines is a doctor. The topic of vaccinations should be more often initiated by doctors.

Topic: Vaccines and prevention

Paper number: 1076

Presentation type requested: Oral Presentation

COADMINISTRATION OF THE PENTAVALENT ROTAVIRUS VACCINE, ROTATEQ, WITH A THREE-DOSE PRIMARY COURSE OF A DTaP-HBV-IPV/HIB HEXAVALENT VACCINE: IMMUNOGENICITY AND REACTOGENICITY

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BACKGROUND AND AIMS: A clinical trial was conducted in Europe to evaluate the safety and immunogenicity of the pentavalent rotavirus vaccine (PRV), RotaTeq™, when administered concomitantly with a three-dose primary course of a hexavalent diphtheria-tetanus-acellular pertussis-hepatitis B-inactivated poliovirus-Haemophilus influenzae type b (DTaP-HBV-IPV/Hib) vaccine, Infanrix™ hexa, commonly used in some European countries. **METHODS:** 403 healthy infants were randomized in a double-blind placebo-controlled clinical trial to receive DTaP-HBV-IPV/Hib concomitantly with either PRV or placebo at 2-, 3-, and 4-months of age. For DTaP-HBV-IPV/Hib, postdose (PD) 3 geometric mean titers (GMTs) for all antigens and the following seroprotection rates (PD3 serum antibody) were measured: ≥10 mIU/ml (HBV), ≥0.15 µg/ml (polyribosylribitol/Hib), ≥0.01 IU/ml (diphtheria and tetanus toxoids), and neutralizing antibody ≥ 1:8 (poliovirus types 1, 2, 3). For PRV, PD3 GMTs and seroresponse rates (≥3-fold rise from baseline to PD3) of serum anti-rotavirus IgA and rotavirus serum neutralizing antibody (SNA) responses were measured. Adverse events were recorded for 14 days after each vaccination-visit. **RESULTS:** ~42 days PD3, antibody responses and seroprotection rates to all antigens of DTaP-HBV-IPV/Hib were similar among PRV and placebo recipients. The seroresponse rate of serum anti-rotavirus IgA was ~92% and ~6% in subjects who received PRV and placebo, respectively. All rotavirus SNA responses were also statistically higher in the group receiving PRV than those in the group receiving placebo concomitantly with DTaP-HBV-IPV/Hib. The safety profile was generally comparable between the two groups. **CONCLUSIONS:** Coadministration of PRV with DTaP-HBV-IPV/Hib was well tolerated and did not impair the immune response of PRV or any of the coadministered antigens.

Topic: Vaccines and prevention

Paper number: 1078

Presentation type requested: Poster Presentation

CLINICAL AND IMMUNOLOGICAL EFFICIENCY AND SAFETY OF INFLUENZA VACCINES IN CHILDREN WITH BRONCHIAL ASTHMA

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BACKGROUND AND AIMS: The increase of quantity of children suffering bronchial asthma and development of new influenza vaccines led to necessity of evaluation of efficiency and safety of influenza vaccination in these children.

METHODS: 70 children 5-18 y.o, suffering bronchial asthma applied to the vaccination department for the influenza vaccination. All children had often viral respiratory tract infectious in anamnesis, which caused asthma exacerbations. After the complex examination (clinical and biochemical blood tests, urine test, immunoassay, determination of cytokine status, spirometry, skin allergy tests, ultrasonic examination of different organs) the basic antiinflammatory therapy was prescribed and after 3 months of therapy the influenza vaccination was held.

RESULTS: The strong local and general side effects were not marked during the postvaccinal period. During 1 week after vaccination no asthma exacerbations were registered. After 3 month of the basic antiasthmatic therapy we revealed the significant decreasing of serum levels of IgE, of cytokines Il 4 ($p<0,01$) and Il 13 ($p<0,05$), the significant increasing of serum levels of INF γ , Il 10, Il 12 in comparison with initial data ($p<0,01$). We didn't reveal any damaging influence of vaccination on the cytokine status. We marked the significant decreasing of the frequency and duration of viral respiratory tract infectious, of asthma exacerbations in more than two times ($p<0,05$).

CONCLUSIONS: The influenza vaccination during bronchial asthma doesn't stimulate the activation of allergic inflammation in respiratory tract and decreases risk of intercurrent infections of upper and/or low respiratory tract.

Topic: Vaccines and prevention

Paper number: 1086

Presentation type requested: Oral Presentation

**LONG-TERM PERSISTENCE OF IMMUNE RESPONSE TO AN AS04 ADJUVANTED CERVICAL CANCER VACCINE
IN PRETEEN/ADOLESCENT GIRLS**

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BACKGROUND AND AIMS: Vaccination against oncogenic human papillomavirus (HPV) types prior to sexual debut and long-term protection are important for the overall strategy of cervical cancer prevention. A HPV-16/18 L1 VLP AS04 vaccine (CervarixTM, GlaxoSmithKline) has previously been shown to be generally well-tolerated and highly immunogenic in preteen/adolescent girls aged 10–14 years. We report the results of a follow-up study (107477/NCT00337818) through 24 months post-first vaccine dose. **METHODS:** Subjects aged 10–14 (n=57) and 15–25 (n=186) years received the vaccine at 0, 1 and 6 months and were evaluated for HPV-16/18 immunogenicity (ELISA) and safety through 24 months post-first vaccine dose. **RESULTS:** At Month 7, all subjects had seroconverted for both antigens, with GMTs approximately 2-fold higher in subjects 10-14 yrs than 15-25 yrs. At Month 24, all subjects remained seropositive for both antigens and GMTs in the younger group (3862 EL.U/mL [95% CI 2947–5060] for HPV-16 and 1341 EL.U/mL [1044–1722] for HPV-18) were still >2-fold higher than in 15–25 year-olds (1470 EL.U/mL [1266–1706] and 636 EL.U/mL [541–749], respectively). No subjects withdrew due to adverse events during the follow-up and no vaccine-related SAEs were reported. **CONCLUSIONS:** These results demonstrate the sustained immunogenicity and safety of CervarixTM in preteen/adolescent girls, with antibody titers at Month 24 substantially higher than those elicited in young women aged 15-25 years, for whom long-term protection has previously been shown. These data therefore support cervical cancer vaccination at a young age before sexual debut.

Topic: Vaccines and prevention

Paper number: 1087

Presentation type requested: Oral Presentation

LONG-TERM SAFETY AND IMMUNOGENICITY OF AN AS04 ADJUVANTED CERVICAL CANCER VACCINE IN GIRLS AGED 10-14 YEARS

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BACKGROUND AND AIMS: Immunization of adolescent girls against oncogenic human papillomavirus (HPV) types prior to sexual debut is important for cervical cancer prevention. A HPV-16/18 L1 virus-like particle (VLP) AS04 vaccine (CervarixTM, GlaxoSmithKline) has previously been shown to be immunogenic and well-tolerated in 10–14 year-old girls for up to 18 months post-vaccination. We report long-term immunogenicity and safety through 24 months post-first vaccine dose. **METHODS:** Immunogenicity (ELISA) and safety were assessed through 24 months after the first vaccine dose in girls aged 10–14 years who had received 3 doses of CervarixTM (n=617) or hepatitis A vaccine as control (n=571) at 0, 1 and 6 months (104902/NCT00316706). **RESULTS:** At Month 7, all subjects had seroconverted for both antigens. At Month 24, seropositivity rates were 99.8% for HPV-16 and 100% for HPV-18 (ATP cohort), with respective GMTs of 3226.3 and 1263.4 EL.U/mL. The antibody kinetic profile showed a peak response at Month 7 followed by gradual decline and plateau starting between months 18 and 24. No withdrawals due to adverse events and no vaccine-related SAEs were reported over the 24-month follow-up. **CONCLUSIONS:** Results confirm persistence of immune response to CervarixTM in girls aged 10–14 years 24 months post-first vaccine dose. For both antigens, GMTs were 4-8-fold higher than those elicited in young women aged 15-25 years, for whom up to 5.5 years protection has previously been shown. This suggests that CervarixTM will result in long-term protection when administered to young adolescents.

Topic: Vaccines and prevention

Paper number: 1088

Presentation type requested: Poster Presentation

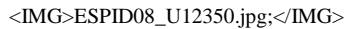
EVALUATION OF VACCINAL STATUS IN IMMIGRATED CHILDREN

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BACKGROUND AND AIMS: The aim of this study was to evaluate the immunization status in recently immigrated children from developing countries. **METHODS:** From 2003 to 2007 we studied 51 immigrated children within few months of arrival in Italy. They were 18 females, 33 males (mean age 6 years, range 2-14 years); 14 were coming from Africa (27.4%), 14 from India (27.4%), 13 from East Europe (25.4%) and 10 from South America (19.6%). We measured antibody titers for poliovirus, tetanus and diphtheria using immunoenzymatic assay in all patients, regardless of referred immunization story.

RESULTS: Only 7 children (13.7%) had protective titers for all three diseases, while 44 (86.3%) had at least one absent or low titer (Table). The lowest immunization rate was observed for poliovirus. The same trend was observed in children from all different geographic areas, and also in patients with vaccination records. **CONCLUSIONS:** Our data underline the fact that most of immigrated children were not completely protected against tetanus, diphtheria and poliovirus and that the vaccination records often were not reliable. It may be due to transcription errors or technical problems (perhaps expired or not well preserved vaccines). We conclude that immigrated children should undergo titer assessment in order to program revaccination schedule.



Topic: Vaccines and prevention

Paper number: 1111

Presentation type requested: Poster Presentation

INTERNATIONALLY ADOPTED CHILDREN: SHOULD VACCINATION BE COMPULSORY?

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BACKGROUND AND AIMS: International adoption of children is continuously increasing. One of the main concerns about them is their vaccination status, but the few reports published have not clarified this issue. Our objectives were to know the seroprotection rate for vaccine-preventable diseases in children adopted from abroad, and to establish if there are any clearly-predictive factors for vaccine protection. **METHODS:** Transversal study of children evaluated in an International Adoption Clinic in Madrid (Spain). Demographic data and information from pre-adoptive immunization records were collected. We measured antibody titres for polioviruses, tetanus, diphtheria, measles, mumps, rubella and hepatitis-B. We analyzed the relationship between rates of immune-protection and independent variables by univariate and multivariate analysis. **RESULTS:** A total of 637 children coming from 24 countries, most frequently from China (46%) and India (21%), were included. Eighty-seven percent had vaccine records, 73% considered valid. Serological studies showed protective titres for poliovirus-1: 89%, poliovirus-2: 96%, poliovirus-3: 90%, tetanus: 92%, diphtheria: 76%, measles: 79%, mumps: 30%, rubella: 38%, hepatitis-B: 76%. The only independent factor associated with vaccine-protection for all of the antigens was the country of origin. The best rate of protection was found in children coming from Eastern-Europe and, in descending order, India, Latin-America, China and Africa. No relationship was found between serological protection and the rest of analyzed variables. **CONCLUSIONS:** A high rate of vaccine seroprotection was found in internationally adopted children. The proportion of children with vaccination records, valid documentation and correct vaccine schedules was also high. The country of origin can accurately predict vaccine seroprotection

Topic: Vaccines and prevention

Paper number: 1143

Presentation type requested: Poster Presentation

HEALTH BENEFITS AND BUDGET IMPACT OF A PARTLY FUNDED ROUTINE ROTAVIRUS VACCINATION PROGRAMME WITH ROTATEQ® IN BELGIUM

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BACKGROUND AND AIMS: RotaTeq®, a pentavalent rotavirus vaccine, is currently recommended and partially funded in Belgium. The objective of the study was to assess the health outcomes and budget impact of a routine (currently 90% coverage) rotavirus vaccination programme with Rotateq in Belgium. **METHODS:** A decision analytic model was developed to compare a situation without vaccination with a routine vaccination programme with Rotateq in a Belgian birth cohort, followed from birth until the age of 5. Input parameters were derived from the literature and the Belgian epidemiological study REVEAL. Efficacy data were taken from REST, a large RCT conducted with RotaTeq. The main outcome measures were events avoided and total direct and indirect costs for Belgian health care provider (HCP) and society. **RESULTS:** The model estimated that versus no vaccination the introduction of a routine RV vaccination programme (90% coverage rate) with Rotateq would reduce the RVGE burden by 76% in Belgium: 8,194 home care cases, 7,148 GP/paediatrician visits, 4,842 hospitalisations, 996 nosocomial infections and 2 deaths would be avoided. The RVGE cost was estimated at 9 M€ from the HCP perspective and 15.3 M€ from the societal perspective. The introduction of such a RV vaccination programme would reduce the RVGE costs by about 78% for both perspectives. Including vaccination cost, the net budget impact would be 7 M€ and 5.5 M€ from HCP and societal perspectives, respectively. **CONCLUSIONS:** Routine vaccination of infants with RotaTeq is an effective approach for reducing the disease burden and costs associated with RVGE in Belgium.

Topic: Vaccines and prevention

Paper number: 1147

Presentation type requested: Oral Presentation

INFLUENZA VACCINATION COVERAGE IN ASTHMATIC CHILDREN IN FRANCE FOR THE SEASON 2006-2007

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BACKGROUND AND AIMS: In France, annual influenza vaccination is recommended for asthmatic patients. For all at-risk patients including those with asthma, the national health objective is to achieve 75% influenza vaccination coverage (IVC) in 2008. A voucher for annual free influenza vaccination is sent by National Health Insurance for patients with an underlying chronic disease including severe asthma. This measure was extended to asthmatic patients of any severity in November 2006. We assessed the IVC rate in asthmatic children in 2006-2007. **METHODS:** A multicentre observational study in eight hospitals throughout France was conducted (March-September 2007). Inclusion criteria: children aged 6 to 17 years, consulting a pneumo-paediatrian, with an asthma diagnosis for over 6 months and having a vaccination card. Data were collected on a written questionnaire. **RESULTS:** Data from 433 children were analysed (mean age: 9.5 years, 61% male). The global IVC rate was 15.7% in 2006-2007. Among the children, 39.6% had received a voucher. Receiving a voucher increased the IVC (31% vaccinated with voucher versus 5.9% vaccinated without, $p < 0.001$). Vaccination was mainly administered by general practitioners (72.1%). The main reason for non-vaccination was a lack of information (42%). The IVC rates were 10.9% in 2004-2005 and 13.9% in 2005-2006. **CONCLUSIONS:** In France, the IVC rate in 2006-2007 in asthmatic children was much lower (15.7%) than the national objective of 75%. The recent extension of free vaccination to all asthmatic patients should improve the IVC rate, but, provision of more information to patients on influenza disease risks and vaccination benefits, could further improve this rate.

Topic: Vaccines and prevention

Paper number: 1158

Presentation type requested: Poster Presentation

THE CHANGING EPIDEMIOLOGY OF MENINGOCOCCAL DISEASE IN SAO PAULO

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BACKGROUND AND AIMS: The incidence rates of meningococcal disease are stable in the last years, but a significant increase in the proportion of cases due to serogroup C was recently observed in Sao Paulo.

To better understand the recent changes in the epidemiology of meningococcal disease in our region we determined the distribution of serosubtypes of *N. meningitidis* isolates between 2000 and 2007

METHODS: We compared the characteristics of all *N. meningitidis* by serogrouping and serotyping isolated in blood or CSF from patients admitted in two hospitals in two periods (2000–2003 and 2004–2007) **RESULTS:** In the first period (2000-2003) 51 patients were included and serogroup B was prevalent, identified in 51% of cases, serogroup C in 45% of cases and serogroup W135 in 3% of cases. Among Men B and Men C strains the prevalent serosubtypes identified were P1.19,15 (84%) and P1.14-6 (60%), respectively.

In the second period (2004-2007) 39 patients were included and serogroup C became prevalent, identified in 70% of cases, serogroup B in 23% of cases and serogroup W135 in 5% of cases. In this period all Men C strains were serosubtype P1.14-6 and 55% of Men B strains were serosubtype P1.19-15

CONCLUSIONS: Our data confirm serogroup C23P1.14-16 and serogroup B4,7 P1.19,15 as the major strains causing meningococcal disease in Sao Paulo

Characterization of *N. meningitidis* isolates is critical to understand the epidemiology of meningococcal disease and to anticipate the appropriateness of the multivalent conjugate vaccines and the new candidate genome-based meningococcal B vaccine in our region

Topic: Vaccines and prevention

Paper number: 1159

Presentation type requested: Poster Presentation

THE IMMUNOGENICITY AND SAFETY OF TD BOOSTER IMMUNIZATION IN PREADOLESCENTS

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BACKGROUND AND AIMS: Recently, the first Td booster immunization is usually recommended for pre-adolescents(11-12 yrs old age) to increase compliance of Td vaccination. However, many pediatric physicians worry about that earlier Td vaccination may cause greater adverse reactions, and there was few immunogenicity study of Td vaccination in pre-adolescents. In this aspect, the acceptant and catch-up rate of Td vaccination is still low in Korean. This study was conducted to confirm the reactogenicity and immunogenicity of the first Td booster immunization in preadolescents in Korea

METHODS: 183 healthy preadolescents, who previously vaccinated with 4 or 5 doses of DTaP(two components acellular vaccine) vaccines until 6 yrs old age, were enrolled in this study. Reactogenicity(local and systemic reactions) was assessed for 21 days postvaccination using diary cards. And tetanus and diphtheria anti-toxoid antibody in sera just before and 4 weeks postvaccination were measured by ELISA for assessment of immunogenicity. **RESULTS:** The seroconversion rates of diphtheria and tetanus Abs. were 100%. And the post booster-geometric mean titers of diphtheria and tetanus Abs were 5-7 times as high as the pre vaccination-geometric mean titers of diphtheria and tetanus Abs. The pain on injection sites was the most common local reaction after Td vaccination.

And head ache was the most common systemic reaction. The local and systemic reactogenicities were not severe and self limited.

CONCLUSIONS: Td booster vaccination in pre-adolescents were reactogenic, more injection site morbidities were confirmed. But, all adverse reactions were bearable.

Td vaccine tested in this study was high immunogenic and showed an acceptable tolerance in pre-adolescents.

Topic: Vaccines and prevention

Paper number: 1161

Presentation type requested: Poster Presentation

IMMUNOGENICITY AFTER JAPANESE ENCEPHALITIS VACCINATION

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BACKGROUND AND AIMS: The schedule of inactivated Japanese encephalitis (JE) vaccine immunization was changed since 2000 and the live attenuated vaccine has also been use since 2001 in Korea. This study is aimed to assess the immunogenicity by measuring the JE neutralizing antibody (NTAb) titers in the inactivated vaccination (Nakayama strain) group and live attenuated vaccination (SA 14-14-2 strain) group. **METHODS:** We included 167 children aged from 2 to 6 years, admitted to the pediatric department of 6 university hospitals in Korea from August 2006 to March 2007. The completion of the primary vaccination was confirmed by the vaccination records in all subjects. We measured the NTAbs titers in the inactivated vaccination group and live attenuated vaccination group. **RESULTS:** Of the 167 patients, who were tested, 103 children received inactivated vaccine, and 64 received live attenuated vaccine. All patients in both groups tested positive for NTAbs, which was defined as a serum titer greater than 1: 10. The geometric mean titers of NTAbs was 1:328 in inactivated vaccination group and 1:266 in live attenuated vaccination group, respectively without significant difference (p=0.19 by t-test). Regardless of the types of vaccine, the NTAbs titers reached peak between 1-4 months after initial vaccination, then slowly decreased. **CONCLUSIONS:** NTAbs titers against JE virus were equally positive at sufficient protective levels in both inactivated vaccination group and live attenuated vaccination group.

Topic: Vaccines and prevention

Paper number: 1172

Presentation type requested: Oral Presentation

SAFETY OF HUMAN PAPILLOMAVIRUS (HPV)-16/18 AS04 ADJUVANTED VACCINE FOR CERVICAL CANCER PREVENTION: INTEGRATED SUMMARY OF 11 CLINICAL TRIALS

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<pre>Background and aims: An integrated safety summary (ISS) of the human papillomavirus (HPV)-16/18 AS04 adjuvanted vaccine (Cervarix™, GlaxoSmithKline) has been performed in an ethnically and geographically diverse cohort of almost 30,000 women aged 10–72 years. The large size of this safety database allows for the detection of infrequent and rare adverse events (AEs).

Methods: In 11 phase II/III trials, 16,142 women received at least one dose of Cervarix™ and 13,811 received control vaccines (Al(OH)₃ or Havrix™ [720 or 360

EL.U., GlaxoSmithKline]). Serious adverse events (SAEs), medically significant conditions (MSC) and new onset of autoimmune disease (NOAD) were evaluated up to 5.5 years. The analysis was performed by treatment group, age (10-14, 15-25 and 25+) and reporting period (Month 0-7 and Month 7-beyond). Pregnancy outcomes and drop-outs due to AE or SAE were also monitored for the entire follow-up period.

Results: Compliance with 3-dose schedule was excellent and did not differ between Cervarix™ and control groups (93.4% versus 88.7–98.2%). During Month 0-7 period, no differences were observed between Cervarix™ and control groups in rates (across age groups) of SAEs (0.9-1.4% versus 0.9-1.5%), MSCs (12.4-17.6% versus 13.6-21.6%), NOADs (0.1-0.2% versus 0.1-0.3%), respectively. Beyond Month 7, no differences were observed between groups in rates of any AE. Also, no differences were observed in pregnancy outcomes or the proportion of study withdrawals due to AEs or SAEs.

Conclusions: Results of this large ISS show Cervarix™ to have a favorable safety profile.

Topic: Vaccines and prevention

Paper number: 1174

Presentation type requested: Poster Presentation

SURVEILLANCE OF VARICELLA IN THE SICILIAN PAEDIATRIC POPULATION FOLLOWING THE INTRODUCTION OF UNIVERSAL VACCINATION

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BACKGROUND AND AIMS: To monitor the introduction of universal varicella vaccination in Sicily (aim: $\geq 80\%$ of children aged 12-23mo; 50% of susceptible adolescents aged 11-12yrs), two studies were implemented:

- A varicella surveillance study from March 2005, evaluating the impact of vaccination;
- A vaccination coverage survey, from 2003, monitoring vaccination coverage and improving the information flow between health structures.

METHODS: A sample of 30 randomly chosen Family Paediatricians (FPs), with expected enrolment of 16.000 children aged 0 to 14yrs over three years, collected data on varicella vaccination, disease, complications and herpes zoster.

- Vaccinations are provided by vaccination centres and reported to districts supervised by local health units (LHUs). A local area network including districts, LHUs and Regional Health Council were assessing the overall, age/birth-cohort specific coverage data. The National Institute of Statistics data (01/01/06) were used as denominators.

RESULTS: A total of 27428 children were enrolled (informed consent obtained). Varicella incidence (per 1000 PY) was 50.5 in 2005 and 10.2 for 1st semester 2007.

- The overall coverage increased from $\sim 20\%$ (2003) to 67.6% (January-June 2007) and from $\sim 15.5\%$ (2003) to $\sim 29\%$ (January-June 2007) for the 12-23mo and the 11-12yr old, respectively.

CONCLUSIONS: In June 2007, vaccination coverage objectives have been attained by 84.3% and 75.2% for children 12-23mo and 11-12yr old, respectively. This high coverage appears to have had an impact on the decrease of varicella incidence in Sicily. The implementation of both studies was satisfactory, thanks to the close and efficient collaboration between hygienists working at VCs and FPs.

Topic: Vaccines and prevention

Paper number: 1199

Presentation type requested: Poster Presentation

MIDWIVES AND VACCINATION: A SURVEY IN MIDWIVES ON VACCINATION STATUS AND ON KNOWLEDGE, ATTITUDES, AND BEHAVIOUR REGARDING VACCINATION, GERMANY, 2007

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BACKGROUND AND AIMS: In Germany, midwives support parents after the birth of a child and give advice regarding prevention, e.g. vaccination. Since parents are likely to consider midwives as a reliable source for health-related advice, they are important multipliers in communicating immunisation advice. However, little is known about knowledge and attitudes of midwives towards vaccination. **METHODS:** A cross-sectional study was conducted during the German Midwives' Association Meeting 2007. Every midwife attending the congress was asked to fill in a standardised questionnaire eliciting demographics, occupational training, vaccination status, attitudes and behaviour regarding vaccination and recommendation of childhood vaccinations. Data were analysed using SPSS (version 14.0, Chicago) and Epi-Info (version 3.3.2, Atlanta). **RESULTS:** Of 1,200 questionnaires distributed, 549 (46%) were returned completed. Median age of participants was 38 years (range 19-68). The majority (368, 67%) advised parents regarding vaccination. Vaccination against hepatitis B and pertussis in the preceding 10 years was reported by 380 (69%) and 102 (18%) participants, respectively. Vaccination was considered an effective measure to avoid vaccine preventable diseases by 391 (71%) midwives. There was a statistically significant association between positive attitude towards vaccination and having received pertussis vaccination (prevalence ratio (PR) 3.6, 95% confidence interval (CI): 1.9-6.9) or recommending pertussis vaccination in early childhood (PR 1.9, 95% CI: 1.5-2.5). **CONCLUSIONS:** Midwives' attitude towards vaccination is associated with their own vaccination status and their advice to parents. As the majority of participants considered vaccination an effective prevention measure, midwives' continuing education should focus on consolidating knowledge regarding the benefits and safety of vaccines recommended in infancy.

Topic: Vaccines and prevention

Paper number: 1205

Presentation type requested: Poster Presentation

COST IMPACT OF PAEDIATRIC ROTAVIRUS GASTROENTERITIS (RVGE) AND POTENTIAL BENEFITS OF A UNIVERSAL VACCINATION PROGRAMME IN SPAIN

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BACKGROUND AND AIMS: Rotavirus disease is associated with substantial financial burden. The virus is a major cause of acute gastroenteritis in infants and children under the age of 5 years worldwide. The objective of this study is to evaluate the cost impact of paediatric rotavirus gastroenteritis (RVGE) and potential benefits of a universal rotavirus vaccination programme with Rotarix™ (GlaxoSmithKline Biologicals) in Spain. **METHODS:** A pharmacoeconomic model (Markov) with Spanish data on transition probabilities, incidence, resource utilization and healthcare costs was applied to a birth cohort of 466,371 infants followed for five years. Effects of seasonality of infection and the protective effect of breastfeeding were captured. Routine vaccination with the 2-dose oral vaccine Rotarix™ was compared with no vaccination. **RESULTS:** Without vaccination, 110,028 RVGE cases would occur in the birth cohort over 5 years. Rotavirus vaccination is predicted to prevent 92,654 RVGE cases (4,853 severe and 737 nosocomial) and 6 deaths, with a significant decrease in the healthcare burden of disease over the five years, with 1,822 hospitalizations, 18,433 emergency visits, 45,244 paediatrician visits and 11,470 homecare avoided. As a consequence, the cohort vaccination would result in a disease cost reduction of 18.5 and 36.6 million€ (NHS and societal perspective, respectively). The universal rotavirus vaccination for the same period would have a net cost per vaccinated infant of 12.29€ (2.46€ per year at risk). Sensitivity analyses confirmed the robustness of the model. **CONCLUSIONS:** Universal rotavirus vaccination with Rotarix™ would represent an opportunity to significantly reduce the paediatric RVGE burden in Spain.

Topic: Vaccines and prevention

Paper number: 1216

Presentation type requested: Poster Presentation

EFFECTS OF THE NATIONAL IMMUNIZATION PROGRAM FOR PREVENAR (PCV7) ON IPD IN CHILDREN IN GERMANY

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BACKGROUND AND AIMS: For almost 20 years the German National Reference Center for Streptococci has been monitoring the epidemiology of invasive pneumococcal disease (IPD) in German children up to 15 years of age. In July 2006 evidence of the beneficial effects of a heptavalent conjugate vaccine on the incidence of IPD led to a general recommendation for the vaccination with a 7-valent pneumococcal conjugate vaccine (PCV7) for all children up to the age of 24 months. In this study we present the impact of the national immunization program with PCV7 (3+1 doses) on the incidence of IPD in Germany.

METHODS: Cases of IPD in children were reported by microbiological laboratories and pediatric hospitals. Species confirmation was done by optochin testing, bile solubility and serotyping.

RESULTS: As from January 2007 approximately 84% of all newborns in Germany have been vaccinated with at least one dose of PCV7. In children under 2 years of age the number of cases caused by vaccine serotypes reported per month decreased markedly in the second half of 2007. The number of non-vaccine serotype cases in that same period did not differ from the years before. A reduction in reported cases of IPD caused by vaccine serotypes was also observed in the age groups 2-5 and 5-15.

CONCLUSIONS: PCV7 effectively reduced the incidence of vaccine serotype IPD in German children under 2 years of age, further contributing to the impact of PCV7 worldwide. A possible herd-immunity effect was observed in children from 2-15 years of age.

Topic: Vaccines and prevention

Paper number: 1217

Presentation type requested: Poster Presentation

RATIONAL FOR THE POSSIBLE INTRODUCTION OF HAEMOPHILUS INFLUENZAE VACCINE INTO THE VACCINATION PROGRAMME OF IRAQ AND OTHER DEVELOPING COUNTRIES.

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<pre>BACKGROUND AND AIMS:</pre>

Haemophilus influenzae type b (Hib) was the most common bacterial pathogens causing meningitis during the first year of life before. The introduction and wide spread use of Hib vaccines was associated with marked reduction in the frequency of Haemophilus infection, and Haemophilus influenzae is no longer the most common bacterial pathogens causing meningitis during the first year of life in many geographic areas such as UK and USA. The aim of this paper is to discuss the rational for the possible introduction of Hib vaccine into vaccination program of a developing country like Iraq.

<pre>METHODS:</pre>Formulation of a hypothesis describing the Rational for the possible introduction of Haemophilus influenzae vaccine into the vaccination program of Iraq and other developing countries According to our experience at the University Hospital in Al Kadhimiyia (One of the three large teaching hospitals in Baghdad) based on the success associated with the introduction of the Hib vaccines into the developed counties vaccination program.

<pre>RESULTS:</pre>Many of the new therapies and preventive measures including new antibiotics(e.g. third generation cephalosporins) and new vaccines(e.g. Hepatitis B vaccine) have been introduced in Iraq and other developing countries with a beneficial effect based on outside researches and experiences rather than Iraqi researches and clinical studies. Obviously ,improvement in the specific diagnosis of bacterial meningitis cant be witnessed in Iraqi hospital in the near future.

<pre>CONCLUSIONS:</pre>It seems logic that Hib vaccines should be introduced into the Iraq vaccination program depending on evidences available from out-side Iraq.

Topic: Vaccines and prevention

Paper number: 1230

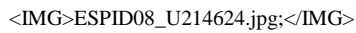
Presentation type requested: Poster Presentation

**PHARMCOECONOMIC ANALYSIS OF UNIVERSAL INFLUENZA VACCINATION VERSUS TREATMENT IN
POLAND**

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BACKGROUND AND AIMS: Our aim was to consider whether universal vaccination of polish population would be cost-effective.
METHODS: Methodology was based on that of Muennig & Khan (2001) with simplification to total costs and adjustment to polish situation. We developed a decision-analytic model to compare in a single season the total costs of two alternative strategies: no vaccination and universal vaccination.
RESULTS: Table 1. lists the total cost of the two strategies. The decision-analysis model predicted that the universal vaccinations would not be cost-effective in comparison with symptomatic treatment. The results were particularly sensitive to the vaccine cost and hospitalization rate, and surprisingly relatively non-sensitive to cost of medical visit and sick-leave payments which are expected to grow in Poland in the near future. The threshold price of vaccinations ensuring cost-effectiveness of universal influenza vaccinations in Poland is estimated to be around 10,3 PLZ.
CONCLUSIONS: Universal influenza vaccination in Poland is likely to be cost-effective only with lower vaccines prices.



Topic: Vaccines and prevention

Paper number: 1240

Presentation type requested: Oral Presentation

IMMUNOGENICITY AND SAFETY OF LIVE ATTENUATED INFLUENZA VACCINE CO-ADMINISTERED WITH ORAL POLIOVIRUS VACCINE

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BACKGROUND AND AIMS: Simultaneous administration of vaccines can increase vaccination coverage and help ensure compliance with vaccination schedules. We conducted a multicenter study to determine immunogenicity and safety of intranasal live attenuated influenza vaccine (LAIV) co-administered with live oral poliovirus vaccine (OPV) in young children. **METHODS:** A total of 2503 children aged 6 to 36 months, from 7 countries in South America and Asia, were randomized 1:1:1 to receive LAIV + OPV, placebo + OPV, or LAIV alone, followed by dose 2 for each group: LAIV, placebo, or LAIV, respectively. Postvaccination immune responses were measured by neutralization and hemagglutination inhibition assays. Reactogenicity, adverse events, and serious adverse events were recorded. **RESULTS:** A total of 2337 subjects (93.4%) completed the study. Geometric mean fold-rise in geometric mean titers and seroconversion rates for LAIV + OPV recipients were noninferior to LAIV alone for each influenza strain contained in the vaccine (seroconversion: A/H1N1: 58.2% vs. 51.7%, [P=0.015]; A/H3N2: 60.4% vs. 58.7%; B: 25.2% vs. 22.9%, respectively). Seroresponse rates to poliovirus strains after LAIV + OPV were noninferior to placebo + OPV: poliovirus type 1, 98.7% vs. 99.3%; type 2, 99.3% vs. 99.4%; type 3, 97.1% vs. 95.9%, respectively. Incidences of reactogenicity events, adverse events, and serious adverse events were similar among treatment groups. **CONCLUSIONS:** OPV and LAIV can be safely co-administered to young children. Immune responses after concomitant vaccination with LAIV and OPV were noninferior to vaccination with either vaccine alone.

Topic: Vaccines and prevention

Paper number: 1248

Presentation type requested: Poster Presentation

ACUTE CEREBELLAR ATAXIA IN THE NETHERLANDS: A STUDY ON ASSOCIATION WITH VACCINATIONS AND VARICELLA ZOSTER INFECTION.

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BACKGROUND AND AIMS: Acute cerebellar ataxia (ACA, i.e. unsteady gait), is a known complication of varicella. It is also described after vaccinations, but this association is never established. Currently in the Netherlands the uptake of varicella zoster immunisation in the National Immunisation Programme (RVP) is under debate. Therefore we want to gain insight in incidence rates of (varicella related) ACA in the Netherlands and study a possible association with vaccinations.**METHODS:** In 2002-2003 information on ACA and vaccinations was collected by a questionnaire. For the same period hospitalisation reports on varicella (ICD-9 052), varicella with other specified complications (ICD-9 052.7) and ataxia (ICD-9 334.3 and 334.4) were obtained.

Capture-recapture (CRC) approach, using the sources above, was performed to estimate underreporting.

RESULTS: 45 cases were included from the questionnaire. ACA did not occur in the risk window of vaccinations, but was preceded by varicella in 15 cases. In 13 hospitalisation reports ACA was plausible, 5 times related to varicella. Through CRC the estimated number of all ACA cases was 64, resulting in an incidence of 1.07:100,000 (95%CI 0.83-1.36). Considering varicella related ACA, the estimated number was 15, rendering an incidence of 0.25:100,000 (95%CI 0.15-0.41).**CONCLUSIONS:** We found no association with vaccinations. The estimated incidences of (varicella related) ACA are in line with rates, found in other countries. In the PMS of a VZV vaccine the reporting rate of ACA is 0.15: 100,000 doses, lower than the incidences we found. This is usefull information in the process of discussing the possible uptake of VZV vaccination in the RVP.

Topic: Vaccines and prevention

Paper number: 1249

Presentation type requested: Oral Presentation

SAFETY, EFFICACY, AND IMMUNOGENICITY OF LIVE, ATTENUATED INFLUENZA VACCINE CONCURRENTLY ADMINISTERED WITH A COMBINATION MUMPS, MEASLES, AND RUBELLA VACCINE

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BACKGROUND AND AIMS: Because concurrent administration of multiple childhood vaccines increases compliance and vaccination rates, the objective of this study was to assess safety, efficacy, and immune responses after concurrent administration of live attenuated influenza vaccine (LAIV) and a combined live mumps, measles, and rubella vaccine (Priorix®).
METHODS: Children aged 11 to <24 months (n=1233) were randomized to receive 2 intranasal doses of LAIV or placebo, ≥28 days apart. Dose 1 was co-administered with Priorix.
RESULTS: Antibody responses to mumps and measles antigens were unaffected by co-administration with LAIV. Fewer LAIV + Priorix recipients demonstrated a rubella seroresponse (titer ≥15 IU/mL; 78.0% vs 83.9% for placebo + Priorix). However, using a 10 IU/mL threshold, rubella response rates were noninferior among LAIV + Priorix recipients (89.8% vs 93.4%). The geometric mean fold-rises from baseline in antibody titers were mumps, 4.1 vs 4.0; measles, 2.8 vs 2.4; and rubella, 3.1 vs 4.3 for Priorix administered with LAIV or placebo, respectively. The efficacy of LAIV was 78.4% against vaccine-like influenza subtypes (B strains, 81.7%; A/H3 strains, 68.5% [not significant]; A/H1 strains, insufficient cases to estimate efficacy) and 63.8% against any community-acquired strain. Fever, runny nose/nasal congestion, decreased appetite, and fever medication use were more frequent after dose 1 of LAIV.
CONCLUSIONS: Immune responses to a combined measles, mumps and rubella vaccine were similar for all 3 antigens (using a 10 IU/mL threshold for rubella) whether co-administered with LAIV or placebo. The efficacy of LAIV was not affected by concomitant administration with Priorix.

Topic: Vaccines and prevention

Paper number: 1250

Presentation type requested: Poster Presentation

THE EFFICACY OF A SCHOOL-BASED HEPATITIS-B VACCINATION PROGRAM

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BACKGROUND AND AIMS: Hepatitis-B virus is the most common cause of viral hepatitis. Active protection against this disease is achieved by use of hepatitis-B vaccines produced by genetic engineering. According to the recommendations of the World Health Organization, hepatitis-B vaccination is recommended for all infants and children aged 12 years. Children 12 years of age receive the three-dose series. Medical indications for hepatitis-B vaccination include health-care workers, persons in training in schools of medicine who may be exposed to infected materials, as well as other groups at risk such as: hemodialysis patients, hemophilia patients, intravenous drug-addicts, users of social services, insulin-dependent patients, sex partners of HBsAg-positive persons, infants of HBs-positive mothers.

The aim of this study was to establish the hepatitis-B vaccination coverage among sixth-grade students – 12 years of age.

METHODS: The study reviewed medical records of children born in 1994 treated in the school outpatient settings of the elementary school “Dr. Bosko Vrebalov” in Zrenjanin. 850 medical records (100%) were reviewed to determine the total number of vaccinated children aged 12 years, as well as the number of children who received the I and II dose. **RESULTS:** 786 children (92.47%) were fully vaccinated (received 3 doses); 810 (94.95%) children were not fully vaccinated (received 2 doses) and 827 (97.29%) children received 1 dose only. **CONCLUSIONS:** The future of medicine lies in the prevention. From the above we may conclude that there is a good collaboration between parents and pediatricians regarding childhood vaccination and the majority of children are vaccinated.

Topic: Vaccines and prevention

Paper number: 1255

Presentation type requested: Oral Presentation

A RANDOMIZED, PLACEBO-CONTROLLED, DOUBLE-BLIND, PHASE 1 TRIAL OF ASCENDING DOSES OF MENINGOCOCCAL GROUP B RLP2086 VACCINE

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BACKGROUND AND AIMS: Neisseria meningitidis is a leading cause of meningitis and septicemia worldwide. Conjugate vaccines for serogroups A, C, Y, and W135 have been developed; however, a vaccine against endemic serogroup B disease is not available. Recombinant lipoprotein 2086 (rLP2086), a conserved outer membrane protein, is a novel vaccine candidate for broad protection against serogroup B meningococci. **METHODS:** One hundred three (103) subjects aged 18 to 25 years were recruited sequentially into 3 ascending dose cohorts of rLP2086 20, 60, and 200 µg, respectively; each dose comprised equal amounts of rLP2086 subfamily A and subfamily B protein. Each cohort was randomized in a 2:1 ratio to receive intramuscular (IM) rLP2086 or placebo in a 0, 1, 6 month schedule. Sera for assessment of Serum Bactericidal Activity (SBA) against a panel of 6 diverse serogroup B strains were collected at baseline and 1 month after each dose. Seroresponse was defined as a 4-fold increase in SBA post-dose 3 over baseline. **RESULTS:** Most subjects reported only mild or moderate self-limiting adverse events. The SBA responses to the 6 strains were dose dependent, varying from 22.2–83.3% for the 20 µg, 55–95% for the 60 µg, and 50–100% for the 200 µg level. At the highest dose, >87.5% of subjects responded against 5/6 serogroup B strains, and Geometric Mean Titers (GMTs) postdose 3 were >60:1 against all strains and >100:1 against 4 strains.

CONCLUSIONS: As a candidate serogroup B meningococcal vaccine, rLP2086 demonstrates a favourable safety and dose-dependent immunogenicity profile in young adults.

Topic: Vaccines and prevention

Paper number: 1256

Presentation type requested: Poster Presentation

THE EFFICACY OF MEASLES-MUMPS-RUBELLA (MMR)

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BACKGROUND AND AIMS: Immunization is one of the most significant achievements of the 20th century. A huge number of bacteria, viruses and other microorganisms are found everywhere in our environment and they may be a cause of infections, diseases and even death. Vaccination is a simple, highly effective and an inexpensive means of disease prevention. The consequences of infectious diseases are far more serious than the potential side effects of immunization, which are extremely rare.

A routine measles-mumps-rubella (MMR) vaccination should result in worldwide eradication of measles, which is the principal goal. According to our national program, children in Serbia receive. The aim of this investigation was to establish the MMR vaccination coverage in the Child and Adolescent Health Service in Gornji Milanovac during 2007.

METHODS: We reviewed medical and vaccination records of children aged one and six years of age in 2007.
RESULTS: In 2007, out of 370 children aged 2 years, 365 (98.6%) of children received the MMR vaccine, whereas of 355 children, 342 (96.3%) were revaccinated at the age of 7. According to our regulations and recommendations of WHO, the first vaccine should be given at an optimal time and cover at least 95% of children. In our case this was achieved.
CONCLUSIONS: All the children of the world should receive the right vaccine at the right time. National immunization systems require continuous investment of human, material and technical resources, because investing in child health, through investing in immunization, is the greatest investment into the future.

Topic: Vaccines and prevention

Paper number: 1262

Presentation type requested: Oral Presentation

PEDIATRIC SAFETY EVALUATION OF AN AS-ADJUVANTED H5N1 PREPANDEMIC CANDIDATE VACCINE IN CHILDREN AGED 6-9 YEARS. A PHASE II STUDY

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BACKGROUND AND AIMS: Children suffer severe effects of influenza and play a major role in disease transmission, therefore prepandemic influenza vaccination of children may be a highly effective measure to contain the spread of pandemic influenza and to reduce its morbidity and mortality. **METHODS:** This phase II paediatric study (107066/NCT00502593) evaluated the safety of two immunizations administered 21 days apart of an H5N1 split virus influenza vaccine containing 1.9µg HA adjuvanted with an oil-in-water emulsion-based Adjuvant System (H5N1/AS group) as compared to immunizations with the non-adjuvanted seasonal influenza vaccine Fluarix™ marketed by GlaxoSmithKline. For this partial preliminary analysis, 69 children aged 6-9 years completed the safety evaluation (H5N1/AS:N=51, Control:N=18). Solicited local (SLS) and general (SGS) symptoms, adverse events (AE) and serious AE (SAEs) were recorded. **RESULTS:** Considering the entire follow-up, injection site pain was the most frequent SLS in both H5N1/AS and control groups (44/51 vs. 12/18), with grade-3 pain in 5 children from the H5N1/AS group vs. 0 in the Control group. SGS were more frequent in the H5N1/AS group. Grade-3 SGS were reported in 4/51 children in the H5N1/AS (2 headaches, 1 gastrointestinal disorder, 1 myalgia) and in 1/18 in the control group (1 fever). Most symptoms lasted 1-2 days with no increase of duration or severity with the second dose. No distinct pattern of symptomatology was noted. No SAEs were reported. **CONCLUSIONS:** In children aged 6-9 years, the candidate H5N1 AS-adjuvanted vaccine did not raise any safety concerns and the reactogenicity profile was clinically acceptable.

Topic: Vaccines and prevention

Paper number: 1271

Presentation type requested: Poster Presentation

KNOWLEDGE ABOUT HUMAN PAPILLOMAVIRUS AND CERVICAL CANCER AMONG MEDICAL STUDENTS

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BACKGROUND AND AIMS: Human papillomavirus (HPV) infection is one of the most common sexually transmitted disease (STD) worldwide. Among other reasons, HPV is a critical risk factor for developing cervical cancer. The aim of the study was to evaluate medical students' knowledge about HPV and the other risk factors on the development of cervical cancer.

METHODS: The medical students were asked to complete a self-administered questionnaire assessing the knowledge regarding STDs and cervical cancer.

RESULTS: A total of 309 Year 1-2 (Group 1) and Year 5-6 (Group 2) medical students filled in the questionnaire. The mean age of the students was 21 ± 2 years. Of them, 52% were male and 48% were female. About 20% of students in Group 1 and 94% of the students in Group 2 knew that HPV is one of the STDs. However, only 45% of the students (28% for Group 1 and 72% for Group 2) knew that HPV is a risk factor in the development of cervical cancer. About 66% of the students have not heard of the presence of HPV vaccine in the prevention of cervical cancer.

CONCLUSIONS: From the data obtained in this study, it can be said that medical students' knowledge especially on the association of HPV and cervical cancer is not sufficient and more information on the STDs should be given to them in the medical education program in order to prepare them better for their future role in the education of public and the prevention of diseases.

Topic: Vaccines and prevention

Paper number: 1272

Presentation type requested: Oral Presentation

SEROPREVALENCE OF HEPATITIS B INFECTION IN TURKISH POPULATION IN CYPRUS

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BACKGROUND AND AIMS: This study was conducted to determine the seroprevalence of HBV infection in Turkish population in Cyprus. The secondary aim of this study was to assess the impact of the universal infant hepatitis B vaccination programme, which started in 1998.

METHODS: A total of 600 persons 1 to 30 years old were selected for the study with cluster sampling. The information on socio-demographic characteristics was gathered for each participant and in 585 of them, hepatitis B surface antigen (HBsAg), anti-hepatitis B surface antigen antibody (anti-HBs) and anticore antibody (anti-HBc) were tested.

RESULTS: The overall prevalence of anti-HBc and HBsAg carriage was 13.2% and 0.85%, respectively. Old age and low parental educational level were the major independent risk factors of HBV transmission. Seroprevalence of anti-HBc was 7% in children aged 1-7 years; it increased from 7.6% at 7 years to 17.9% at 16-20 years. None of the children under 12 years of age were HBsAg positive, while 1.9% of persons aged 16-20 years were HBsAg carriers. Anti-HBs seroprevalence exceeding 90% was found in the cohorts targeted by the routine hepatitis B vaccination programme, whereas 36.4% of young adults aged 21-30 years were anti-HBs positive.

CONCLUSIONS: The study shows that universal infant hepatitis B immunization has a substantial impact on the immunity in the children. However, prevalence of HBV infection is still high in adolescent and young adults in Northern Cyprus. Therefore, catch-up immunization for these groups will help to reduce hepatitis B transmission.

Topic: Vaccines and prevention

Paper number: 1280

Presentation type requested: Poster Presentation

THE MMR VACCINE: A META-ANALYSIS OF DATA OF KOREAN CHILDREN

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BACKGROUND AND AIMS: The purpose of this study was to evaluate the effectiveness, immunogenicity, safety and seroprevalence of MMR vaccines used in Korea through a meta-analysis and to find supporting information in setting up policies suitable for our country's current clinical status. **METHODS:** A database search was done on the MEDLINE, KoreaMed, and Korean Medical Database. References of articles were handsearched and relevant experts were also contacted.

RESULTS: Thirty-seven studies were included in the analysis for measles. MMR vaccine was effective in preventing measles in vaccinated subjects comparing with those not vaccinated. In the immunogenicity analysis, the pooled seroconversion rate for measles IgG was 95.1%. The pooled adverse event rate was 9.6% and fever, injection site erythema and generalized rash were the most common. The pooled seroprevalence for measles IgG in cord blood was 56.8%, infants 6-11 months 26.4% and in children after the age of 12 months, there was a steady increase up to 93.6% in those over 19 years of age. Ten studies on mumps and rubella were found, however a meta-analysis was not performed due to large heterogeneity between study designs and results.

CONCLUSIONS: The MMR vaccine is safe and effective in preventing measles and shows a good immunologic response in Korean children. Further well designed studies on the effectiveness and the immunogenicity on specific antibodies are needed in Korea. Also, a monitoring system on adverse events is inevitable for accurate and consistent evaluation.

Topic: Vaccines and prevention

Paper number: 1281

Presentation type requested: Poster Presentation

HAEMOPHILUS INFLUENZAE TYPE B CONJUGATE VACCINES: A META-ANALYSIS OF IMMUNOGENICITY DATA IN KOREAN INFANTS

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BACKGROUND AND AIMS: The objective of this study was to review trials on Haemophilus influenzae type b (Hib) conjugate vaccines in Korean infants and evaluate the immunogenicity after a primary series of 2 doses and 3 doses. **METHODS:** We searched the MEDLINE, KoreaMed, and Korean Medical Database. A handsearch of reference list of articles was done and experts were contacted. Information on age, vaccine type and laboratory methods for evaluating immunogenicity were noted for evaluation of heterogeneity. **RESULTS:** Ten trials evaluating the immunogenicity of Hib conjugate vaccines in Korean children were found. There was one trial on the diphtheria toxoid conjugate vaccine (PRP-D) and 2 trials each on the mutant diphtheria toxin (PRP-CRM) and Neisseria meningitidis outer-membrane protein (PRP-OMP) conjugate vaccine. Trials on PRP-CRM had data of different age groups, and trials on PRP-OMP were different in character; one of a monovalent vaccine and another of a combination vaccine, so a meta-analysis was not done. Finally, 6 studies were included in the meta-analysis for the immunogenicity of the tetanus toxoid conjugate vaccine (PRP-T). After a primary series of 2 doses and 3 doses of PRP-T, 80.6% (95% CI; 76.0-85.1%) and 95.9% (95% CI; 94.0-98.0%) of infants achieved an antibody level of $\geq 1.0 \mu\text{g/mL}$, respectively. **CONCLUSIONS:** PRP-T conjugate vaccines are highly immunogenic in Korean infants. Infants after a primary series of 2 and 3 doses of PRP-T have responses considered acceptable for effectiveness of prevention of disease. This study will be useful to determine the appropriate immunization schedule in Korea.

Topic: Vaccines and prevention

Paper number: 1282

Presentation type requested: Oral Presentation

IMMUNOGENICITY OF PNEUMOCOCCAL 7-VALENT CONJUGATE VACCINE (DIPHTHERIA CRM197 PROTEIN CONJUGATE; PREVENARTM) IN KOREAN INFANTS

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BACKGROUND AND AIMS: The object of this study was to evaluate the immunogenicity of the current 7-valent pneumococcal CRM197 conjugate vaccine (PCV7) in Korean infants. **METHODS:** Thirty three healthy infants aged 6-12 weeks were enrolled in the study. Infants were immunized with the PCV7 vaccine at 2, 4 and 6 months of age and blood samples were drawn before and 1 month after the primary immunization series. Also, serum was obtained from ten infants at age 7 months who were found not to have been immunized with the PCV7 vaccine. Antibody titers were evaluated with a 3rd generation ELISA at the Center for Vaccine Evaluation and Study, Ewha Medical Research Center. **RESULTS:** After the primary immunization series, geometric mean titers (GMT) ranged from 2.8 ug/mL for serotype 23F to 11.1 ug/mL for serotype 14. After the third dose, 97.0-100.0% of the subjects had an antibody concentration ≥ 0.35 ug/mL. In infants with no vaccination history of PCV7, the GMT ranged from 0.05 ug/mL for serotype 4 to 0.47 ug/mL for serotype 19F. The GMT in vaccinated infants were significantly higher compared with the non-vaccinated infants for all serotypes ($p < 0.05$). Among non-vaccinated infants, 10-40% of the subjects had an antibody concentration ≥ 0.35 ug/mL for serotypes 4, 6B, 9V, 14, 18C and 23F, whereas 70% of the infants had an antibody concentration ≥ 0.35 ug/mL for serotype 19F. **CONCLUSIONS:** The PCV7 shows good immunogenicity in Korean infants after a primary series. Further studies on the function of the antibodies elicited after the PCV7 vaccine will be needed.

Topic: Vaccines and prevention

Paper number: 1285

Presentation type requested: Oral Presentation

CONSTRUCTION OF GBS SURFACE PROTEINS- SIP, SCPB, LRRG AND THEIR FRAGMENTS AND EVALUATION OF THEIR IMMUNOGENICITY AND FUNCTION

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BACKGROUND AND AIMS: Vaccination is an effective strategy to prevent group B streptococcus infection. To develop a broadly protective vaccine, GBS surface proteins-Sip (surface immunogenic protein), ScpB (The streptococcal C5a peptidase), fragments of ScpB and LrrG (leucine-rich repeat protein) were prepared, their immunogenicity and function were further studied.
METHODS: Recombinant proteins and their fragments were expressed in E.coli strain BL21 and purified by affinity chromatography. Enzymatic activity of ScpB and fragments were tested by the cleavage of recombinant human complement C5a. Immune response was studied in mice. Antibody titer was tested by ELISA. Opsonophagocytosis experiment was used to test the function of antibody.
RESULTS: The fusion proteins- Sip, ScpB and its four fragments (F1, Fn, FE, F2a), three fragments (Gn, Gr, Gc) of LrrG were successfully expressed and purified. Enzymatic activity test revealed ScpB are enzymatic. ELISA data showed that Sip, ScpB, F1, Fn, FE, F2a, Gn, Gr, Gc could elicit significantly higher levels of IgG in immunized mice serum than that of control group ($P<0.001$). The titers of IgG in Gr and Gc groups were better than Gn group. FE and F2a induced a stronger immune response as compared to ScpB ($P<0.05$). Opsonophagocytosis tests indicated that anti-serum of all proteins and their fragments had opsonophagocytic activity than control ($P<0.01$). Anti-ScpB and anti-F2a serum worked better than anti-FE sera. Anti-Gr and Anti-Gc serum worked better than Anti-Gn sera ($P<0.05$).
CONCLUSIONS: Sip, F2a, Gr and Gc had higher immunogenicity and their anti-serum had better opsonic activity. They can be considered as GBS vaccine components for further study.

Topic: Vaccines and prevention

Paper number: 1289

Presentation type requested: Oral Presentation

AS01 AND AS02 ADJUVANTED RTS,S ANTI-MALARIA VACCINE CANDIDATES: SAFETY AND IMMUNOGENICITY IN CHILDREN IN GABON

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BACKGROUND AND AIMS: The RTS,S malaria vaccine candidate contains part of the *P. falciparum* circumsporozoite (CS) antigen with hepatitis B surface antigen (HBsAg) adjuvanted with Adjuvant Systems (AS) either as a liposomal formulation (AS01) or an oil-in-water emulsion (AS02). Both contain the immunostimulants MPL and QS21. In a study in Mozambican children, RTS,S/AS02 demonstrated efficacy against clinical (32%) and severe malaria (49%), over 18 months. Preclinical models showed that, of the two AS, the liposomal formulation is more immunogenic. Challenge studies in human adults also suggested higher efficacy against infection with the liposomal formulation. **METHODS:** In a randomized, double-blind trial, 180 Gabonese children aged 18 months-4 years received three doses of RTS,S with either AS01 or AS02 in 0,1,2-month schedule. Solicited and unsolicited symptoms were evaluated until 7 and 30-days post-vaccination, respectively, and SAE until 1-year post-dose3. Seropositivity rates and anti-CS and anti-HBsAg antibody GMTs were determined pre-/post-vaccination. **RESULTS:** No SAE was considered related to either RTS,S/AS01 (3) or RTS,S/AS02 (4) vaccination. There was no imbalance in adverse events between vaccines. Increased local reactogenicity was observed with subsequent vaccine doses. One month post-dose3, non inferiority of RTS,S/AS01 to RTS,S/AS02 in inducing anti-CS and anti-HBs antibodies was demonstrated. Both vaccines induced 100% anti-CS and anti-HBs responses. A trend towards better anti-CS responses with RTS,S/AS01, versus RTS,S/AS02, was found post-dose3 [anti-CS GMT: 207.3 (95%CI:172.0;249.9) and 183 (95%CI:150.6;222.5), respectively] and post-dose2. **CONCLUSIONS:** The equivalent and favorable safety profile of both study vaccines was established. Both formulations induced high anti-HBs and anti-CS antibody responses, with indications of better responses with RTS,S/AS01.

Topic: Vaccines and prevention

Paper number: 1297

Presentation type requested: Oral Presentation

A VERO CELL DERIVED, INACTIVATED JAPANESE ENCEPHALITIS (JE) VACCINE IC51 IN CLINICAL DEVELOPMENT FOR PEDIATRIC USE

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BACKGROUND AND AIMS: JE is the most common childhood viral encephalitis, with over 50,000 cases reported annually, with a case fatality rate up to 35% and long-term sequelae up to 75%. JE is highly endemic in tropical and subtropical countries in Asia. Preventive vaccination is the single most important control measure worldwide.

We report on the clinical development of IC51, a second-generation Al(OH)₃-adjuvanted vaccine based on the purified, inactivated JEV strain SA14-14-2.

The first clinical trial with the JE vaccine IC51 in children aimed to assess safety and immunogenicity of IC51 compared to JENCEVAC® in Bangalore, India. Subsequent pivotal safety and immunogenicity trials are planned in endemic countries, as well as bridging studies in non endemic USA/Europe. **METHODS:** In the open-label, randomized, controlled Phase 2 trial IC51 was administered to 48 children ≥1 to <3 years of age. Another group of 12 children received JENCEVAC®. Immune response was assessed by determination of PRNT₅₀ (Plaque Reduction Neutralization Test) titers after the vaccinations in comparison to baseline. SCR was defined by percentage of subjects with ≥1:10 anti-JEV antibody titer (PRNT). Solicited and unsolicited events were recorded for local and systemic tolerability. **RESULTS:** The Data Safety Monitoring Board evaluated safety data of 21 subjects having received at least one vaccination and assessed a favourable safety statement. No serious adverse events occurred during the entire trial period. Immunogenicity results are pending. **CONCLUSIONS:** Preliminary data indicate that the JEV vaccine IC51 was safely administered in children aged ≥1 to <3 years of age.

Topic: Vaccines and prevention

Paper number: 1311

Presentation type requested: Poster Presentation

VALIDATION OF MEASLES ANTIBODY DETERMINATION IN ORAL FLUID SAMPLES IN CHILDREN

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BACKGROUND AND AIMS: Level of protection provided by passively transmitted maternal antibodies to infants is decreasing since women with vaccine-induced immunity are present within fertile population, age of primigravidity is increasing, and boosting effect of circulating natural infections is rare. A prospective study aiming to evaluate the kinetics of maternal measles antibodies in two cohorts of naturally infected and vaccinated women and their infants is conducted. Efforts are made to avoid invasive methods when collecting specimens for seroepidemiological surveys. In this preliminary study, we validate the use of measuring specific antibodies against measles in saliva samples.

METHODS: Children older than 3 months of age, visiting our outpatient clinic and undergoing blood drawing were enrolled. Exclusion criteria included prematurity, known immunodeficiency, chronic disease, recent transfusions or administration of immunoglobulin. Oral fluid specimens were acquired from each patient, using Oracol swabs and extracted using transport medium. Remaining sera from routine laboratory evaluation were also collected. All specimens were stored at -30°C and paired serum and saliva samples from each patient were evaluated in duplicates using Measles IgG capture EIA (Microimmune).

RESULTS: Paired oral fluid and sera samples were evaluated in 110 children, 3 months to 8 years old. Discordance was found in three infants, 3.5-5.5 month old with low positive measles antibodies in serum and undetectable antibodies in saliva. Interestingly, only 1/12 infants 6-12 months old had detectable measles antibodies.

CONCLUSIONS: Oral fluid specimens can be used in infants older than 3 months of age for the detection of IgG measles antibodies.

Research funded by ESPID SmallGrant (2007).

Topic: Vaccines and prevention

Paper number: 1316

Presentation type requested: Oral Presentation

**SAFETY AND IMMUNOGENICITY OF CONCOMITANT 7-VALENT PNEUMOCOCCAL CONJUGATE VACCINE
AND MENINGOCOCCAL GROUP C CONJUGATE**

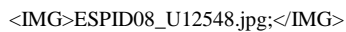
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BACKGROUND AND AIMS: This trial was carried out to compare 7-valent pneumococcal conjugate vaccine (PCV-7) and meningococcal conjugate vaccine (MCC) respectively with and without coadministration.

METHODS: In a randomized, open label study a total of 712 healthy infants were randomized to receive PCV-7 and MCC, PCV-7 or MCC alone in a 2, 3.5 and 6 month infant series.

RESULTS: The rates of systemic events were comparable in the 3 groups. There were no significant differences observed for local reactions between the 3 groups for tenderness, erythema, moderate or severe induration at either the PCV-7 or MCC vaccine sites after each dose. **CONCLUSIONS:** Concomitant administration of PCV-7 and MCC did not interfere with the immune response compared with that of either vaccine administered alone. There were no major differences observed between local reactions and systemic events between the 3 groups.



Topic: Vaccines and prevention

Paper number: 1317

Presentation type requested: Oral Presentation

**SURVEY OF MOTHERS ON HUMAN PAPILLOMAVIRUS AND DISEASES CAUSED IN 16 EUROPEAN COUNTRIES:
NEED FOR EDUCATIONAL PROGRAMMES**

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BACKGROUND AND AIMS: To assess what mothers of young girls know about human papillomavirus (HPV) and related diseases, and HPV vaccination. **METHODS:** An on-line questionnaire survey of mothers of 9-17 year old girls was undertaken in 16 European countries in June/July 2007. **RESULTS:** Most mothers (72%) were aware that cervical cancer was the second most frequent female cancer, but only 25% knew that a virus was the main cause; 40% thought there was a genetic disposition for cervical cancer. 40% said they did not know how HPV is transmitted. Only 10% knew that up to 80% of women will be exposed to HPV at some time in their life. About half the mothers (54%) said they knew that a HPV vaccine was available, but only 24% said their source of information was a health-care professional (the first and second sources were television and newspapers for 48% and 37%, respectively). Less than 30% said they had, or intended to, vaccinate their daughter and 67% said they had not decided if they would be vaccinated. In Germany and Austria, where healthcare professionals were cited by the mothers as their first or second source of information, mothers were the most aware of the availability of a HPV vaccine. **CONCLUSIONS:** Mothers of 9-17 year old girls need to be taught about causes of cervical cancer, HPV prevalence and the rationale for widespread HPV vaccination in pre-adolescents and adolescents. Health-care professionals would benefit from training to help them educate their patients.

Topic: Vaccines and prevention

Paper number: 1318

Presentation type requested: Oral Presentation

PROTECTION BY MEN C POLYSACCHARIDE SPECIFIC MEMORY B-CELLS

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BACKGROUND AND AIMS: Conjugate vaccines aim to overcome the T-cell independence of the immune response to polysaccharides through their conjugation to carrier proteins. The mechanisms by which the polysaccharide specific memory B-cells thus generated provide long term protection are poorly understood. In approaching this question, we have compared the kinetics and activation requirements of Men C polysaccharide (CPS) specific memory B-cells with those generated against the tetanus toxoid (TT) carrier protein. **METHODS:** Healthy adults (n=18), who had received a CPS conjugate vaccine previously, were boosted with a CPS-TT immunization. ELISpot assays were used, following polyclonal stimulation, to identify antigen specific memory B-cells. CD4+ T-cells were removed by magnetic cell sorting to examine their role in memory B-cell activation. **RESULTS:** Prior to boosting, TT although not CPS specific memory B-cells were found in the circulation in the majority of individuals. In both cases memory B-cell numbers increased following vaccination, returning towards baseline by six weeks. Non-antigen specific 'bystander' CD4+ T-cell activation promoted the differentiation of both populations but this was less effective than cognate T-cell help available to the TT specific memory B-cells. Whole bacteria promoted the differentiation of memory B-cells through both T-cell dependent and independent mechanisms **CONCLUSIONS:** CPS specific memory B-cells generated by conjugate vaccination are less well maintained than those generated against tetanus toxoid. This may reflect the lack of antigen specific T-cell help available to maintain the former population or differences in the responding B-cell populations not overcome by conjugation. This may have implications for the long term efficacy of these vaccines.

Topic: Vaccines and prevention

Paper number: 1319

Presentation type requested: Oral Presentation

COST-EFFECTIVENESS OF CERVICAL CANCER VACCINATION IN GERMANY

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BACKGROUND AND AIMS: We estimated the incremental cost-effectiveness ratio (ICER) for vaccinating females with CervarixTM (GlaxoSmithKline Biologicals) in Germany in addition to the existing screening programme. **METHODS:** A Markov model based upon the natural history of HPV and cervical cancer (CC) was employed. Health states included: Normal, HPV infected, Cervical Intraepithelial Neoplasia (CIN), CC stages 1 to 4, death. The model was calibrated for Germany-specific epidemiological data: age-specific HPV prevalence, HPV type distribution in cervical disease, prevalence of pre-cancerous lesions, and age-specific CC incidence and mortality. Published efficacy rates were applied for CervarixTM including a potential cross-protection benefit (i.e., additional efficacy against oncogenic HPV-types 31 and 45). Future costs and QALYs (quality adjusted life years) were discounted at 4% and 1.5%, respectively, using 2006 as the reference year. The societal and healthcare payer perspectives were investigated. Vaccination of females aged 12-years was simulated in the base-case and vaccination up to 35-years was analysed in sensitivity analyses. **RESULTS:** The ICER for vaccination of 12-year old girls was estimated to be €14,685 and €15,521 per QALY from societal and healthcare payer perspectives respectively. Although extending the vaccination programme led to higher ICERs, vaccination up to 35-years resulted in an ICER approaching €30,000 per QALY, from both perspectives. Sensitivity analysis showed that our results were most sensitive to assumptions about discount rates and duration of protection. **CONCLUSIONS:** Adding vaccination with CervarixTM to the current screening in Germany is predicted to be cost-effective for females up to the age of 35-years, relative to international cost-effectiveness thresholds.

Topic: Vaccines and prevention

Paper number: 1320

Presentation type requested: Poster Presentation

IMMUNOLOGICAL PERSISTENCE IN 4-6 AND 7-9 YEAR OLDS PREVIOUSLY VACCINATED IN INFANCY WITH HEXAVALENT DTPA-HBV-IPV/HIB

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BACKGROUND AND AIMS: DTPa-HBV-IPV/Hib vaccine (Infanrix hexa™) has been widely used since 2000 and induces high immune responses, which persist to pre-school age.¹ Two studies were undertaken to assess antibody persistence in children aged 4-6 and 7-9 years, who had been previously vaccinated with 4 doses of DTPa-HBV-IPV/Hib vaccine in infancy.
METHODS: Two open-label studies were undertaken involving children aged 4-6 years (106745) and 7-9 years (106744). Blood samples were collected and antibodies measured using standard assays and cut-offs.
RESULTS: 203 subjects aged 4-6 years and 200 subjects aged 7-9 years were included, of whom 193 and 198 were included in the ATP cohort for persistence, respectively. The seroprotection and seropositivity rates for both age groups are shown below:

CONCLUSIONS: With the exception of pertussis toxin, primary and booster vaccination with Infanrix hexa™ induces sustained seroprotection against the antigen components in children aged up to 9 years.

¹Heininger et al. Vaccine 2007;25:1055-63.

Topic: Vaccines and prevention

Paper number: 1321

Presentation type requested: Oral Presentation

ANTIBODY PERSISTENCE IN UK PRESCHOOL CHILDREN WHO RECEIVED A PRIMARY SERIES OF PEDIACEL® OR DTWP//HIB+OPV, AND SUBSEQUENT REPEVAX® BOOSTER RESPONSE

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BACKGROUND AND AIMS: Describe antibody persistence to diphtheria, tetanus, pertussis, poliovirus types 1, 2 and 3, Haemophilus influenzae type b (Hib/PRP) and Neisseria meningitidis group C (Men C), and booster responses to Td5aP-IPV (Repevax®) at age 3.5–4.5 years. **METHODS:** Infants received DT5aP-IPV-Hib (PediaceL®; N=81) or DTWP//Hib+OPV (N=77) with Men C vaccine (conjugated to CRM197 or tetanus toxoid) at 2, 3, 4 months, PRP-T Hib booster around 15 months and Repevax at 3.5–4.5 years. **RESULTS:** Before Repevax booster, comparable seroprotection rates were maintained for both groups, except for anti-poliovirus 2 titre, which was higher in DTWP//Hib+OPV recipients. Of children administered PediaceL, >89% and >98%, respectively, had diphtheria and tetanus titres ≥ 0.01 IU/mL, >85% had anti-poliovirus titres $\geq 1:8$ against all three serotypes, and 100% had anti-PRP titres ≥ 0.15 g/mL. However, <15% maintained anti-Men C titres $\geq 1:8$ in both groups. One month after Repevax booster, 95.2% and 100% of PediaceL and DTWP//Hib+OPV recipients, respectively, had anti-diphtheria titres ≥ 0.1 IU/mL. All children had anti-tetanus titres ≥ 0.1 IU/mL and $\geq 98.5\%$ had anti-poliovirus titres $\geq 1:8$. GMTs for all acellular pertussis components increased in both groups. In both groups, both pre- and post-booster, the diphtheria response was significantly enhanced in those receiving Men C-CRM197, as was the tetanus response in those receiving Men C-TT. **CONCLUSIONS:** In both groups, the vaccination schedule studied provided sustained immunity until 3.5–4.5 years for all antigens except Men C. Repevax induced robust booster responses. Primary vaccination with PediaceL, followed by boosters of PRP-T Hib and Repevax, induces antibody levels indicative of protection against targeted diseases.

Topic: Vaccines and prevention

Paper number: 1324

Presentation type requested: Poster Presentation

IMMUNE MEMORY AGAINST HEPATITIS B PERSISTS IN 4-6 YEAR OLDS PREVIOUSLY VACCINATED WITH 4 DOSES OF HEXAVALENT DTPA-HBV-IPV/HIB VACCINE

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BACKGROUND AND AIMS: Hexavalent DTPa-HBV-IPV/Hib vaccine (Infanrix hexa™) induces seroprotective antibody levels (≥ 10 mIU/ml) against hepatitis B in over 95% subjects, which persists in up to 91% of subjects at 4-6 years of age. This study evaluated long-term immune memory towards HBV and response to a HBV challenge in children aged 4-6 years who had been previously vaccinated with 4 doses of DTPa-HBV-IPV/Hib vaccine in infancy. **METHODS:** Open-label study [106745] conducted at 37 centres in Germany. All subjects received a single challenge dose of monovalent HBV vaccine (Engerix™-B; GSK Biologicals). Blood samples were collected before and one month after vaccination. Anti-HBs antibodies were measured using ELISA; a cut-off ≥ 10 mIU/ml was considered seroprotective. **RESULTS:** A total of 203 subjects were enrolled and vaccinated in the study, of whom 198 and 188 were included in the ATP cohorts for persistence and immunogenicity, respectively. Prior to challenge, 86.4% of subjects maintained anti-HBs antibodies ≥ 10 mIU/ml and 53.5% had concentrations ≥ 100 mIU/ml. After the HBV challenge, the percentage of seroprotected subjects rose to 98.4%. The anti-HBs antibody GMC rose from 104.8 to 7981.4 post-vaccination.

The HBV challenge vaccine was well tolerated; 27.1% and 46.8% subjects recorded general or local symptoms, respectively during the 4 days after vaccination, of which only 1.5% were described as grade 3.

CONCLUSIONS: Primary and booster vaccination with Infanrix hexa™ induces sustained seroprotection against hepatitis B in children aged 4-6 years. A strong response to HBV challenge was demonstrated, indicative of immune memory.

Heininger et al. Vaccine 2007;25: 1055-63.

Topic: Vaccines and prevention

Paper number: 1327

Presentation type requested: Poster Presentation

MF59 ADJUVANTED INFLUENZA VACCINE (FLUAD®): SUSTAINED IMMUNOGENICITY OVER INFLUENZA EPIDEMIC SEASON IN UNPRIMED HEALTHY CHILDREN

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BACKGROUND AND AIMS: Currently available influenza vaccines have shown limited efficacy in young children. We investigated the safety and immunogenicity of MF59™ adjuvanted subunit vaccine (Sub/MF59) (FLUAD®, Novartis Vaccines) in comparison with a conventional split vaccine (Vaxigrip®, sanofi pasteur) in unprimed children (Vesikari et al, submitted). We now report the results of an extended follow-up for 6 months. **METHODS:** 269 healthy children aged 6 to <36 months were randomized to receive two IM doses of Sub/MF59 or split vaccine before the 2006/07 winter season. Immunogenicity was evaluated by a HI assay after each dose and at the end of six months' follow-up. Seroprotection was defined as HI titer of 40 or higher. **RESULTS:** Both vaccines were safe, and no excess of adverse events were reported for the Sub/MF59 group over the 6 month's follow-up. For both vaccines, the immune responses were strongest for A/H3N2, followed by A/H1N1 and B. Overall, Sub/MF59 induced significantly higher seroprotection (SP) rates and GMTs than the split vaccine. All titers declined over the next six months, but remained consistently higher in the recipients of MF59™ adjuvanted vaccine. After six months SP rates were 100% and 66% (p<0.001) for H3N2, 48% and 20% (p<0.001) for H1N1, and 22% and 3% (p<0.001) for B strains, for the two vaccines respectively. **CONCLUSIONS:** In naïve children MF59™ adjuvanted influenza vaccine was safe and induced significantly higher immune responses than a conventional vaccine. The difference between the two vaccines was sustained for 6 months, over an influenza epidemic season.

Topic: Vaccines and prevention

Paper number: 1329

Presentation type requested: Poster Presentation

FOLLOW-UP OF A MMR VACCINATION PROTOCOL FOR CHILDREN ALLERGIC TO EGG IN MADRID (SPAIN)

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BACKGROUND AND AIMS: Traditionally, egg allergy has been considered a contraindication for the administration of MMR vaccine because the measles, mumps and rubella vaccine is grown in chicken embryo fibroblast tissue culture. It may contain trace quantities of egg albumin, but the amount is so small that it does not reach the threshold necessary to cause hypersensitivity reactions in children allergic to eggs. Besides, since February 2004 there are not available MMR vaccines free of egg protein in Spain, and about 2,000 doses of measles and rubella (MR) vaccines are administered every year.

In order to ensure that all children diagnosed with egg allergy receive two doses of vaccine containing measles, mumps and rubella antigens, a protocol was introduced in all vaccination centres of Madrid stipulating that only children with a history of anaphylactic reaction to egg ingestion should be vaccinated in a Hospital Paediatric service.

To assess whether only children who met protocol requirements were referred to hospitals for vaccination, and to assess safety of MMR immunization in children allergic to egg.
METHODS: Descriptive study in 13 accredited Hospital Paediatric services.
RESULTS: The number of vaccinated children was very different in the 13 accredited Hospital Paediatric services, ranging from 0 to 99 children. From May to November 2007, 265 children were vaccinated. Only 35 children had history of anaphylaxis after egg ingestion. 23 brought a medical report.
CONCLUSIONS: None of the children developed adverse reactions after vaccination. Only 13% of children were referred to hospital for vaccination according to protocol.

Topic: Vaccines and prevention

Paper number: 1331

Presentation type requested: Poster Presentation

IMMUNE MEMORY AGAINST HEPATITIS B PERSISTS IN 7-9 YEAR OLDS PREVIOUSLY VACCINATED WITH 4 DOSES OF HEXAVALENT DTPA-HBV-IPV/HIB VACCINE

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BACKGROUND AND AIMS: Hexavalent DTPa-HBV-IPV/Hib vaccine (Infanrix hexa™) induces comparable seroprotective antibody levels against hepatitis B as monovalent hepatitis B vaccines. This study evaluated long-term immune memory towards HBV in children aged 7-9 years who had been previously vaccinated with DTPa-HBV-IPV/Hib vaccine. **METHODS:** Open-label study [106744] conducted in 42 centres in Germany, enrolling children aged 7-9 years previously vaccinated with 4 doses of DTPa-HBV-IPV/Hib vaccine in clinical trials. The study also attempted to enrol children primed with monovalent HBV vaccine (Engerix™-B) in the same trials. All subjects received a single challenge dose of monovalent paediatric HBV vaccine (Engerix™-B; GSK Biologicals). Blood samples were collected before and one month after vaccination. Anti-HBs antibodies were measured using ELISA; a cut-off ≥ 10 mIU/ml was considered seroprotective. **RESULTS:** A total of 224 subjects were enrolled and vaccinated in the study, among whom $\geq 95\%$ were DTPa-HBV-IPV/Hib vaccinees. In this cohort, 193 and 187 subjects were included in the ATP cohorts for persistence and immunogenicity, respectively. Prior to challenge, 77.2% DTPa-HBV-IPV/Hib vaccinees maintained anti-HBs antibodies ≥ 10 mIU/ml, increasing to 98.4% after HBV challenge. Subjects with anti-HBs antibodies ≥ 100 mIU/ml increased from 33.9% to 93.6% post-vaccination and anti-HBs antibody GMC rose from 41.5 to 4093.9 mIU/ml. Of 41 initially seronegative subjects, all but 3 achieved seroprotective anti-HBs levels after vaccination.

The HBV challenge vaccine was well tolerated.

CONCLUSIONS: Primary and booster vaccination with Infanrix hexa™ induces sustained seroprotection against hepatitis B, which was seen up to 6.5 years after the last vaccine dose. A strong response to HBV challenge was demonstrated, indicative of immune memory.

Topic: Vaccines and prevention

Paper number: 1351

Presentation type requested: Oral Presentation

NASOPHARYNGEAL (NP) CARRIAGE OF S. PNEUMONIAE: SEROTYPE REPLACEMENT AMONG CHILDREN WITH ACUTE OTITIS MEDIA (AOM) ACCORDING TO DAY CARE ATTENDANCE

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<pre>BACKGROUND AND AIMS:</pre>After implementation of 7 valent pneumococcal conjugate vaccine, serotype replacement in pneumococcal NP carriage has been consistently evidenced. However, replacement in invasive pneumococcal disease varied with geographical locations and populations. The aim of this study is to compare the serotype distribution in NP carriage according to day attendance among a French cohort of children with AOM.<pre>METHODS:</pre>Between 2001 and 2007 more than 700 NP swabs were obtained each year, from 6 to 24 months children with AOM. For each patient, demographic characteristics, antibiotics use, immunization status and day attendance were recorded. <pre>RESULTS:</pre>In 2001-3, 13.3% of children were immunized, in 2005-7 more than 90%. <pre>CONCLUSIONS:</pre>DCC attendance increases the magnitude of serotype replacement mainly due to the increasing rate of children carrying 19A.

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Topic: Vaccines and prevention

Paper number: 1358

Presentation type requested: Oral Presentation

MENACWY-CRM, A NOVEL QUADRIVALENT MENINGOCOCCAL CONJUGATE VACCINE, IS WELL TOLERATED AND IMMUNOGENIC IN INFANCY THROUGH TO ADOLESCENCE

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BACKGROUND AND AIMS: Meningococcal disease affects all age-groups, particularly infants and adolescents, with devastating effects. Epidemiology is variable both geographically and temporally. Currently no vaccine adequately protects all vulnerable age-groups against serogroups A, C, W-135, and Y. For the first time, overall results of Phase II studies of a new glycoconjugate vaccine (MenACWY-CRM) against serogroups A, C, W-135, and Y are presented. **METHODS:** Tolerability and immunogenicity of MenACWY-CRM was investigated in individuals 2-months to 17-years-of-age (n=2190) in 4 studies. The serologic marker of protection was an hSBA titer $\geq 1:4$, performed using exogenous human complement. **RESULTS:** MenACWY-CRM was well tolerated in all age-groups; adverse events were similar to controls and typically limited to local injection-site reactions and mild fever.

Infants (2-12-month-olds): MenACWY-CRM was immunogenic as two- or three-doses (hSBA $\geq 1:4$, 50-99%, all serogroups) and following a booster dose at 12-months-of-age (hSBA $\geq 1:4$, 92-100%, all serogroups).

Toddlers (1-2-year-olds): One dose of MenACWY-CRM was immunogenic given alone or concomitantly with Prevnar or DTaP (1 month post-vaccination hSBA $\geq 1:4$; 53-96%, all serogroups).

Children (2-10-year-olds): One dose of MenACWY-CRM was significantly more immunogenic than a licensed polysaccharide vaccine (MPSV4) (hSBA $\geq 1:4$, 1 month: 82-95% vs 45-70%), with good persistence (hSBA $\geq 1:4$, 12 months: 28-93% vs 19-53%).

Adolescents (11-17-year-olds): Versus MPSV4, significantly more MenACWY-CRM subjects achieved hSBA $\geq 1:4$ following primary vaccination and showed good antibody persistence for serogroups C, W-135, and Y (12 months; 63-72%, 86-95%, respectively). **CONCLUSIONS:** MenACWY-CRM is well tolerated, immunogenic, and the first single vaccine formulation to provide broad protection for all vulnerable age-groups against serogroups A, C, W-135, and Y.

Topic: Vaccines and prevention

Paper number: 1360

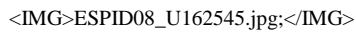
Presentation type requested: Oral Presentation

NASOPHARYNGEAL (NP) CARRIAGE OF S. PNEUMONIAE: SEROTYPE REPLACEMENT AMONG CHILDREN WITH ACUTE OTITIS MEDIA (AOM) ACCORDING TO DAY CARE ATTENDANCE

R. Cohen¹, C. Levy², E. Bonnet³, J. Bougle⁴, F. De La Rocque², B. Fritzell³, E. Varon⁵

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BACKGROUND AND AIMS: After implementation of 7 valent pneumococcal conjugate vaccine, serotype replacement in pneumococcal NP carriage has been consistently evidenced. However, replacement in invasive pneumococcal disease varied with geographical locations and populations. The aim of this study is to compare the serotype distribution in NP carriage according to day attendance among a French cohort of children with AOM. **METHODS:** Between 2001 and 2007 more than 700 NP swabs were obtained each year, from 6 to 24 months children with AOM. For each patient, demographic characteristics, antibiotics use, immunization status and day attendance were recorded. **RESULTS:** In 2001-3, 13.3% of children were immunized, in 2005-7 more than 90%. **CONCLUSIONS:** DCC attendance increases the magnitude of serotype replacement mainly due to the increasing rate of children carrying 19A.



Topic: Vaccines and prevention

Paper number: 1368

Presentation type requested: Oral Presentation

IMMUNOGENICITY AND SAFETY OF MENACWY-CRM, A NOVEL QUADRIVALENT MENINGOCOCCAL CONJUGATE VACCINE, ADMINISTERED CONCOMITANTLY WITH TDAP IN HEALTHY SUBJECTS 11-25 YEARS-OF-AGE

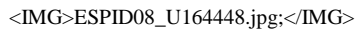
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BACKGROUND AND AIMS: Meningococcal disease has a high incidence in adolescents; broad protection against this disease is important. This study investigated the safety and immunogenicity of a quadrivalent meningococcal conjugate vaccine (MenACWY-CRM), against meningococcal serogroups A, C, W-135, and Y, when administered concomitantly with Tdap. **METHODS:** Subjects (n=1072), 11-25 years-of-age, were randomized to receive either Tdap (Boostrix™, GSK) and MenACWY-CRM (Novartis Vaccines), Tdap with saline placebo (SP), or MenACWY-CRM and SP. Serologic evaluation was carried out at Days 1 and 29. Non-inferiority was based on group differences in vaccine response rates (lower limit [LL] of 95%CI ≥ -10%). **RESULTS:** No significant increase in reactogenicity or any clinically significant vaccine-related adverse events occurred when MenACWY-CRM and Tdap were administered concomitantly.

Similar responses to diphtheria, tetanus, meningococcal serogroups A, C, W-135, and Y were observed regardless of concomitant vaccine administration (Table 1). For pertussis antigen comparisons, non-inferiority was achieved only for filamentous hemagglutinin (FHA) (4-fold increase LL 95%CI -9%). Anti-pertussis antibody responses were robust for pertussis toxin, FHA, and pertactin when the vaccines were given concomitantly (Table 1).

CONCLUSIONS: Robust immune responses to Tdap and MenACWY-CRM were observed regardless of whether the vaccines were administered concomitantly or alone.



Topic: Vaccines and prevention

Paper number: 1369

Presentation type requested: Oral Presentation

ANTIBODY PERSISTENCE AND VARICELLA BREAKTHROUGH CASE ASSESSMENT THREE YEARS AFTER ADMINISTRATION OF MEASLES-MUMPS-RUBELLA-VARICELLA (MMRV) VACCINE IN CHILDREN AGED 11-23 MONTHS

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BACKGROUND AND AIMS: Two doses of varicella-containing vaccine in healthy children <12 years are suggested to induce better protection. Persistence of immunity and varicella breakthrough cases were assessed three years after MMRV vaccination or concomitant MMR (Priorix™) and varicella (Varilrix™) vaccination. **METHODS:** 494 healthy children, 11-23 months old at first dose, received either two doses of a tetravalent MMRV vaccine (GlaxoSmithKline Biologicals) 42-56 days apart (MMRV, N=371) or one dose of MMR and varicella vaccines followed by another MMR vaccination 42-56 days later (MMR+V, N=123). 304 subjects participated in the three-year follow-up (MMRV: N=225, MMR+V: N=79). Antibodies were measured by ELISA (measles, mumps, rubella) and immunofluorescence (varicella). Occurrence of contacts with varicella or zoster and/or breakthrough varicella disease was recorded. **RESULTS:** Three years post-vaccination (total vaccinated cohort year3, N=304), seropositivity rates in subjects seronegative before vaccination were: MMRV - measles: 99.0% (geometric mean titer [GMT]=3684.3), mumps: 97.4% (GMT=1754.5), rubella: 100% (GMT=51.9), varicella: 99.4% (GMT=225.5); MMR+V - measles: 97.0% (GMT=1818.8), mumps: 93.8% (GMT=1454.6), rubella: 100% (GMT=53.8), varicella: 96.8% (GMT=105.8). The incidence of reported contacts with varicella/zoster was 93/225=41.3% for MMRV and 30/79=38.0% for MMR+V. Over the three-year follow-up (total vaccinated cohort, N=494), two mild varicella breakthrough cases were reported for MMRV and, for MMR+V, four mild and one moderate cases. **CONCLUSIONS:** Antibody persistence demonstrates that this combined MMRV vaccine is still highly immunogenic three years post-vaccination. Furthermore, the data support evidence that two doses of varicella vaccine have the potential to induce a more pronounced varicella-specific immune response compared to one dose. (208136/041/NCT00406211)

Topic: Vaccines and prevention

Paper number: 1371

Presentation type requested: Oral Presentation

ROUTINE VACCINATION OF HEALTHY CHILDREN AGAINST INFLUENZA DURING INTER-PANDEMIC PERIODS: THE PUBLIC VERSUS THE PATIENT PERSPECTIVE

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BACKGROUND AND AIMS: Universal routine vaccination of children is expected to reduce influenza-related morbidity and mortality in a community. Here, the individual's viewpoint is taken instead, and conditions under which vaccination may not be medically advisable for a healthy child are studied. **METHODS:** Influenza-illness related complications (IRC) and vaccination-related adverse events (VAE) may be mild/moderate or serious/severe. A decision-tree model displays the possible combinations of successive and alternative events and the probabilities of transitions in terms of individual risks or chances, in a standard way. Most likely estimates from the literature apply to inactivated influenza virus vaccines. Health risks with and without vaccination are then compared at an individual level. **RESULTS:** With an inter-pandemic attack rate of 0.16 and risks of 0.418 and 0.021 for mild events of IRC and VAE, respectively, vaccine effectiveness must exceed 0.31 for individual health benefit of a 6 to 23 months old child. A similar value is obtained for the severe events as only a risk ratio emanates as the determining factor in relation to the seasonal attack rate. **CONCLUSIONS:** Vaccine effectiveness needs more precise estimates to avoid exposing a healthy child to higher health risks with vaccination than without it when attack rates are low.

Topic: Vaccines and prevention

Paper number: 1372

Presentation type requested: Poster Presentation

IMMUNOGENICITY OF A COMBINED HAEMOPHILUS INFLUENZAE TYPE B AND NEISSERIA MENINGITIDIS SEROGROUP C-TETANUS TOXOID VACCINE(HIB-MENC-TT) FOLLOWING A 3,5,11 MONTH SCHEDULE

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BACKGROUND AND AIMS: A combined Haemophilus influenzae type b and serogroup C Neisseria meningitidis-tetanus toxoid glycoconjugate vaccine (Hib-MenC-TT, Menitorix™), available for use as 3-dose primary and as booster vaccination, is now given routinely as booster in UK toddlers. Its immunogenicity when used as 2-dose primary vaccination with booster was evaluated for the first time (106388&106390/NCT00327184). **METHODS:** Open randomised (1:1) trial in 690 infants, vaccinated with Hib-MenC-TT and DTPa-HBV-IPV (Infanrix penta™) or MenC-TT vaccine (NeisVac-C™) and DTPa-HBV-IPV/Hib (Infanrix hexa™). Serum analysed one-month post-dose2 (PD2), pre-booster (pre-B) and one month post-booster (post-B) for serum bactericidal activity using rabbit complement (rSBA-MenC) and anti-polyribosylribitol phosphate (anti-PRP) antibodies. Serious adverse events (SAEs) were recorded. **RESULTS:** Hib: PD2, 96.7% Hib-MenC-TT_group and 95.7% MenC-TT_group had anti-PRP concentrations $\geq 0.15 \mu\text{g/ml}$ (seroprotection), with GMC statistically higher after Hib-MenC-TT (4.22 versus $2.51 \mu\text{g/ml}$). Pre-B, $\geq 86.1\%$ were still seroprotected. Post-B, 99.4% had anti-PRP concentration $\geq 1.0 \mu\text{g/ml}$ in both groups with higher GMC after Hib-MenC-TT (30.49 versus $17.41 \mu\text{g/ml}$).

MenC: PD2, 99.1% Hib-MenC-TT_group and 100% MenC-TT_group had rSBA-MenC titres $\geq 1:8$ (seroprotection), with GMT statistically lower after Hib-MenC-TT (472.9 versus 1368.8). Pre-B, at least 94.5% had persistent rSBA titre $\geq 1:8$. Post-B, both groups mounted a 15-fold increase in SBA titres with 98.1% and 100% of infants having rSBA titre $\geq 1:128$, respectively.

No SAE related to vaccination was reported.

CONCLUSIONS: After two primary doses at 3, 5 months, the Hib-MenC-TT vaccine induced seroprotective antibodies against Hib and MenC non-inferior to controls, with good persistence up to the booster at 11 months. The booster led to a robust immune response to both antigens.

Topic: Vaccines and prevention

Paper number: 1376

Presentation type requested: Oral Presentation

LONG-TERM PERSISTENCE OF DETECTABLE ANTI-HPV-16 AND ANTI-HPV-18 ANTIBODIES INDUCED BY CERVARIX™: MODELLING OF SUSTAINED ANTIBODY RESPONSES

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BACKGROUND AND AIMS: Sustained and strong HPV-16 and 18 antibody responses up to 5.5 years have been demonstrated in women 15-25 years vaccinated with Cervarix™. With these data, our objective was to apply a model to predict the persistence of anti-HPV-16/18 antibodies. **METHODS:** To estimate the long-term persistence of anti-HPV-16/18 antibodies in 393 women vaccinated with Cervarix™, we applied two previously published power-law and modified power-law models (Fraser 2007). The latter model takes into account antibody kinetics over time and immune memory. Second, we used a piecewise model that fits the data based on three different non-overlapping intervals: between months 7 and 12; months 12 and 21 and over 21 months; each piece of the model used a linear function. **RESULTS:** HPV-16 and 18 antigens peaked at month 7 and gradually reached a stable plateau between month 18 and 24 that was sustained through 5.5 years. Antibody levels at the last timepoint were at least 11 times higher than those associated with natural infection. Individual antibody levels at each timepoint through 58 months were input to the three models. All three models predicted that HPV-16 and 18 antibody levels will remain several fold higher than those associated with natural infection for at least 20 years. **CONCLUSIONS:** Previously, GSK's cervical cancer vaccine adjuvanted with AS04 induced a stronger and sustained immune response compared to the same vaccine adjuvanted with aluminum hydroxide alone. Based on mathematical modelling, vaccination with Cervarix™ is predicted to provide sustained longevity for both HPV-16 and HPV-18 antibodies.

Topic: Vaccines and prevention

Paper number: 1379

Presentation type requested: Oral Presentation

DIMINISHED HUMORAL AND CELLULAR IMMUNITY AGAINST VARICELLA-ZOSTER-VIRUS IN PEDIATRIC ORGAN TRANSPLANT RECIPIENTS AFTER VACCINATION

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BACKGROUND AND AIMS: Varicella-zoster-virus (VZV) vaccination prior to transplantation was thought to provide protection against unrecognized exposures in immunocompromised patients. However, protection against VZV infection after vaccination is the summary of humoral (IgG antibody levels, avidity) and cellular immunity (VZV-specific T-cells). Therefore, the study was designed in order to answer the question whether immunosuppressed patients such as solid organ transplant recipients show alterations of humoral or cellular immunity against VZV. **METHODS:** IgG antibody levels and avidity were measured by ELISA and urea treatment. VZV-specific IFN-gamma-producing T-cells (% of CD4+) were detected by ELISPOT analysis after stimulation by VZV antigen in vitro. **RESULTS:** Median IgG antibody levels were 800 U/ml for 36 wild-virus infected controls (IC), 810 U/ml for 14 vaccinated controls (VC) and 630 U/ml for 28 vaccinated transplant recipients (TR). Median relative avidity index (RAI) was 89% for IC, 94% for VC and 82% for TR (p=0.01 compared to IC, p=0.002 compared to VC). TR (n=15) showed relatively low percentages of VZV-specific T-cells (0.03%) compared to 16 IC (0.44%) (p=0.02). **CONCLUSIONS:** The study suggests that antibody levels alone are insufficient to reflect humoral immunity against VZV reinfection. Although offering a new aspect of evaluating humoral immunity against VZV, the measurement of VZV IgG avidity may serve as only a substitute marker. Cellular immunity may play a crucial role in protection against VZV and may be diminished in immunosuppressed patients. This may be of particular importance in the clinical setting of exposure to VZV in immunosuppressed patients regarding clinical relevant reinfection and varicella-caused complications.

Topic: Vaccines and prevention

Paper number: 1380

Presentation type requested: Oral Presentation

**LONDON MMR VACCINATION CATCH-UP CAMPAIGN IN ONE PRIMARY CARE TRUST, WINTER 2004/5:
CHARACTERISTICS OF NON-RESPONDENTS AND NON-CONSENTERS**

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BACKGROUND AND AIMS: In response to low MMR vaccination coverage and reappearance of measles outbreaks, a London-wide MMR vaccination catch-up campaign was carried out by primary care trusts (PCTs) in winter 2004/2005, with support from the Health Protection Agency (HPA). Most PCTs carried out school-based campaigns aimed at 4-10 year olds. In one London PCT, vaccination status prior to the campaign could be linked to campaign vaccination consent data. This provided a unique opportunity to describe non-respondents to the campaign and non-consenters to vaccination. **METHODS:** Demographic data, pre-campaign MMR vaccination status and consent data were linked by individual and analysed as cross-sectional data using a hierarchical Poisson regression model. **RESULTS:** Multivariable analyses showed non-respondents to the campaign were more likely to be resident in more deprived areas (RR : 1.20 ; CI : 1.12 -1.27) and have incomplete MMR vaccination status (RR : 1.34 ; CI : 1.28 – 1.41). School size and age of child showed no association with response. Among parents with children eligible for vaccination, those who refused vaccination were more likely to live in less deprived areas (RR : 0.59 ; CI : 0.47 – 0.74) and have a younger child. **CONCLUSIONS:** Results show that non-respondents and non-consenters are from different populations. When planning an MMR catch-up vaccination campaign two very different susceptible populations need to be taken into account. This study is unique as it provides an overview of parents not-consenting to MMR vaccination, as well as the “hard to reach” population, who did not respond to the campaign at all.

Topic: Vaccines and prevention

Paper number: 1389

Presentation type requested: Oral Presentation

SAFETY AND IMMUNOGENICITY OF NOVARTIS MENINGOCOCCAL SEROGROUP B VACCINE AFTER THREE DOSES ADMINISTERED IN INFANCY.

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BACKGROUND AND AIMS: Endemic disease caused by serogroup B meningococci is generally not caused by a single clone but by a number of hyperinvasive lineages, driving the search for conserved surface structures as vaccine candidates. One approach has been to combine recombinant surface proteins (rMenB), identified from the meningococcal genome. Early studies demonstrated good safety and immunogenicity. The objective of this study was to determine safety and immunogenicity in infants. **METHODS:** Safety and immunogenicity of the rMenB vaccine was assessed in a 2, 4 and 6 months schedule. The immunogenicity was measured by serum bactericidal assay using human complement (hSBA). **RESULTS:** The trial demonstrated satisfactory safety, tolerability and immunogenicity. Local and systemic reactions of the vaccine candidate were similar in frequency and intensity to routine infant immunisations with the exception of fever, which was reported more frequently in the rMenB arm. A moderate, short-lasting temperature rise not exceeding 39.0°C following the first dose was reported more frequently in the rMenB arm than in the control. Preliminary analysis shows 100% (44/76-SL, ST32), 63% (5/99, ST8) and 85% (NZ98/274, ST41/44) hSBA \geq 1:4 post 3rd dose against three serogroup B strains representing the major vaccine antigens. The majority of disease causing strains worldwide express at least one of rMenB antigens. The results of a booster dose at 12 months will also be presented. **CONCLUSIONS:** rMenB vaccine is well tolerated and immunogenic against a panel of serogroup B strains in young infants when administered in a three dose schedule two months apart. This vaccine is entering phase 3 clinical trials.

Topic: Vaccines and prevention

Paper number: 1393

Presentation type requested: Poster Presentation

IMMUNOGENICITY AND SAFETY OF A MEASLES-MUMPS-RUBELLA-VARICELLA (MMRV) VACCINE CO-ADMINISTERED WITH PEDIATRIC VACCINES IN CHILDREN AGED 11-14 MONTHS

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BACKGROUND AND AIMS: The first dose of the MMRV vaccine is typically administered during the second year of life and could thus be co-administered with routine childhood vaccines. **METHODS:** 325 children aged 11-14 months at first dose were randomized to receive the following vaccines: 1/ MMRV (Priorix-Tetra™) and DTPa-HBV-IPV/Hib (Infanrix hexa™) followed six weeks later by MMRV (Priorix-Tetra™) and pneumococcal non-typeable Haemophilus influenzae Protein D-conjugate vaccine (PHiD-CV, GlaxoSmithKline Biologicals) (Group1, N=101), 2/ MMRV (Priorix-Tetra™) and PHiD-CV followed six weeks later by MMRV (Priorix-Tetra™) and DTPa-HBV-IPV/Hib (Infanrix hexa™) (Group2, N=110) or 3/ DTPa-HBV-IPV/Hib (Infanrix hexa™) and PHiD-CV (Group3, N=114). Immunogenicity of MMRV components was assessed by ELISA (MMR) and immunofluorescence (V). Solicited local/general, unsolicited symptoms and SAEs were recorded. **RESULTS:** Seroconversion rates and GMCs 42-56 days post-vaccination for measles, mumps, rubella, varicella were: Group1_post-dose1: 97.7%[GMC=2836.9], 89.8%[801.0], 97.7%[33.0], 97.6%[114.2]; post-dose2: 100%[4331.6], 100%[1411.2], 100%[85.9], 100%[1599.8]; Group2_post-dose1: 98.0%[3740.2], 90.2%[810.8], 100%[39.5], 100%[128.0]; post-dose2: 99%[4792.3], 97.1%[1132.7], 99%[78.4], 100%[1671.7]

Observed incidence of local symptoms (pain, redness, swelling; 4-day follow-up post-vaccination) was within the same range for both MMRV groups. Post-dose1, two fever peaks were observed, each linked to the individual vaccine profiles, with a typical MMRV-linked fever peak starting around 4 days post-vaccination. Incidence of fever >39.5°C (rectal; 15-day follow-up post-vaccination) was: Group1_post-dose1: 13.9%, post-dose2: 1.0%; Group2_post-dose1: 10.1%, post-dose2: 3.7%. No SAEs considered related to vaccination were reported.

CONCLUSIONS: No impact on the immune response of the MMRV vaccine Priorix-Tetra™ and no exacerbation of individual safety profiles were observed upon co-administration with DTPa-HBV-IPV/Hib or PHiD-CV vaccines in children. (107706/NCT00370227)

Topic: Vaccines and prevention

Paper number: 1396

Presentation type requested: Poster Presentation

BACILLE CALMETTE-GUERIN HAS AN IMPORTANT ROLE ON TUBERCULOSIS CONTROL IN SOUTH KOREA

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BACKGROUND AND AIMS: Bacillus Calmette-Guerin (BCG) vaccine has played a crucial role in controlling tuberculosis around the world however, controversies have surfaced against its efficacy. There is confidence that BCG has played a critical role in decreasing the prevalence rate of disseminated tuberculosis in Korea.

METHODS: However, a nationwide survey was needed to collect data from 1980 to 2006 to numerate the confidence level for pulmonary and disseminated tuberculosis. Only nine of the one hundred and three training hospitals were able to meet our criteria on data collection for this survey. **RESULTS:** The total sum of tuberculosis were 300-450 cases in 1980-4, 200s in 1985-9, 100s in 1990-3, 50 to 99 in 1994-9 and less than 50 later on the years. The total cases of tuberculosis dropped from 411 in 1981 to 41 in 2006 and during the same period, the number of tuberculosis decreased from 180 to 32 in pulmonary, 30 to 5 in gastrointestinal, 38 to 2 in bone and joint, 3 to 0 in urogenital, 34 to 0 in miliary and 120 to 2 in meningitis. The proportion by category changed from 43.8% to 71.1%, 7.3% to 12.2%, 9.3% to 4.9%, 0.7% to 0%, 8.3% to 0%, and 29.2% to 4.9% with an estimated BCG coverage rate of 25% in 1980 and 99% in 2006. **CONCLUSIONS:** There have been significant decrease in the number of tuberculosis cases for each category moreover; this situation was much significant in disseminated tuberculosis. In conclusion, BCG program has played an important role to control tuberculosis in Korea.

Topic: Vaccines and prevention

Paper number: 1398

Presentation type requested: Poster Presentation

DEMONSTRATION OF IMMUNOLOGICAL MEMORY USING MENINGOCOCCAL SEROGROUP C GLYCO-CONJUGATE VACCINE

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BACKGROUND AND AIMS: Studies of glyco-conjugate vaccines have traditionally used an augmented immune response to subsequent immunisation with a plain polysaccharide vaccine to demonstrate the induction of immunological memory. Plain polysaccharide vaccines are poorly immunogenic in children and may induce subsequent immunological hyporesponsiveness, and should probably be avoided in this setting. We therefore assessed the use of glyco-conjugate vaccines as an alternative method of demonstrating immunological memory.**METHODS:** Children immunised with hepatitis B vaccine (HepB) or meningococcal serogroup C glyco-conjugate vaccine (MenCC) at 2, 3 and 4 months of age received a 12 month dose of plain polysaccharide meningococcal serogroup A and C vaccine (MenACP) or MenCC. A post hoc analysis of the serum bactericidal activity (SBA) response to MenCC was conducted to assess whether this response differed in MenCC primed and MenCC naïve infants.**RESULTS:** Children primed with MenCC displayed higher geometric mean SBA titres than MenCC naïve children following a toddler dose of MenACP (1518; 95% C.I. 850 – 2713 compared with 30; 95% C.I. 4 -213, $p = 0.003$). A similar difference was seen following a toddler dose of MenCC (MenCC primed: 8663 (95% C.I. 5674 -13225) MenCC naïve: 710; 95% C.I. 490–1029, $p < 0.001$). The latter comparison became of borderline significance when the higher pre-toddler immunisation rSBA GMTs in the MenCC primed group were accounted for by ANCOVA ($p = 0.068$).**CONCLUSIONS:** Administration of glyco-conjugate vaccines provides an important alternative method of demonstrating the induction of immune memory, avoiding the use of plain polysaccharide vaccines that are potentially deleterious in children.

Topic: Vaccines and prevention

Paper number: 1405

Presentation type requested: Poster Presentation

**THE BRIGHTON COLLABORATION CASE DEFINITION FOR BELL'S Palsy AS AN ADVERSE EVENT
FOLLOWING IMMUNIZATION**

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BACKGROUND AND AIMS: Bell's Palsy has been described as an adverse event following immunization (AEFI), but globally accepted diagnostic criteria are not available. The Brighton Collaboration (BC; www.brightoncollaboration.org) is an international voluntary collaboration to facilitate the development, evaluation, and dissemination of high quality information about the safety of human vaccines. **METHODS:** An international Bell's Palsy Working Group has been formed including 36 vaccine safety experts from 15 different countries and professional backgrounds in public health, regulatory agencies and industry, as well as neurology, pediatrics, otolaryngology, electrophysiology and pharmacology. After a comprehensive literature review of > 500 relevant articles, a standardized case definition for Bell's Palsy as an AEFI was created following the Brighton Process. **RESULTS:** Bell' Palsy was defined as peripheral facial nerve palsy (paresis or paralysis) of sudden onset with no involvement of other cranial nerves or body systems and no other illness to explain the facial palsy. Three levels of diagnostic certainty discriminate between unilateral (Level 1) and bilateral illness (Level 2), and reports by health professionals (Levels 1 and 2) versus lay persons (Level 3). **CONCLUSIONS:** With pandemic flu preparedness programs and new influenza vaccine candidates being tested in different settings and stages of development, a clear definition of Bell's Palsy as a clinical entity, regardless of a potential trigger or cause, is warranted. The Brighton Collaboration case definition will be made available for the systematic assessment of Bell's Palsy as an AEFI, allowing comparability of safety data in surveillance systems and clinical trials.

Topic: Vaccines and prevention

Paper number: 1408

Presentation type requested: Oral Presentation

IMMUNOGENICITY AND REACTOGENICITY OF LIQUID VERSUS LYOPHILIZED FORMULATION OF ROTARIX™ (RIX4414) LIVE-ATTENUATED HUMAN ROTAVIRUS VACCINE IN FINLAND

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BACKGROUND AND AIMS: The lyophilized formulation of an oral, live attenuated human rotavirus vaccine RIX4414 (Rotarix™), has been shown to be highly immunogenic. However, a liquid formulation of the vaccine that does not require reconstitution has been developed. The non-inferiority in terms of immunogenicity of RIX4414 (Rotarix™) oral suspension (liquid formulation) over lyophilized formulation was assessed in a phase III, double-blinded study in Finnish infants (eTrack107876/NCT00382772). **METHODS:** Healthy infants (N=1200) aged 10-17 weeks were enrolled in two groups receiving two doses of lyophilized formulation (RIX4414-lyo) or liquid formulation (RIX4414-liq) according to a 0-1 month schedule. Infanrix hexa™ was given concomitantly. Anti-rotavirus IgA seroconversion rate (cut-off ≥20U/ml, ELISA) was assessed pre-Dose1 and 1 month post-Dose2 and corresponding geometric mean concentrations (GMCs) were calculated. Criteria for non-inferiority 1 month post-Dose2 were pre-defined (upper limit (UL) of two-sided asymptotic standardized 95% CI ≤10% for difference in seroconversion rate between two formulations and UL of two-sided 95% CI ≤2 for GMCs ratio). Solicited and unsolicited symptoms were collected. **RESULTS:** The anti-rotavirus IgA seroconversion rate 1 month post-Dose2 was 88.6% (95% CI: 86.1; 90.8) in the RIX4414-liq group (n=746) and 90.5% (95% CI: 86.2; 93.8) in the RIX4414-lyo group (n=252). The anti-rotavirus IgA GMCs 1 month post-Dose2 was 374.7U/ml (95% CI: 328.8; 426.9) in the RIX4414-liq group and 331.8U/ml (95% CI: 265.0; 415.4) in the RIX4414-lyo group. Pre-defined criteria for non-inferiority were met. Reactogenicity of the two vaccine formulations was similar. **CONCLUSIONS:** Present data demonstrate the non-inferiority of the RIX4414 (Rotarix™) oral suspension (liquid formulation) to the lyophilized formulation in terms of anti-rotavirus IgA seroconversion rates and GMCs 1 month post-Dose2. As rotavirus Universal Mass Vaccination programs are implemented worldwide, a liquid formulation allows flexibility in supply.

Topic: Vaccines and prevention

Paper number: 1410

Presentation type requested: Oral Presentation

IMMUNOGENICITY AND BOOSTER RESPONSE AFTER REDUCED INFANT VACCINATION SCHEDULES OF 7-VALENT PNEUMOCOCCAL CONJUGATE AND MONOVALENT MENINGOCOCCAL GROUP C CONJUGATE VACCINES

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BACKGROUND AND AIMS: Since September 2006 the UK routine infant immunisation schedule has included two doses of meningococcal conjugate (MCC) vaccine at 3, 4 months of age and two doses of pneumococcal conjugate (PNC) vaccine at 2, 4 months.

This was informed by previous studies which showed that, for both vaccines, protection should be adequate after two doses. These studies were conducted with concomitant administration of wholecell pertussis or three-component acellular pertussis containing vaccines and UK Infants routinely receive the five component acellular pertussis containing vaccine, Pediacel.

METHODS: The UK Vaccine Evaluation Consortium (VEC) conducted this trial to assess the immunogenicity of two-doses MCC given at the same time as PNC and Pediacel. Interactions between different polysaccharide-conjugate vaccines was recognised, so all three MCC vaccines available were included. **RESULTS:** Responses to MCC vaccination in infancy by SBA GMT and percentage of subjects achieving the putative correlate of protection, $\geq 1:8$, suggest for MCC-TT and one MCC-CRM product a single dose may be adequate, which is being explored further in a subsequent study.

In the second year of life subjects received Hib/MCC-TT, PNC and MMR. Extremely low levels of circulating antibody were noted pre-booster for Hib and MenC with extremely good booster responses to the Hib component which were similar regardless of the MCC vaccine given in infancy, though responses to the MCC booster were significantly higher in those who were primed with MCC-TT.

CONCLUSIONS: Reduced dose schedules should be protective though timing of doses and products are key. This is being explored further by the VEC.

Topic: Vaccines and prevention

Paper number: 1413

Presentation type requested: Oral Presentation

**UPDATED SAFETY PROFILE OF PROPHYLACTIC HUMAN PAPILLOMAVIRUS (TYPES 6, 11, 16, AND 18) L1
VIRUS-LIKE-PARTICLE VACCINE**

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Primary Physicians Research

BACKGROUND AND AIMS: A prophylactic HPV-6/11/16/18 vaccine (Gardasil/Silgard) has been approved in >80 countries. An updated summary of safety including post-marketing surveillance is reported. **METHODS:** Females 9-17 (n=3,833) and 18-45 years (n=20,148) and males 9-17 years (n=1,352) were enrolled and randomized to vaccine or placebo at Day 1, Months 2 and 6. Vaccination report card (VRC)-aided follow-up continued 14 days after each injection. Safety analyses used 2 populations: 1) VRC-evaluated subjects (n=14,034) for injection-site and systemic AEs; and 2) all subjects regardless of methodology for safety evaluation (n=25,274) for serious AEs (SAEs) and new medical conditions. Post-marketing surveillance includes reports from all countries where Gardasil is used, including pediatric populations. **RESULTS:** Within the trials, pain was the most common injection-site AE and headache and pyrexia the most common systemic AEs. Among females, rates of syncope were 0.3% in both the Gardasil and placebo group. SAEs occurred in 0.9% and 1.0% of vaccine and placebo recipients, respectively. Post-month 7, 2,431 9-17-year-old girls (vaccine=67.3% versus placebo=75.7%) and 570 9-15-year-old boys (vaccine=54.3% versus placebo=63.0%) reported one or more new medical conditions. As of 30-Sep-2007, ~18,000,000 doses of vaccine had been distributed post-licensure (1-Jun-2006). Passive reporting of spontaneous adverse experiences to Merck & Co. has shown a low proportion of serious AEs, comparable to that seen in a typical population in the target age groups. **CONCLUSIONS:** Administration of quadrivalent vaccine is generally well-tolerated in 9- to 45-year-old females and 9- to 15-year-old boys. The passive reporting of spontaneous adverse experiences post-licensure has confirmed the favorable safety profile of the vaccine.

Topic: Vaccines and prevention

Paper number: 1419

Presentation type requested: Oral Presentation

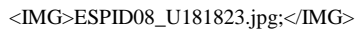
BURDEN OF PNEUMOCOCCAL DISEASE (PD) IN EASTERN EUROPE: IMPORTANCE OF INCLUSION OF PNEUMOCOCCAL CONJUGATE VACCINE INTO NATIONAL IMMUNIZATION PROGRAMS (NIPS)

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BACKGROUND AND AIMS: Streptococcus pneumoniae (SP) is the leading cause of vaccine-preventable deaths in children <5 years. We reviewed PD surveillance data in selected eastern European (EE) countries to estimate the potential regional impact of the available 7-valent PCV (Prevenar, PCV7), and the investigational 10- (iPCV10) and 13-valent (iPCV13) formulations. **METHODS:** Data were identified searching OVID (1996 to 2007), reference lists of relevant papers, and national websites. **RESULTS:** Insert Table

For IPD overall, vaccine-serotype coverage in children <2 years ranged from 48-74% for PCV7, 52-77% for iPCV10, and 67-86% for iPCV13, respectively. AOM data are available from the Czech Republic; the 5 most frequent serotypes isolated in children <2 years (n=140) were: 3 (15%), 19F (14.3%), 23F and 14 (9.3% each), and 9V (6.4%); serotype coverage for PCV7, iPCV10, iPCV13 was 52.1%, 61%, and 80%, respectively. **CONCLUSIONS:** Reported data from many EE countries appears to underestimate the true burden of PD. Recognizing this burden and potential impact of vaccination, the World Health Organization (WHO) considers PCV a priority for inclusion in all NIPs.



Topic: Vaccines and prevention

Paper number: 1428

Presentation type requested: Poster Presentation

COMBINED ANALYSIS OF THE TOLERABILITY, SAFETY, AND IMMUNOGENICITY OF ENCEPUR® CHILDREN

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BACKGROUND AND AIMS: The aim of this analysis was to review the safety and immunogenicity profile of Encepur® Children (pediatric tick-borne encephalitis [TBE] vaccine) after primary vaccination across different age groups. **METHODS:** Data from all Phase III/IV studies with Encepur® Children were pooled and analyzed using pre-defined criteria. Solicited systemic reactions were analyzed on days 0-3 following the first injection with Encepur® Children; serious adverse events (SAEs), as reported throughout the study evaluation periods, were also assessed. The proportion of subjects achieving neutralizing TBE-antibody titers of ≥ 10 (neutralization test [NT], in house, Novartis Vaccines) was determined on post-vaccination study days 42 and 300. **RESULTS:** The clinical database comprised 3181 recipients of Encepur® Children. The most frequently reported systemic reactions in children 1-2, 3-5, and 6-11 years of age were fever $\geq 38^{\circ}\text{C}$ (16%), malaise (7%), and headache (11%), respectively. All reactions were transient and mostly mild. There were no causally related SAEs. The proportion of children with TBE NT ≥ 10 at Days 42 and 300 per age group ranged between 96-100% and 93-100%, respectively, following registered vaccination schedules for primary vaccination with Encepur® Children. **CONCLUSIONS:** The safety and immunogenicity profile of Encepur® Children is well documented in >3000 children 1-11 years of age. Our analysis confirms the safety and immunogenicity profile of Encepur® Children.

Topic: Vaccines and prevention

Paper number: 1431

Presentation type requested: Poster Presentation

MEASLES IGG TITER OF MOTHERS AND INFANTS UNDER 12 MONTHS OF AGE IN KOREA

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BACKGROUND AND AIMS: Although Korea has declared the measles elimination in 2006, there have been small sporadic endemics after then. We conducted this study to provide the rational data for considering the need of measles immunization before the first birthday by measuring the measles IgG titer in mothers, newborns, and infants less than 12 months of age. **METHODS:** Twelve mothers and 138 infants who were admitted to Chonbuk National University Hospital (Jeonju, Korea), from April 1 through October 31, 2006, without problems affecting measles antibody titer, were enrolled. The infants were grouped by monthly age. Measles specific IgG titer in the sera of was measured with ELISA (IBL, Hamburg, Germany). Antibody titer over 12 U/mL was considered positive and the geometric mean titer (GMT) of each group was obtained. **RESULTS:** The GMTs (seropositivity rate) were 32.7 U/mL (46.1%) in the mothers, 66.1 U/mL (70.6%) in the neonates, 5.98 U/mL (8.7%) in 1 month infants, and 5.54 U/mL (7.14%) in 2 month infants, respectively. In all infants groups after 3 months of age, the GMTs were below 3.0 U/mL and the seropositivity rates were 0%. **CONCLUSIONS:** In this study, the measles specific IgG level and the seropositivity decreased rapidly to very low level after 3 month of age in Korean infants. These results suggest that the first measles vaccination could be needed earlier than 12 months of age.

Topic: Vaccines and prevention

Paper number: 1432

Presentation type requested: Oral Presentation

LONG-TERM PERSISTENCE OF TBE ANTIBODIES IN CHILDREN 5 YEARS AFTER BOOSTER VACCINATION WITH ENCEPUR® CHILDREN

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BACKGROUND AND AIMS: The optimal timing for booster doses of tick-borne encephalitis (TBE) vaccine following primary vaccination of children is unknown. The aim of this study was to evaluate the persistence of TBE antibodies in children 3-5 years after their first booster dose of Encepur® Children. **METHODS:** Children who had been vaccinated using a rapid schedule on Days 0, 7, and 21, followed by a first booster dose 12-18 months later (in previous clinical studies), were invited for this 3-5-year follow-up. TBE antibodies were measured by virus neutralization test (NT, in house, Novartis Vaccines) and also by anti-TBE IgG ELISA (Enzygnost®, Siemens). **RESULTS:** One hundred and ninety of 232 subjects (82%; 95% CI: 77-87%) who completed the 5-year follow-up had NT titers ≥ 10 . The other 42 subjects had NT titers ≥ 10 three years after the first booster vaccination, and received a further booster dose prior to taking part in the current study. One hundred and eighty-eight of the 190 subjects with NT titers ≥ 10 (99%; 95% CI: 96-100%) tested positive in the ELISA. **CONCLUSIONS:** Based on serological data, the interval for subsequent booster doses of Encepur® Children can be extended from 3 to 5 years after receiving a rapid primary vaccination course (Days 0, 7, and 21) and a first booster vaccination 12-18 months later.

Topic: Vaccines and prevention

Paper number: 1433

Presentation type requested: Oral Presentation

INTERVENTIONS TO IMPROVE INFLUENZA VACCINATION COVERAGE AMONG CHILDREN WITH CHRONIC ASTHMA

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BACKGROUND AND AIMS: Although health authorities recommend influenza vaccination in children with chronic asthma, the level of vaccination coverage in these patients remains very low. **METHODS:** This study involved patients with chronic asthma whose parents were administered a questionnaire eliciting information regarding influenza vaccination status of their children. Thereafter, all the children were randomized in three different groups: group A, directly called by a doctor who is not the same they usually refer to and vaccination given by external operators; group B, called directly by the doctor they usually refer to, but vaccination given by external operators; group C, called and also vaccinated directly by doctors working in the outpatient clinic for chronic asthma. **RESULTS:** Among 348 children with chronic asthma (225 males; mean age, 10.2 ± 3.4 years), 141 children (40.5%) had received the vaccine at least once in their life and 125 (35.9%) repeated it in the season before the interventions. All the three different interventions increased influenza vaccination coverage, with values variable between 11% and 21%. Group C was the one that reached the significantly higher vaccination coverage in comparison with the other groups regardless of asthma severity and previous influenza vaccination status (OR 2.03; 95% CI, 1.02-4.05). **CONCLUSIONS:** Without specific interventions, the rate of delivery of influenza vaccine to children with chronic asthma appears inadequate. In order to improve influenza vaccination coverage, specific interventions appear mandatory in these patients. The administration of influenza vaccine during routine clinical visits performed in asthma outpatient clinic appears the best way to increase influenza vaccination coverage.

Topic: Vaccines and prevention

Paper number: 1436

Presentation type requested: Poster Presentation

INFLUENZA VACCINATION IN CHILDREN OFF-THERAPY FOR ONCOLOGICAL DISEASE

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BACKGROUND AND AIMS: Influenza vaccination is recommended in children with chronic disease however the level of vaccination remains low. Aim of study: to compare influenza vaccination in children off-therapy for oncological disease and in healthy children, and to investigate factors influencing vaccination practice and methods to increase it in oncological children.
METHODS: Cases: children off-therapy for oncological disease; controls: healthy children. Parents of children answered a questionnaire about vaccination status of their sons in 2005-2006 season.

Free influenza immunization was proposed to parents of children off-therapy for oncological disease, for the 2006-2007 season, with 3 different methods by randomization: in the first group the oncologist suggested that the patient should be vaccinated in oncologic consulting room, in the second group the oncologist suggested that the patient should be vaccinated in the same hospital but in a different consulting room, in the third group a doctor external to the hospital suggested the vaccination in an external consulting room.

RESULTS: 72 of 400 (15%) healthy children and 53 of 199 (24.12%) oncological patients resulted immunized.

The three different vaccine strategies equally proved effective in producing an increase of vaccinal coverage in oncological children from 24.12% reported in 2005-2006 season to 52.68% reported in 2006-2007; in this group influenza vaccination produced a remarkable 50% decrease in the number of respiratory and gastrointestinal infections.

CONCLUSIONS: A greater attention to influenza and its complications is given by parents of oncological patients.

The three strategies have proved equally effective in determining an increase in vaccination coverage of children in the cohort studied.

Topic: Vaccines and prevention

Paper number: 1456

Presentation type requested: Poster Presentation

AWARENESS OF PARENTS CONCERNING HUMAN PAPILLOMA VIRUS (HPV) INFECTION AND VACCINE

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BACKGROUND AND AIMS: Young adolescents are likely targets for vaccines against sexually transmitted diseases (STD). The extent of parental acceptance for adolescents' vaccination against STD still remains unclear. The purpose of this study was to identify the knowledge and parental attitudes to vaccinate their children against HPV. **METHODS:** Questionnaires were completed by parents visited Agia Sophia Children's Hospital in Athens (group 1) and also General Hospital of Trikala (Central Greece) (group 2) about accepting children vaccine against HPV. Social-demographic variables, self-reported history of parent STD diagnosis, their assessment of whether their adolescent child had ever had sex and health beliefs about STD were recorded. **RESULTS:** Data were collected from 113 parents in group 1 (80.4% mothers, aged 44.7 + 4.7 years) and 100 parents in group 2 (92% mothers, aged 43.1 + 6.3 years).

Parental knowledge of STD and especially HPV infection characteristics seems to be extremely poor in both groups, especially in group 2. Almost half of the parents in two groups consider unlikely or rare the HPV infection of their child (60.6% and 57.6%) and believed that vaccination will increase STD-related risky behaviors (43.8% and 47.6%).

Nevertheless, the majority of patients in two groups approved HPV vaccine (94.2% and 96.8%) and had the belief that vaccine will reduce the risk of transmission of HPV infection (97.2% and 99%).

CONCLUSIONS: This study suggests that most of parents will accept providers' recommendations to vaccinate their children against STD, but it seems necessary to be previously extensively informed about STD and immunization issues.

Topic: Vaccines and prevention

Paper number: 1470

Presentation type requested: Oral Presentation

**OBSERVATIONAL STUDY ASSESSING EFFICACY OF A SINGLE DOSE OF THE HEPATITIS A VACCINE EPAXAL®
IN NICARAGUA: METHODOLOGY AND FIRST RESULTS**

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BACKGROUND AND AIMS: Background and Objectives: Universal mass vaccination (UMV) of young children with two doses of hepatitis A virus (HAV) vaccine is effective in eliminating hepatitis A. Implementation of routine HAV vaccination in endemic countries is slow due to limited funds. A single dose strategy would facilitate introduction of UMV against HAV. In 2005 we initiated an observational study to assess the protective efficacy of a single dose of an aluminium-free HAV vaccine (Epaxal®) in children in León, Nicaragua. **METHODS:** Methods: 130 seronegative (serosurvey 2003), 2 to 17 year old children/adolescents, received in 2005 a single dose of Epaxal® (24 IU/0.5mL). Changes in anti-HAV antibody levels indicative of intercurrent HAV infection are documented yearly. The persistent HAV circulation in the community is documented by anti-HAV IgM antibody screening offered to all jaundiced children/adolescents visiting health clinics in León (243.000 inhabitants). **RESULTS:** Results: Within 15 months, 26 children initially seronegative in 2003, were infected (anti-HAV antibodies 8,000-360,000 mIU/mL), confirming the local anticipated 15-20% annual infection risk. None of the 104 vaccinated and protected children (post-vaccination anti-HAV antibodies 25-572 mIU/mL) had clinical or serological evidence of HAV infection during 27 months of follow-up. Of 166 jaundice cases screened in 2006/2007 67.5% were HAV positive, 82% thereof aged ≤ 10 years. **CONCLUSIONS:** Conclusions: Hepatitis A is still highly endemic in León. The first 2½ years have proven the feasibility of such an observational study. A first assessment of the protective efficacy of a single dose of Epaxal® will be done after completion of 3 years of follow-up.

Topic: Vaccines and prevention

Paper number: 1474

Presentation type requested: Poster Presentation

EVALUATION OF THE TUBERCULIN SKIN REACTION IN BCG VACCINATED CHILDREN ONE YEAR AFTER VACCINATION

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BACKGROUND AND AIMS: BCG vaccination can affect tuberculin skin test conversion, therefore complicating the diagnosis of TBC infection in vaccinated children. The aim of our study was the evaluation of tuberculin skin test, in healthy BCG vaccinated children, the correlation with the presence of BCG scar and the determination of cutoff limits for the characterization of the reaction as positive. **METHODS:** We evaluated the tuberculin (2TU) skin test results of 335 healthy children from a rural area, one year after BCG vaccination. **RESULTS:** The overall conversion rate was 59,7% (200 children), with the induration varied from 3 to 21mm (mean 8,35 mm). The reaction size was 0mm in 135 children (40,3%), 1-5mm in 50 (14,9%), 6-9mm in 80 (23,9%), 10-14mm in 57 (17%) and ≥ 15 mm in 13 children (3,9%). A visible BCG scar was present in 293 children (87,5%). The conversion rate among “scar – positive” children was 66,2% (194) (median: 7mm, 95th percentile: 14mm) and 14,2% (6) among “scar-negative” children (median: 1mm, 95th percentile: 9mm; $p < 0,001$). **CONCLUSIONS:** We conclude that the conversion rate and the size of tuberculin skin reaction is strongly related with the presence or absence of a BCG scar. Consequently, for the characterization of a tuberculin skin reaction as positive in BCG vaccinated children, we propose a cutoff of 15mm in “scar-positive” and 10mm in “scar-negative” children.

Topic: Vaccines and prevention

Paper number: 1477

Presentation type requested: Oral Presentation

**'CAPITAL-CATCH-UP:' JOINT HEALTH SERVICE RESPONSE TO INCREASING RISK OF MEASLES EPIDEMICS
IN LONDON**

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BACKGROUND AND AIMS: MMR vaccination rates in London have been substantially below recommended levels and falling since 1997, and measles outbreaks are returning. The primary care trusts (PCTs) in London collaborated on an immunisation catch-up campaign during the winter of 2004/05. **METHODS:** PCTs agreed to each implement a campaign to identify and administer one dose of MMR to all un- or incompletely immunised children of primary school age in their districts. Most used a school based approach to identify eligible children, seek consent and administer the vaccination. An inter-agency committee defined the programme parameters, provided technical support, resources and logistics coordination. **RESULTS:** all PCTs implemented the programme, with varying effectiveness. An estimated 43,000 children were vaccinated including 16,500 with no parental history of MMR vaccination. Overall parental response to the programme was 47 percent. 70 percent of those identified as eligible were vaccinated by the PCT programmes. The estimated prevalence of susceptible children in the target age-group fell by 1-2 percent but overall remained above the European indigenous measles eradication guidelines. R values for most districts, where measurable, remained in excess of 1. **CONCLUSIONS:** "Capital Catch-up" was the first major regional response to the increasing measles risk in the United Kingdom. However, risk of measles transmission continues in several areas of London. Identification of eligible children, and obtaining consent for vaccination in school settings, proved more difficult than expected. A repeat programme remains a possibility, but present efforts are directed at supporting schedule vaccination and opportunistic vaccination of school age children.

Topic: Viral infections

Paper number: 1003

Presentation type requested: Poster Presentation

CHOLESTATIC HEPATITIS COMPLICATING EPSTEIN-BARR VIRUS INFECTION IN 10-YEAR-OLD GIRL

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BACKGROUND AND AIMS: Epstein-Barr virus (EBV) is a worldwide distributed gamma herpesvirus. Primary infection occurs frequently in childhood or adolescence. Hepatic involvement represented by elevation of liver function tests is a common feature but severe liver dysfunction is rare. A child with cholestatic hepatitis caused by serologically diagnosed infection with EBV is being presented. **METHODS:** A case report. **RESULTS:** A ten-year-old girl was evaluated due to cervical lymph nodes tenderness accompanied with fever and finally admitted to the hospital. The girl complained of sore throat and dyspepsia. At admission she was jaundiced and feverish. Clinical examination revealed pharyngitis, cervical and axillary lymph nodes enlarged, hepatosplenomegaly. Laboratory test results showed white blood cell (WBC) count 13600/mm³ with a differential count demonstrating 52% lymphocytes, distinct rise of transaminases (AST-483 U/L, ALT-531 U/L), total bilirubin was initially 5.88 mg/dL rising to 8.98 mg/dL (direct bilirubin 5 mg/dL) on the third day. Diagnosis of EBV infection was made: heterophil test and EBV serology were positive. Mildly increased INR at the very beginning normalized with improving liver function tests. Lymphocyte immunophenotyping was consistent with acute EBV infection.

After four weeks symptoms resolved entirely but liver associated laboratory test remained mildly elevated for the next six months. Bilirubin fluctuated during the whole period after the first month of acute symptoms between 3.16 mg/dL and normal values. The transaminases activity and bilirubin concentration finally became normal after four and six month respectively.

CONCLUSIONS: EBV infection should be considered in a child with severe cholestatic hepatitis

Topic: Viral infections

Paper number: 1004

Presentation type requested: Poster Presentation

SEVERE CHOREA WITH POSITIVE ANTI-BASAL GANGLIA ANTIBODIES AFTER HERPESENCEPHALITIS

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BACKGROUND AND AIMS:Chorea has been described as an initial sign of relapse in children with herpesencephalitis. At least three pathogenic mechanisms are possible: occurrence of late-onset symptoms of the initial viral infection, recurrence of viral replication or induction of a deleterious immuno-inflammatory reaction. **METHODS:**none**RESULTS:**At 2 ½ years a so far healthy girl experienced acute herpes simplex virus (HSV) encephalitis with positive type 1 HSV PCR in CSF and was treated with acyclovir followed by rapid recovery. Three weeks after initial onset she developed a compulsive behaviour, restlessness, disturbed circadian sleepawake rhythm and, within days, severe chorea. Streptococcal serology and antinuclear factors as well as HSV 1 PCR and HSV 1 IgM in CSF were negative while HSV 1 IgG was found positive. Acyclovir, intravenous immunoglobulines, various neuroleptics and antidopaminergic drugs were of no benefit. Five weeks after onset of chorea nasotracheal intubation became necessary due to severe laryngeal and pharyngeal dystonia. By means of immunoblotting a specific protein corresponding to anti-basal ganglia antibodies (ABGA) was determined in plasma as well as in CSF. High dose intravenous methylprednisolone remained clinically ineffective. However, intermittent plasmapheresis and systemic immunosuppression resulted in rapid improvement and extubation after two weeks. ABGA were undetectable immediately after the last plasmapheresis and in further plasma samples taken at different time-intervals thereafter. 2 years after plasmapheresis she has suffered from no further relapse. **CONCLUSIONS:**These findings suggest a post-infectious, immune-mediated mechanism in this case of chorea following HSV encephalitis.

Topic: Viral infections

Paper number: 1007

Presentation type requested: Poster Presentation

INCREASED CD40+ EXPRESSION IN INFANTS SUFFERING FROM RSV BRONCHIOLITIS

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BACKGROUND AND AIMS: “Respiratory syncytial virus” (RSV) is one of the most common pathogens of viral diseases in early infancy. During primary infection the phase with most pronounced clinical symptoms is not observed during the phase with highest virus replication but during development of a specific T and B immune response.

METHODS: Peripheral blood mononuclear cells were obtained from peripheral blood samples of 21 infants during routine examinations and after informed consent of at least one parent had been given. Cells were prepared by ammonium chloride mediated lysis, incubated with the respective antibodies and analyzed by flow cytometry according to standard procedures.

RESULTS: We analyzed CD40 expression of CD19+ lymphocytes. In infants suffering from bronchiolitis we found a median value of 876 CD40+ B cells, while the median value in healthy children was 201/μl. We detected a significant difference between children with bronchiolitis and the healthy controlgroup (p 0,0064). A regression analysis revealed a correlation between CD40 expression of children with bronchiolitis and the respective CRP values.

CONCLUSIONS: As a result of B T cell interactions during infection we found a strong CD40 upregulation of B lymphocytes in children suffering from bronchiolitis compared to healthy infants. Furthermore, CD40 expression was correlated to the respective CRP values.

Topic: Viral infections

Paper number: 1009

Presentation type requested: Poster Presentation

BRONCHIOLITIS: PREDICTION OF RSV INFECTION AND PHYSIOLOGICAL SCORING: A STUDY ON 180 INFANTS

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BACKGROUND AND AIMS: to show the influence of RSV infection on the severity of illness and the predictive power of the physiological scoring systems APSC (acute physiological Score for Children), OSF (organ System failure) and PRISM III (pediatric risk of mortality). **METHODS:** to show the influence of RSV infection on the severity of illness and the predictive power of the physiological scoring systems APSC (acute physiological Score for Children), OSF (organ System failure) and PRISM III (pediatric risk of mortality) **RESULTS:** 111 of 180 infants were RSV positive. The PRISM III Score at admission was $3,09 \pm 0,36$ for RSV positive infants and $1,96 \pm 0,44$ bei RSV neg ones ($p=0,049$). The APSC showed with $4,9 \pm 0,43$ and $4,1 \pm 0,53$ no significant difference, respectively. The OSF showed with $0,52 \pm 0,05$ and $0,35 \pm 0,06$ the most significant difference ($p=0,037$), respectively.

103 infants were not ventilated invasively, 47 infants were ventilated 1-7 days, 30 8-14 days and 10 infants were ventilated for more than 14 days.

In comparison to time of ventilation all three Scores showed a highly significant correlation ($p < 0,0001$).

CONCLUSIONS: RSV positive infants showed a worse course compared to RSV negative ones, they showed significant higher PRISM III and OSF Scores. All three Scores correlated excellent with time of ventilation

Topic: Viral infections

Paper number: 1010

Presentation type requested: Oral Presentation

ENCEPHALITIS IN PEDIATRIC PATIENTS: PROSPECTIVE EVALUATION IN A PICU IN 22 YEARS

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BACKGROUND AND AIMS: Encephalitis is a rare disease. The herpes simplex virus is one of the most dangerous infections. Initially the symptoms may not be specific, but seizures or somnolence will lead to presentation in hospital.
METHODS: All patients with encephalitis and admission to our 12 bed PICU from 1985 to 2007 (n=40), prospective study, documentation of prehospital illness, Glasgow Coma Scale (GCS), physiological scores at admission, chemistry of cerebrospinal fluid, CT, MRI, and EEG.
RESULTS: The mean age was 7,1±5,7 years. At the time of admission they showed nonspecific symptoms as fever (n=19), vomiting (n=9), unconsciousness (n=18) and convulsions (n=20) from a few hours to seven days. The cerebrospinal fluid showed a positive result in 28 patients. In 19 patients we found an infection with herpes simplex viruses. By means of MRI, an encephalitis was diagnosed in 17 of 32 patients. The EEG showed specific signs of encephalitis in six patients.

Nine of our patients with herpes simplex infection recovered completely, six of them had neurological defects and four of them died. In the patient group without herpes infection 15 recovered completely, five of them had neurological defects and one patient died.

CONCLUSIONS: Neurological deficits need a quick diagnosis, since in case of herpes simplex encephalitis the better outcome correlates with the early start of treatment with acyclovir. Patients with herpes simplex virus encephalitis showed a significant worse outcome compared to patients without herpes simplex infection. There was no examination that showed a higher sensitivity than 60%.

Topic: Viral infections

Paper number: 1017

Presentation type requested: Poster Presentation

A PROSPECTIVE EVALUATION OF ROTAVIRUS GASTROENTERITIS IN HOSPITALIZED CHILDREN IN AMMAN, JORDAN. EPIDEMIOLOGY AND DISEASE BURDEN

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BACKGROUND AND AIMS: To assess the Incidence, Spectrum of clinical manifestations & Potential beneficial effect of breast feeding, of rotavirus-related diarrhea among children less than 5 years in Amman- Jordan. **METHODS:** A total of 755 male and female children less than five years of age admitted with acute diarrhea were studied PROSPECTIVELY at the Islamic Hospital (Amman Jordan) in the period from January to December 2005. Only healthy infants (beyond neonatal and children without any known gastro-intestinal illnesses were included in the study). Stool samples were tested for rotavirus, by agglutination of latex particles on slide. **RESULTS:** Rotavirus infection was identified in 149 (20%) of cases. Children between 4 and 24 months of age are affected most (93%), decreasing to 5% in patients beyond two years of age. The overall mean age was 12.2 months

Males were more infected than females (60.0% vs 40%). Marked seasonality of rotavirus infections was observed, with a peak in winter (40%) and fall (39%) seasons. Fever was noted in (48%) of patients while severe vomiting and respiratory symptoms were observed in (15% and 36% respectively). Toxicity was noted in 5% of patients. In infants up to twelve months of age who were breast-fed there was an infection rate of 21%, significantly lower than that in the bottle-fed group (48%)

CONCLUSIONS: The infection is common in Jordan. The clinical manifestations early in the disease may mimic other severe infections. Early recognition of rotavirus infection by the appropriate laboratory investigations will save a lot of the cost spent in doing unnecessary investigations or prescribing antimicrobials.

Topic: Viral infections

Paper number: 1024

Presentation type requested: Poster Presentation

EPSTEIN –BARR VIRUS INFECTION IN IRANIAN CHILDREN

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BACKGROUND AND AIMS: Epstein –Barr (virus EBV) infection in children is considered a benign disease but can be associated with severe complication.

The objective was to characterize EBV infection in hospitalized children in Ali Ehsan Hospital in IRAN (Zahedan)

METHODS: Retrospective study from October 2006 to December 2007. EBV infection was diagnosed through positive IgM viral capsid antigen. Demographic features, clinical presentation, complication, laboratory findings and evolution were analyzed.

RESULTS: Of 3469 children hospitalized during this period, 25 were analyzed. The median age was 3.84 years (8 months to 12 years). 65% were male. Major clinical features were fever (85%), adenopathy (65%), tonsillitis (32%), hepatomegaly (40%), splenomegaly (32%), and exanthema (40%). 15% presented with upper airway obstruction and 45% had atypical lymphocytosis at admission. All patients recovered without major complication. There was no mortality.

CONCLUSIONS: EBV infection in young children, usually is a symptomatic or accompanied by such mild nonspecific manifestations as URI, tonsillopharyngitis or prolonged febrile illness with or without lymphadenopathy.

Topic: Viral infections

Paper number: 1025

Presentation type requested: Poster Presentation

HEPATITIS A AND RELATED CARDIOVASCUL MANIFASTATION IN IRANIAN CHILD .

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BACKGROUND AND AIMS: Hepatitis A is one of the most frequent infectious liver disease affecting children worldwide. Extra hepatic manifestation of acute hepatitis A virus are rare in pediatric age group. we report a case of 14 year old girl otherwise healthy adodescent who had viral nepatitis A with cardiovascular manifestation such as bradycardia and hypotension .
METHODS: CASE REPORT
RESULTS:

A. 14 years old girl presented with fatigue , weakness , jaundice, loss of appetite, abdominal discomfort. Her past medical history was unremarkable. upon arrival to the hospital she was hypotensive (70/40 mm hg) and

bradycardic (heart rate, 50 beafs min) .An electrocardiogram showed sinus

bradycardia (fig.1,2,3) Her temperature was 36.c axillary. sclera was yellowish and tenderness in right upper quadrant was present . Biochemical function tests were compatible with acute hepatitis . Serum levels were:

AST: 79u/l Wbc=9700(neut=42%)

Alt: 80u/l Hb=10

Alk ph=912 ESR =10

Albumin= 20 billirub [T=7.2]

pt=43 [D=2.3]

ptt=57 Anti HAV IgM =positive

U/A=negative anti HCV IgM = Negative

wright, widal = Negative anti HBS= Negative

Methylprenisolon as 3 mg/ kg/ Q8h was started for him and after one week clinical improvement was observed but gradually complete improvement obtained

CONCLUSIONS:we report herein a case of hepatitis A with cardiovascular instability related high bilirubin levels, in which the treatment with methylprednisolon therapy led to a clinical impr

Topic: Viral infections

Paper number: 1026

Presentation type requested: Poster Presentation

CRIMEAN-CONGO HEMORRHAGIC FEVER(CCHF) IN IRANIAN CHILDREN

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BACKGROUND AND AIMS: Crimean-Congo Hemorrhagic Fever is a fatal viral zoonotic disease. The CCHF virus belongs to Nairovirus genus and Bunyaviridae family, and is transmitted to humans by infected tick bite, handling of infected blood or tissues or nosocomially. **METHODS:** We have collected Iranian CCHF probable children's sera between 2000 and 2007 (up to 14 November). They were all checked by specific ELISA for detecting antibodies against CCHFV and by RT-PCR assay for detecting the genome of virus. **RESULTS:** From June 2000 to 14 November 2007, sera were collected from 98 CCHF probable children between 2 months to 14 years old. Among these cases, 19 were IgM positive in ELISA test and 3 cases were only RT-PCR positive. The number of probable, confirmed cases according to the year are respectively 2000 (10, 1), 2001 (22, 5), 2002 (18, 5), 2003 (18, 5), 2004 (7, 1), 2005 (5, 0), 2006(10, 2), and 2007 (8, 3). This study demonstrated that the infected provinces were Sistan-Balouchestan (with 68.2% of confirmed cases), Fars, Khuzestan, Tehran (each with 9.1% of confirmed cases), and Golestan (with 4.5% of confirmed cases). **CONCLUSIONS:** As our study has demonstrated, the most infected province is Sistan-Balouchestan in the southeast of Iran bordering Pakistan and Afghanistan where CCHF is endemic. Therefore, importantly, as seen in our results, the Iranian children resident in these infected provinces are much more exposed to CCHF, and it seems that with a continuous training program for these children, the incidence of CCHF in these age groups in the endemic regions will be decreased.

Topic: Viral infections

Paper number: 1030

Presentation type requested: Poster Presentation

CLINICAL CHARACTERISTICS OF REAL-TIME PCR PROVEN EBSTEIN-BARR VIREMIA IN KOREAN CHILDREN

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BACKGROUND AND AIMS: It was believed that primary Epstein-Barr virus (EBV) infection occur in younger age in Korea than in Western countries. However, it was difficult to confirm EBV viremia in young children serologically. The aims of this study were to determine the diagnostic significance of real-time PCR, and to compare the clinical characteristics of EBV viremia in infancy to those of older children. **METHODS:** The subjects consisted of 45 patients, who were suspected as acute EBV infection at the Department of Pediatrics, Wonju Christian Hospital from Jan. 2004 to Dec. 2006. The real-time PCR of cell free serum was performed. We chose 10 to the 2.5 copies/ μ g DNA as a cut-off value. **RESULTS:** Fifteen patients (5 infants, 10 older than 1 year old) were diagnosed as EBV viremia. The clinical characteristics of the older than 1 year of age group were fever (70%), red throat (80%), lymphadenopathy (50%), hepatomegaly (30%), splenomegaly (30%), skin rash (10%). Atypical lymphocytosis and thrombocytopenia were found in 50% and 30%, respectively. The clinical characteristics of the infant group were fever (80%), red throat (40%), lymphadenopathy (20%), hepatomegaly (20%), splenomegaly (20%), and skin rash (20%). Neither atypical lymphocytosis nor thrombocytopenia was revealed in infants. **CONCLUSIONS:** Real time PCR was a sensitive tool for the diagnosis of EBV viremia. The clinical characteristics of EBV viremia patients older than 1 year of age were similar to that of classically described EBV infection. However, the clinical characteristics, especially hematologic pictures, of EBV viremia infants were atypical.

Topic: Viral infections

Paper number: 1049

Presentation type requested: Poster Presentation

WHAT ARE THE MOST SIGNIFICANT RISK FACTORS FOR HCV VERTICAL TRANSMISSION? RESULTS FROM A STUDY OF 143 MOTHER-INFANT PAIRS

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BACKGROUND AND AIMS: Perinatal transmission of HCV is the most important route of virus spread among children. We evaluated the HCV vertical transmission rates and the role of different maternal factors in a population of either HCV infected or HIV coinfecting mothers and their infants.

METHODS: The study includes 118 HCV infected pregnant women (50 HIV coinfecting) and their 143 infants born from January 2000 through June 2006.

The infants were considered to be infected when HCV-RNA was detected in peripheral blood or when anti-HCV persisted beyond 2 years of age.

Maternal risk factors, including HIV coinfection and IVDU, were analyzed; type of delivery was evaluated only regarding the women not HIV coinfecting.

RESULTS: 19/143 children (13.2 %) resulted HCV-infected.

HCV transmission rates were higher in HIV-negative (16.2 %) than in HIV coinfecting mothers (8.9 %).

The rates of transmission were similar in IVDU (15.6 %) and in not IVDU mothers (12.8 %); among the IVDUs there was an interesting difference in transmission rates between HIV-negative (26.3 %) and HIV-positive mothers (11.1 %).

Transmission resulted significantly more frequent (33 %) from mothers using drug during pregnancy than from those who stopped use before pregnancy (13 %).

The risk of infection resulted particularly high in infants vaginally delivered when lacerations or premature rupture of membranes occurred (33.3 %).

CONCLUSIONS: In our experience women IVDU are at high risk of HCV transmission especially if they are active users during pregnancy, independently of HIV infection.

HCV perinatal transmission resulted more frequent in infants delivered vaginally, particularly when complications occurred.

Topic: Viral infections

Paper number: 1060

Presentation type requested: Oral Presentation

HUMAN BOCAVIRUS AND MYCOPLASMA PNEUMONIAE IN HOSPITALIZED CHILDREN WITH ACUTE ASTHMA EXACERBATION

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BACKGROUND AND AIMS: Human Bocavirus (HBoV) has been described as a common agent of lower respiratory tract infections in young children with wheezing

Objective of the study: To determine prevalence of infection with HBoV in comparison with Mycoplasma Pneumoniae (MP) and other viruses among asthmatic children, aged 2 to 15 years, hospitalised for severe acute attack.
METHODS: We screened with PCR for HboV and MP in nasopharyngeal aspirate from 166 children, aged > 2 years, hospitalized for acute asthma between 1st October 2005 and 30 November 2007. An immunofluorescence assay was performed to identify other respiratory viruses
RESULTS: HBoV was detected in 21 children (12.7%) and MP in 22 (13.2%). Respiratory Syncytial Virus was found in 13 (7.8%) and HMPV in 3.6%. Influenza viruses were found in 5 patients, Parainfluenza III in 2 and Adenovirus in 1. During the same time a nasopharyngeal aspirate was performed in 50 children with stable asthma, without exacerbation since 6 months : PCR for HboV was positive in 1, and negative for MP
CONCLUSIONS: Our study shows that Bocavirus is a frequent cause of severe acute asthma exacerbation in children older than 2 years, with the same importance as Mycoplasma Pneumoniae

Topic: Viral infections

Paper number: 1062

Presentation type requested: Oral Presentation

**THE EFFICACY OF ORAL RIBAVIRIN IN CHILDREN WITH CRIMEAN-CONGO HEMORRHAGIC FEVER (CCHF)
IN IRAN**

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BACKGROUND AND AIMS: Crimean-Congo hemorrhagic fever (CCHF) is a viral hemorrhagic fever. Outbreaks have been recorded in Iran. The data on the efficacy of Ribavirin in children with CCHF is scanty. This study was conducted regarding efficacy of ribavirin therapy in children with CCHF in Southeast of Iran. **METHODS:** During 1999 till 2006, 184 confirmed CCHF cases were admitted in BooAli hospital in Sistan province of Iran, of whom 34 cases were below age 18 years old, were included in this study. We conducted the outcome analysis of survived treated patients in this study. **RESULTS:** Out of 34 children with CCHF (23 Male, 11 Female) with age range 5 to 18 years old.

24 patients had been treated by oral ribavirin within the initial three days, 8 patients treated after three days of the onset of disease and two cases had not been treated with ribavirin. Out of the 32 treated patients, 6 cases were died. Fatality rate was 18.75% in treated patients. 26 patients with oral ribavirin survived (survival rate=81.25%).

The recovery rate was higher in the children who were treated during the initial 3 days than children who were treated after this time or were not treated (85.2% versus 24.8%).

Both these two children who had not been treated with ribavirin were died.

CONCLUSIONS: In children with CCHF treatment with oral Ribavirin can increase survival rate. The recovery rate was higher in the children who were treated during the initial 3 days of the illness. We conclude that the oral Ribavirin is an effective drug in children with CCHF.

Topic: Viral infections

Paper number: 1063

Presentation type requested: Oral Presentation

**CLINICO.EPIDEMIOLOGIC AND OUTCOME ANALYSIS OF CRIMEAN-CONGO HEMORRAHAGIC FEVER(CCHF)
IN CHILDREN IN IRAN**

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BACKGROUND AND AIMS: Crimean-Congo hemorrhagic fever (CCHF) is a viral hemorrhagic fever reported in Africa, Europe and Asia, during recent years, outbreaks have been recorded in Iran. The data on CCHF in children is not fully determined. This study was conducted to analyse the clinico-epidemiologic and outcome of this disease in children.

METHODS: During 1999 till 2006, 184 confirmed CCHF cases were admitted in BooAli hospital in Sistan province of Iran, of whom 34 cases were below age 18 years old, were included in this study. The diagnosis was confirmed through detection of IgM ELISA and/or genomic segment of PCR CCHF virus.

RESULTS: Out of 34 children with Crimean-Congo hemorrhagic fever (23 Male, 11 Female) with age range 5 to 18 years old, 29 patients (85%) were from rural area and tick bite was determined as risk factor for 23.5% of affected children. The most observed symptoms were fever (85.2%), myalgia (67.6%) and bleeding (61.7%). The high fever, confusion, bleeding from multiple sites, and presence of petechia/echymosis were higher in the patients who died than in surviving ones. Additionally, the mean value of ALT, AST, PTT, INR and Urea were also higher, and mean platelet count was lower in the patients who died. All the patients except two children were treated with Ribavirin. The recovery rate was higher in the children who treatment started earlier.

CONCLUSIONS: In children who suffered from CCHF in southeast of Iran, clinical features, factors influencing outcome of disease and risk factors were similar to other outbreak of this disease in adult patients in Iran. Treatment with oral Ribavirin was effective.

Topic: Viral infections

Paper number: 1085

Presentation type requested: Poster Presentation

GENETIC ANALYSIS OF HUMAN NOROVIRUSES DETECTED FROM ACUTE GASTROENTERITIS PATIENTS IN KYEONGGI, KOREA

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BACKGROUND AND AIMS: Recently, Noroviruses-related acute gastroenteritis outbreak cases are continuously reported in Kyeonggi, Korea and make significant threats of public health because of the large scale of outbreak and rapid transmission. In this study, genotypic distributions and genetic diversities of norovirus strains were analysed by RT-RNA and sequence analysis. **METHODS:** A total of 13,606 stool samples collected from patients with acute gastroenteritis, and sequences of the capsid region of 273 norovirus positive strains were analysed by automatic sequencing. We investigated sequence variations among genotypes by analysis of Megalign program. **RESULTS:** Nine of genogroup I and nine of genogroup II of norovirus strains were detected during 2001~2007 and the major genotypes were GII-4, GII-17, GII-1, and GII-5. We investigated that homologies of nucleotide sequence between different genogroup strains were less than 50% and homologies among other subtypes within the same genogroup were approximately 70%. therefore, Norovirus strains circulating in Kyeonggi, Korea have significant genetic diversity. **CONCLUSIONS:** Molecular epidemiological information and genetic materials associated with norovirus infections will be provided for investigators who are interested in development of diagnostic scheme and strategy of prevention of noroviruses in Kyeonggi, Korea.

Topic: Viral infections

Paper number: 1090

Presentation type requested: Poster Presentation

MEASLES - HOSPITALISATIONS AND COMPLICATIONS IN CHILDREN AND ADOLESCENTS IN GERMANY 2006

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BACKGROUND AND AIMS: Data on frequency of hospitalisation and type of complications due to measles are essential for the control and elimination of this communicable disease. The aim of this study is to describe the clinical spectrum of complications of children hospitalised with measles in the year 2006 in Germany. **METHODS:** Active surveillance on hospitalised measles cases up to age 16 years was performed through the German Paediatric Surveillance Unit (ESPED). Detailed information on hospitalisation and complications were reported by physicians in pediatric hospitals by means of questionnaires. **RESULTS:** In 2006 115 hospitalised measles cases were reported. Detailed information was obtained for 96 cases. 54 of 96 children (56 %) were male. The median age was 2.7 years (IQR: 1.1-8.9). The median hospital stay was 6 days (IQR: 4-8). The most frequent measles-associated symptoms were fever (94.8%), disturbance of the respiration (65.6%), feeding problems (44.8%) and gastrointestinal symptoms (26.0%). Pneumonia (54.2%), other bacterial infections (20.8%) and noticeable problems of the blood (19.8%) were the most frequent complications. Two cases of measles inclusion-body encephalitis were fatal.

13 children had one dose of measles vaccine, 4 children were immunised twice.

CONCLUSIONS: The current ESPED study allows an indirect estimate of the burden of complicated measles disease in Germany 2006. The data mainly reflect the impact of the large measles outbreak in North Rhine-Westphalia. The results show, that also in industrialised countries, measles still lead to severe complications. The data point out the importance of a widespread immunisation.

Topic: Viral infections

Paper number: 1092

Presentation type requested: Poster Presentation

DIAGNOSIS OF ROTAVIRUS INFECTIONS: SENSITIVITY AND SPECIFICITY OF A DETECTION TEST (VIKIA® BIOMÉRIEUX) AND OF AN ELISA ASSAY (DAKO®).

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BACKGROUND AND AIMS: To assess the sensitivity and specificity of a rapid detection test for rotavirus (VIKIA® – Biomérieux) and of an ELISA assay (DAKO®), as compared to a reference method: genotyping by RT-PCR. These 3 diagnosis methods were used during an epidemiological study. **METHODS:** The main objective of the study was to assess the incidence of rotavirus gastroenteritis in children under the age of 36 months attending day-care centres in Lyon. The study was a prospective, multicentric study carried out over the 2004-2005 epidemic season.

This study provided the additional opportunity to compare the results of a rapid detection test (VIKIA® – Biomérieux), an ELISA assay (DAKO®) and genotyping, on the same group of children.

RESULTS: The genotypic analysis was performed on 57 samples, in which 29 rotavirus strains were identified; a rapid detection test and ELISA assay provided positive results for 28 of those samples and one was negative for both. In 96.5% of cases, both methods were concordant with the genotypic analysis. As compared to genotyping, the sensitivity and specificity of the rapid detection test and ELISA assay were respectively 96.6% (CI 95% [83.0;99.9]) and 96.4% (CI 95% [81.6;99.9]). Both methods gave similar results in 93.6% of cases. **CONCLUSIONS:** The sensitivity and specificity of the rapid detection test (VIKIA®) and of an ELISA assay (DAKO®) are comparable and reliable (96.6% and 96.4%, respectively). The concordance between these different diagnosis methods could enable the use of a rapid detection test in primary or emergency care.

Topic: Viral infections

Paper number: 1095

Presentation type requested: Poster Presentation

SKIN MANIFESTATIONS OF MYCOPLASMA PNEUMONIAE AND VIRAL INFECTIONS IN HOSPITALIZED CHILDREN

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BACKGROUND AND AIMS: To evaluate epidemiology, clinical features and course of exanthems due to viral and Mycoplasma pneumoniae infections. **METHODS:** We studied retrospectively 46 children, aged from 5 months to 14 years old (median age: 4.3 years) with atypical exanthem due to viral or mycoplasmatic infection diagnosed by serology, during a two years period. Clinical characteristics of the disease as well as serum aminotransferases were recorded. **RESULTS:** The exanthem developed mainly during cold months in 52.1% and lasted from 1 to 15 days (mean duration: 3.6 days). 75.5% of cases were febrile with mean fever duration 4.5 days. Mild pruritus was present in 16 children. 71.7% of all patients exhibited symptoms of the upper respiratory tract, while 31.1% had pneumonia and 51.1% gastrointestinal symptoms. The main patterns manifested were: 51.1% macular and maculopapular, 19.5% urticarial, 11.1% vesicular, 8.8% maculopapular with petechiae, 4.4% erythema nodosum and 4.4% erythema multiforme. Petechiae and vesicles were the most common lesions observed in oral mucosa (10 out of 14 patients). The causative agent in 37.7% were respiratory viruses (RSV, adenovirus, influenza and parainfluenza), 35.5% herpesviruses, 31.1% enteroviruses, 15.2% Mycoplasma pneumoniae and 17.4% coinfections. Exanthems associated with herpesvirus were more prevalent in spring ($p=0.046$), while the maculopapular pattern tended to be more frequent in enteroviruses infections. Mycoplasmatic rashes were more frequently correlated with fever, prolonged duration and longer hospitalization time ($p=0.049$, $p=0.09$ and $p=0.051$, respectively). 26% of cases had elevated liver enzymes, but without further diagnostic help. **CONCLUSIONS:** Viral and mycoplasmatic exanthemas share common features, and usually are benign and self-limited.

Topic: Viral infections

Paper number: 1101

Presentation type requested: Poster Presentation

CLINICAL FINDINGS AND DIAGNOSIS OF MYOCARDITIS IN CHILDREN

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BACKGROUND AND AIMS: to determine, the frequency of various presenting symptoms and the sensitivity of clinical and laboratory investigations routinely available in children with myocarditis. **METHODS:** We performed a retrospective review of all patients < 16 years who were diagnosed as having myocarditis between September 2004 and September 2007 and who initially presented to an emergency department. Patients were categorized as having definite myocarditis (positive cardiac enzymes results) or probable myocarditis (diagnosis assigned by a pediatric cardiologist on the basis of history, physical examination). **RESULTS:** There were 11 cases of definite myocarditis and 10 cases of probable myocarditis. The age distribution was nonnormal, with peaks among children < or = 3 years and > or = 16 years of age. Of 12 patients who were seen by a physician before being diagnosed with myocarditis, 65% were originally diagnosed as having pneumonia or asthma. 29% had cardiac symptoms, and 6% had gastrointestinal symptoms. Although evidence of cardiac dysfunction was frequently present in the form of respiratory distress, only a minority of children had evidence of hepatomegaly or abnormal cardiac examination results. The sensitivities of electrocardiograms and chest radiographs as screening tests were 90% and 52%, respectively. Among laboratory tests studied, CK-MB measurement was the most sensitive (sensitivity: 85%). **CONCLUSIONS:** Children with myocarditis present with symptoms that can be mistaken for other types of illnesses; respiratory presentations were most common. When clinical suspicion of myocarditis exists, chest radiography alone is an insufficient screening test. All children should undergo electrocardiography. CK-MB testing may be a useful adjunctive investigation.

Topic: Viral infections

Paper number: 1128

Presentation type requested: Poster Presentation

KINETICS OF MATERNAL MEASLES NEUTRALIZING SERUM ANTIBODIES DECAY IN INFANTS IN FRANCE IN 2006

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BACKGROUND AND AIMS: To determine the kinetics of decline of maternal measles neutralizing antibodies (MmNAb) between 0 and 15 months of age in France - a well vaccinated measles vaccine coverage (around 80% for decades). **METHODS:** Prospective, multicentric study carried out in seven hospitals from October 2005 to January 2007. Infants born at term (≥ 37 weeks' amenorrhoea) and whose birth weight was > 2.6 kg could be included in the study. Infants who had previously been vaccinated against measles, had an history of measles or contact with a measles case within the last 3 weeks were not included.

MmNAb were determined using the PRN assay (Plaque Reduction Neutralisation) in a centralized laboratory at the Health Protection Agency in London, UK. The seroprotection threshold was defined as ≥ 120 mUI/ml.

RESULTS: 348 infants (median age 8.7 months) were evaluable. Geometric Mean Titers (GMT) of MmNAb were determined for the 140 sera with antibody titres over the detection limit.

Table shows GMT and proportion of infants with antibody titers \geq seroprotection threshold.

CONCLUSIONS: For the first time in France our data show, like in other well measles vaccinated countries, a huge decline of MmNAb in infants, who are no longer protected against measles between 6 and 12 months of age.



Topic: Viral infections

Paper number: 1130

Presentation type requested: Poster Presentation

KINETICS OF MATERNAL VARICELLA SERUM ANTIBODIES DECAY IN INFANTS IN FRANCE IN 2006

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BACKGROUND AND AIMS: To determine the kinetics of decline of maternal varicella antibodies between 0 and 15 months of age. **METHODS:** Prospective, multicentric study carried out in seven French hospitals from October 2005 to January 2007. Hospitalized Infants or consulting in hospital, who had a blood sample were included. Exclusion criteria were: prematurity <37 weeks of amenorrhoea; birth weight ≤ 2.6 kg; Infants who had previously been vaccinated against varicella, had an history of varicella, or who reported a contact with a varicella case within the last 3 weeks; immunodeficiency and blood transfusion or immune globulins.

Varicella antibodies were determined using the TRFIA assay (Time-Resolved Fluorescence Immuno-Assay), performed in a centralized laboratory at the Health Protection Agency in London, UK. Seroconversion threshold was defined as ≥ 150 mUI/ml.

RESULTS: 345 infants were evaluable (of which 51.1% were boys). The median age was 8.7 months (range: 0.03-15.6).

The Geometric Mean Titers (GMT) were respectively of 536, 266 and 181 mUI/ml for age groups [0;1 months[-[1;2 months[and [2;3 months[, and less than the seroconversion threshold for infants from 3 months of age.

The proportion of infants with varicella antibody titers \geq seroconversion threshold were respectively 95, 75, 75 and 50% for age groups [0;1 months[-[1;2 months[and [2;3 months[and [3;4 months[.

CONCLUSIONS: For the first time in France, we show that after the age of 6 months, infants are most probably no longer protected against varicella by maternal antibodies. This could explain partly serious forms of chicken pox disease in 6-24 months child old.

Topic: Viral infections

Paper number: 1131

Presentation type requested: Poster Presentation

CHANGING PATTERN OF ROTAVIRUS G GENOTYPE IN FRENCH CHILDREN: HIGH PREVALENCE OF G9 AND INCREASE OF G2 STRAINS

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BACKGROUND AND AIMS: Group A rotaviruses, especially the 5 genotypes G1–4 and G9, are the main viral causative agent of acute gastroenteritis in children. G9 strains are generally detected in less than 5% of infections in Europe. A epidemiological study previously conducted in France showed a changing pattern of rotavirus genotypes with the emergence of G9 strains. The present study was designed to evaluate the circulation of these specific strains in France. **METHODS:** This prospective study was conducted during the season 2006-07 in children under 5 years old consulting for acute diarrhoea at the paediatric emergency units in 10 University hospitals across France. Rotaviruses were detected by rapid tests and genotyped by RT-PCR on the basis of their outer capsid proteins VP4 (P type) and VP7 (G type). **RESULTS:** Genotyping of 521 rotaviruses showed that G1 genotypes (46.3%) were the predominant strains followed by G9 (21.1%) and G2 (10.2%). Most strains were associated with the P[8] genotype. Mixed infections, mostly G1/G9 associations, were found in 17.5% of stool samples. The distribution of genotypes was heterogeneous, regional frequencies regarding G1 and G9 ranged from 13.3% to 92.1% and from 1.8% to 46.7%, respectively. **CONCLUSIONS:** After their obvious prevalence during their emergence in season 2004-05 (65.9%), G9 strains remain the second most frequent genotype in the majority of the French Centres with a relatively high detection rate, and are also often involved in mixed infections with G1. The prevalence of G2 strains remains low but they have marked a frank progression during the last season.

Topic: Viral infections

Paper number: 1152

Presentation type requested: Poster Presentation

EPSTEIN-BARR VIRAEMIA AT DIAGNOSIS OF ACUTE LYMPHOBLASTIC LEUKAEMIA (ALL) IN THREE-YEAR-OLD CHILD

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BACKGROUND AND AIMS: The association between viral infections and haematological malignancies is documented in the literature particularly in the form of complications following chemotherapy. It has been suggested that viral infection plays a part in the aetiology of ALL but epidemiological studies have not provided firm evidence of this, and acute viral infection at the time of presentation of ALL has not been documented. **METHODS:** To evaluate the role of EBV viraemia in the aetiology and clinical course of ALL in our patient. **RESULTS:** A three-year-old immunocompetent boy presented with fever, pancytopenia, hepatosplenomegaly, maculopapular rash, tibial pain, raised CRP, and negative blood cultures. Viral investigations for hepatitis A, B, C and CMV were negative while EBNA IgG antibody was present indicating past infection. Quantitation of EBV DNA revealed 1.7 million copies/ml. Bone marrow aspiration revealed precursor B-cell ALL; the patient was enrolled in the UKALL 2003 clinical trial. He went into complete remission at the end of his induction phase and remains so one year later without evidence of EBV-driven lymphoproliferative disease. EBV DNA declined following his first course of chemotherapy to 700,000 copies/ml and thereafter monthly monitoring revealed extremely low levels below 175 copies/ml. **CONCLUSIONS:**

1. Determination of EBV immune status is not adequate in excluding high-level viraemia.
2. EBV activity should be determined by the quantitation of EBV DNA in blood.
3. Prompt documentation of high-level EBV viraemia might lead to modification of the usual treatment of ALL

Topic: Viral infections

Paper number: 1153

Presentation type requested: Oral Presentation

OCCURRENCE, TREATMENT AND FOLLOW-UP OF CHRONIC HEPATITIS B (HBV) AND HEPATITIS C (HCV) IN FINNISH CHILDREN DURING 1996-2006

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BACKGROUND AND AIMS: Reported incidences of acute hepatitis B (0.9/100 000) and hepatitis C (27/100 000) are low in Finland. The prevalence of HBsAg carriage is estimated to be 0.3%. Pregnant mothers are screened. HBV vaccine is recommended as part of national immunisation program to risk groups only. **METHODS:** To describe the patient population characters, disease progression and antiviral treatment, we retrospectively identified all children (<16) who used paediatric services due to chronic HBV or HCV infection in any of the hospitals in the Hospital district of Helsinki and Uusimaa (1.46 million, 28% of the population of Finland) during 1996-2006. Their hospital records were reviewed. **RESULTS:** 105 patients were identified. Of 66 children with HBV, 62 were born outside Finland, compared to 11 of 40 with HCV. In the HBV group 49 were infected perinatally, 3 because of friendship ritual, 1 parenterally and in 13 the route of infection was unknown. In the HCV group 27 were infected perinatally (mother's intravenous drug use (IDU)), 5 because of own IDU and 3 via blood transfusion in the 1980's. Only 16 patients received antiviral treatment, with a positive response seen in 4/13 HBV and 0/3 HCV patients. **CONCLUSIONS:** The prevalence of HBV and HCV is very low in children in Finland. HBV is detected mainly in immigrant children and HCV in children born to Finnish IDU mothers. During the research period few children received antiviral treatment and the response was modest. The results support antenatal and risk group based screening approach.

Topic: Viral infections

Paper number: 1155

Presentation type requested: Poster Presentation

HOW MUCH CLINICAL MUMPS ARE WE MISSING IN THE LABORATORY, ESPECIALLY IN THOSE PREVIOUSLY VACCINATED WITH MMR?

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BACKGROUND AND AIMS: Mumps is a disease preventable by immunization; however, outbreaks of mumps in UK have suggested that in parallel with declines in MMR uptake, young adults immunized in childhood in whose serum mumps IgG antibody is detectable, remain vulnerable to mumps. **METHODS:** Evaluation of the use of IgM and IgG (ELISA and CFT) assays to confirm mumps in patients with recent onset of parotid swelling. **RESULTS:** From 2003 to 2006, 597 sera were collected within a week of parotid swelling. In 259 sera (43%), IgM antibody presence confirmed mumps. In 338 sera (57%), mumps IgM was not detected; in most of these, low-level IgG antibody was detected. For 228/338, reports suggesting evidence of past infection or immunization were issued; no further sera were investigated. Convalescent sera were obtained in 110/338. In 68/110, there was no evidence of mumps indicating clinical misdiagnoses while in 42/110, mumps was confirmed by significant increases in IgG antibody by both ELISA and CFT; a history of MMR vaccination more than 10 years ago was documented in 38 of these 42. **CONCLUSIONS:** A Residual low-level IgG antibody following MMR immunization in childhood is not protective against subsequent mumps.

B Detectable IgM antibody is not consistently produced in all cases of clinical mumps particularly in subjects with a history of MMR immunization.

C Testing of paired serum samples is required for reliable serological confirmation in persons with clinical mumps who have pre-existing IgG antibodies.

D Further studies are required to evaluate the protective role of mumps antibody post-vaccination.

Topic: Viral infections

Paper number: 1164

Presentation type requested: Poster Presentation

A LATENT VARICELLA INFECTION THAT APPEARED WITH NEUROLOGICAL FINDINGS IN CHILDHOOD

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BACKGROUND AND AIMS: Varicella is a common infectious disease which rarely causes some central nervous system complications. We aimed to present a latent varicella case applied with neurological signs without chickenpox rash.
METHODS: A seven-year-old female patient was hospitalized to our clinic due to disability to step on her right leg and to walk during four days. On admission she was cooperative. It was not assigned fever, skin eruption, edema and cyanosis. Right hemiparesis and mild facial paralysis were determined on physical examination. Other cranial nerves were intact. Reflexes, deep and superficial sensorium evaluation and co-ordinating tests were normal. Meningeal irritation signs were not found.
RESULTS: Blood cell counts, erythrocyte sedimentation rate, C-reactive protein level, routine blood chemistry and review of peripheral blood smear were normal. Varicella-zoster virus IgM antibody in serum was positive.

Radiological studies performed because of focal neurological findings such as computed tomography (CT) and magnetic resonance imaging (MRI) were normal except sphenoidal sinusitis. A lumbar puncture revealed lucent cerebrospinal fluid (CSF): it contained 8 leukocytes/mm³ with totally lymphocytes, 20 erythrocyte/mm³, mild positive pandy reaction with 147 mg/dl of protein, 53 mg/dl of glucose (blood sugar 94 mg/dl).

CONCLUSIONS: The patient improved soon and discharged. She had no complaints on control examination. It can not be expounded the etiology of neurological symptoms such as facial paralysis, hemiparesis and ataxia in childhood. It must be considered that varicella infection included its latent form presence of this kind of findings.

Topic: Viral infections

Paper number: 1166

Presentation type requested: Poster Presentation

HENOCH SCHONLEIN PURPURA WITH VARICELLA INFECTION

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<pre>BACKGROUND AND AIMS:</pre>Henoch-Schönlein Purpura (HSP) is the most common vasculitis on childhood. Although its etiology have not yet been explained; infectious diseases may cause it. On the other hand chickenpox is an infectious disease that can appear with different complications. We want to present a case who suffered from HSP during rash period of Chickenpox, because of being uncommon.**<pre>METHODS:</pre>**Four-year-old male patient applied us with complaints of fever, widespread rash and painful swelling on the left knee. The fever and rash had started 3 days ago; and swelling of the knee started at the coming day.**<pre>RESULTS:</pre>**By physical examination we found typical varicella eruptions spreading whole body, and vesicles on the left conjunctiva. He had tenderness, swelling, increased heat and limited motion on his left knee. Normal values were found for blood cell count, erythrocyte sedimentation rate and C-reactive protein level. Varicella-Zoster IgM antibody was positive.

We followed up him as outpatient with systemic antiviral (aciclovir), antihistaminic and antipiretic medications. On the sixth day he turned to us with different rash started from the gluteal region radiating through lower extremities, and swelling around the left eye.

<pre>CONCLUSIONS:</pre>The latter rash was pink-purple, palpable, not itchy and not discolored on pressure. It was considered as HSP because of characteristic skin eruption. The chickenpox rash had crusted. Ophthalmic examination was normal. It was thought that the edema around the eye was soft tissue swelling. The arthritis had improved that time. Urinalysis and fecal occult-blood testing were normal. After seven days the patient recovered completely.

Topic: Viral infections

Paper number: 1201

Presentation type requested: Poster Presentation

**EPIDEMIOLOGICAL PROFILE OF ROTAVIRUS INFECTION IN WESTERN SIBERIA, RUSSIA, JULY 2003 -
DECEMBER 2007: DIVERSITY OF GROUP A ROTAVIRUS GENOTYPES**

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BACKGROUND AND AIMS: The purpose of this study was to determine the genotypes diversity of rotavirus in Novosibirsk, Russia from July 2003 through December 2007. **METHODS:** A total of 3480 stool specimens from children <3 years of age hospitalized for acute gastroenteritis at Municipal Children's Hospital were screened for rotavirus by ELISA and RT-PCR. 50% of rotavirus isolates were characterized by RT-PCR.

RESULTS: 32.4% specimens were positive for group A rotavirus. Only 5.8% of hospitalizations involved infants <3 months of age. Rotavirus diarrhea most frequently occurred in children 6-17 months of age (84.9%). Rotavirus diarrhea occurred year-round, but was predominant from November through May. From July 2003 through June 2004 the most prevalent strain was P[8]G1 (51.8%), followed by strains P[8]G9 (19.3%), P[4]G2 (6.1%) and P[8]G4 (2.4%). Strains P[8]G1 (53.5%), P[8]G3 (13.5%), P[4]G2 (8.2%), P[8]G4 (5.3%) and P[8]G9 (4.7%) were isolated from July 2005 through June 2006. From July 2006 through June 2007 strains P[8]G1 (66.3%), P[8]G3 (10.6%), P[4]G2 (4.4%) and P[8]G4 (3.8%) were occurred. Strains P[8]G1 (54.8%), P[8]G3 (11.3%), P[4]G2 (6.5%) and P[8]G4 (1.6%) were isolated in Novosibirsk from July through December 2007. Whereas strains P[8]G1 (47.5%), P[4]G2 (9.1%) and P[8]G4 (8.1%) were isolated in Omsk from January through November 2007. **CONCLUSIONS:** The results of this study showed that P[8]G1 was the most common strain detected in Western Siberia from 2003 to 2007. Genotype P[8]G9 did not occurred from August 2006 in Novosibirsk and in the course of 2007 in Omsk. Genotype P[8]G3 did not observed from July 2003 to June 2004 in Novosibirsk.

Topic: Viral infections

Paper number: 1203

Presentation type requested: Poster Presentation

VARICELLA ZOSTER VIRUS (VZV) CENTRAL NERVOUS SYSTEM (CNS) INFECTION IN A 12 YEAR OLD BOY WITH SEIZURE.

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BACKGROUND AND AIMS: Neurologic complications after primary VZV infection or after reactivation are acute cerebellar Ataxia, Encephalitis, Vasculopathy of smaller or larger vessels, Meningitis or even rarer manifestations as Myelitis, Ventriculitis or cerebral infarction after vasculitis. Diagnostic workup in the case of suspected CNS-infection includes cerebral imaging and detection of VZV-DNA by polymerase chain reaction (PCR) and anti-VZV antibodies in cerebrospinal fluid (CSF). **METHODS:** We report the case of a 12 year old boy who was admitted with his first generalized tonic-clonic seizure after 2 weeks of fatigue and recurrent cephalgia and a non-specific febrile disease 10 days ago. His long term history revealed a near drowning with cardiopulmonary resuscitation one year ago and an attention deficit and aggressive disorder for some years. A primary varicella-infection was reported with the age of 3 or 5 years.

After admission the cranial MRI showed a suspicious lesion with hemorrhagic components in the right temporal lobe (1,5x2,5x2 cm) with perifocal oedematous signal alterations but no alterations in MRI angiography. Laboratory results of blood and CSF showed signs of VZV infection (liquorpleocytosis, positive VZV-index, VZV-Antibodies in CSF) with two times negative CSF-VZV-PCR. Antiviral therapy with aciclovir was started and the further course of the disease was unproblematic. **RESULTS:** VZV-CNS infection is very rare in children with different possibilities of manifestation. **CONCLUSIONS:** Like in our case the VZV-encephalitis with a possible associated vasculopathy is still a diagnostic challenge whereas the therapeutic consequences are limited to antiviral and symptomatic therapy.

Topic: Viral infections

Paper number: 1206

Presentation type requested: Poster Presentation

INFECTION BY HUMAN BOCAVIRUS IN BRAZIL

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BACKGROUND AND AIMS: Human Bocavirus (HBoV) was first detected in nasopharyngeal aspirates of patients with respiratory symptoms and described in 2005 by Allander et al. Several clinical manifestations have been related to HBoV, being acute respiratory infection the most described. We aim to report the detection of HBoV in nasopharyngeal aspirates of children related to clinical manifestations.**METHODS:** Detection of HBoV by PCR in nasopharyngeal aspirates of 11 Brazilian children with respiratory infection.**RESULTS:** Between September and November 2007 we tested 11 samples, with detection of HBoV in 4 patients. Three of the positive cases had acute respiratory symptoms and 2 had diarrhea. One child had a myocarditis and no respiratory or gastrointestinal symptoms. Coinfection was present in two cases one with adenovirus and one with human metapneumovirus.**CONCLUSIONS:** Human Bocavirus was found in nasopharyngeal aspirate of children in São Paulo, Brazil, as in other countries. Coinfection with other respiratory virus is frequent and occurred in the analyzed samples. The clinical manifestations were an association of gastrointestinal and respiratory manifestations. One child manifested myocarditis that is a clinical manifestation not related before.

Topic: Viral infections

Paper number: 1209

Presentation type requested: Poster Presentation

RECURRENT RESPIRATORY PAPILLOMATOSIS IN CHILDREN: DIAGNOSIS AND TREATMENT.

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BACKGROUND AND AIMS: Recurrent respiratory papillomatosis (RRP) can be detected in young children, up to 5 years old. It is characterized by papillomatous growths that obstruct the airway. The main complications are: spread into the lower respiratory tract and possible malignant transformation. We report two cases of RRP with lung involvement.

METHODS: Identification of types of HPV in lung and larynx fragments by PCR. **RESULTS:** A 12 year old girl and a 13 year old boy with RRP diagnosed in the first year of life, presenting hoarseness, stridor and respiratory distress. Papillomatosis was confirmed histologically. They underwent several endoscopic removals of the papillomas to relieve respiratory symptoms, with high rate of recurrence. Recently were detected lung nodules on chest radiography confirmed by CT of the thorax in both children. Fragments of laryngeal and lung lesions detected human papilloma virus (HPV) typed by PCR and revealed types 6 and 11. Treatment is being done with interferon 2A and systemic Cidofovir for 3 months with reduction of papillomas in the larynx and no new lesions in the lung. **CONCLUSIONS:** RRP is mainly caused by HPV type 6 and 11. When it reaches the low respiratory tract it is cause of great morbidity and risk of transformation into squamous cell carcinoma. Treatment is still limited with poor outcomes, and systemic Cidofovir may be a new therapy weapon. With the development of HPV vaccines, there is a possibility of preventing RRP in addition to the prevention of cervical cancer.

Topic: Viral infections

Paper number: 1214

Presentation type requested: Poster Presentation

PARVOVIRUS B-19 INFECTION ASSOCIATED HEPATITIS, ENCEPHALITIS AND ACUTE RENAL FAILURE

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BACKGROUND AND AIMS: Human Parvovirus B19, pathogenic only for humans, can cause different clinical conditions. It can be the cause of erythema infectiosum as well as encephalitis, myocarditis, hepatitis, vasculitis and glomerulonephritis. We report a five-year-old boy with Parvovirus B19 infection presenting with encephalitis, acute renal failure and hepatitis. He had leucopenia, thrombocytopenia, Parvovirus B19 IgM seropositivity. Parvovirus DNA was positive in blood and he was diagnosed as acute Parvovirus B19 infection. He recovered without any sequelae.

METHODS: A previously healthy five-year-old boy was admitted to our clinic with fever, vomiting, diarrhea. He was disoriented and confused, had inspiratory stridor, no signs of dehydration and meningeal irritation.

RESULTS: The laboratory parameters were: leucocyte: 11000/mm³, PLT: 333000/mm³, CRP: 16.7 mg/dl, BUN: 62 mg/dl, creatinin: 2.4 mg/dl, AST: 180 IU/ml, ALT: 107 IU/ml, calcium: 5.9 mg/dl, phosphorus: 7.3 mg/dl, metabolic acidosis in blood gas analysis, GFR: 25 ml/dk/1.73 m². The stool microscopy and culture was negative. Cranial CT was normal but lumbar puncture revealed encephalitis. Seftriaxone treatment was initiated. At the third day, recovery of acute renal failure and development leucopenia and thrombocytopenia occurred. While evaluating the etiology of the elevated transaminases we found serum Parvovirus B-19 IgM positive. No microorganism was isolated from the CSF, blood and urine cultures. Parvovirus B-19 DNA was positive in blood. On the 10th day the patient was fully recovered.

CONCLUSIONS: Parvovirus B-19 can be the cause of responsible of different clinical conditions like hepatitis, encephalitis and acute renal failure. Therefore it is wise to think it in differential diagnosis

Topic: Viral infections

Paper number: 1224

Presentation type requested: Poster Presentation

CONCURRENT DETECTION OF HUMAN HERPESVIRUS TYPE 6 AND PARVOVIRUS B19 IN A YOUNG INFANT

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BACKGROUND AND AIMS: Fifth (erythema infectiosum, human parvovirus) and sixth (roseola infantum or exanthema subitum, herpesvirus 6) diseases are common rash illnesses of childhood. Exanthema subitum rarely has been observed in infants below 3 months of age. Coinfections with different viruses have been reported, nevertheless, detection of IgMs to parvovirus B19 during acute HHV-6 infection or vice versa is uncommon. **METHODS:** We report a case of coinfection with HHV-6 and parvovirus B19 by simultaneous detection of IgMs to both viruses. **RESULTS:** A two month old chinese girl presented with a generalized maculopapular skin rash, normal body temperature and without any other clinical symptom or sign of infectious disease. Physical examination revealed a well-nourished infant without any abnormal findings such as hepatomegaly or lymphadenopathy. Blood picture at initial admission showed 10.830/mm³ leukocytes with normal red blood cells and thrombocytes. Differential blood picture showed neutropenia with absolute neutrophils count 217/mm³, eosinophilia with 11% (1191/mm³) and lymphocytosis with 79% (8556/mm³). Values resolved within two weeks to normal. The generalized maculopapular skin rash diminished at day three and disappeared after one week. The results of virological examination revealed positive IgM antibodies to HHV6 by isoimmune fluorescein testing and Parvovirus B19 by enzyme immunoassay. IgG antibodies were both negative. Results of other antibody tests including Coxsackie A and B Virus, Enteroviruses, Epstein Barr Virus and Mumps were negative. **CONCLUSIONS:** Further follow-up and virological tests are necessary to confirm true coinfection with HHV-6 and parvovirus B19.

Topic: Viral infections

Paper number: 1232

Presentation type requested: Poster Presentation

GENERALIZED PETECHIAL ERUPTION BY PARVOVIRUS B19

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BACKGROUND AND AIMS: There is a broad spectrum of clinical syndromes associated with Parvovirus B19, being erythema infectiosum the most common clinical manifestation in childhood. Parvovirus B19 is also related to Papular Purpuric Gloves and Socks Syndrome (PPGSS), acropetechial syndrome and a generalized petechial eruption. We report a case of generalized petechial eruption in a child diagnosed by Semi-Nested PCR

METHODS: Semi-Nested PCR assay using primers E1, E6 and I5 **RESULTS:** A 13 year old girl developed a pruriginous petechial purpuric rash first in hands and feet associated with fever. She referred a sore throat and malaise. On physical examination there was a petechial purpuric exanthema on dorsum and palm of hands, dorsum and sole of feet, abdomen, thorax, axillar area, genital region and face. The lips were with hyperemia and edema. The oral cavity had vesicular eruptions and a petechial enanthema. No other abnormalities were found. Laboratory findings demonstrated leukopenia, thrombocytopenia, high C reactive protein and erythrocyte sedimentation rate. Other laboratory tests were normal. Blood and oral swab cultures were negative. Parvovirus B19 was identified by semi-nested polymerized chain reaction (PCR) and was performed sequence analysis. The diagnosis of generalized petechial eruption caused by Parvovirus B19 was made. Epstein Barr virus (EBV), cytomegalovirus (CMV), herpes virus, Rickettsia rickettsii were negative in PCR. **CONCLUSIONS:** Petechial eruption can be caused by different virus, such as Parvovirus B19, CMV, EBV, Herpes 6, and others. Polymerized chain reaction allows a fast and precise determination of the etiology of the disease.

Topic: Viral infections

Paper number: 1241

Presentation type requested: Poster Presentation

INFLUENZA IN INFANTS - EXPERIENCE WITH OSELTAMIVIR

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BACKGROUND AND AIMS: Overall children are more frequently infected with influenza than adults. Clinical diagnosis is difficult especially in infants unless the disease shows an epidemic outbreak in the community.

Osetamivir proved to be effective in children older than one year. Here we present data which show its usefulness in younger children also.

METHODS: During influenza seasons from 2003 to 2007 overall 157 infants were hospitalised with influenza proven by Influenza A/B Rapid Test. **RESULTS:** Mean age was 6.3 ± 3.3 months. First symptoms occurred in less than 48 hours before admission. Main clinical findings and symptoms besides fever (38.8 ± 0.9 °C) were: rhinitis (n=134), pharyngitis (n=132), cough (n=114), difficult feeding (n=73), otitis (n=39), wheezing (n=9) and febrile seizures (n=7). Laboratory results: CRP 12 ± 16 mg/l and leucocyte count 10.200 ± 5.800 /ml. 11 infants were on antibiotics before admission. 5 patients presented initially with CRP > 50 mg/l indicating an accompanying bacterial infection.

Therapy with osetamivir 2×2 mg/kg body weight was started after having obtained informed consent by the guardians. Fever stopped in 128/157 infants within 36 hours and in 136/157 infants within 48 hours after start of therapy. Following symptoms occurred during the course of treatment: vomiting (n=62) and diarrhoea (n=34). Secondary infections requiring antibiotic treatment were observed in 9 infants.

The complete course of treatment (5 days) was accomplished in all but one infant.

CONCLUSIONS: Osetamivir in infants is as effective and safe as in older children. Since infants are particularly vulnerable to influenza the approval of osetamivir for this age group by health authorities is desirable.

Topic: Viral infections

Paper number: 1243

Presentation type requested: Poster Presentation

VARICELLA-ZOSTER VIRUS SEROPREVALENCE IN NORTHERN GREECE

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BACKGROUND AND AIMS: Varicella is a highly communicable disease caused by the varicella-zoster virus (VZV). The aim of the present study was to obtain data on VZV epidemiology as part of evaluation of vaccination strategies with live, attenuated vaccines in Greece. **METHODS:** A cross-sectional, age-stratified study was conducted in a representative population sample in Northern Greece, between years 2005 and 2007. An Enzyme-linked Immunosorbent Assay was used. Relative frequencies and confidence intervals were computed with SPSS v.14. To compare proportions, the chi-squared test and the Fisher's exact test were applied. **RESULTS:** 243 healthy individuals participated. The frequency of positive samples declined from 100% during the first semester of life to 47% (95% CI; 29-65%) in the 05-4.9 years old. Afterwards, antibodies prevalence increased from 69% (95% CI; 54-84%) among the 5-12 years old to 93% (95% CI; 80-100%) in the 13-18 years old and 95% (95% CI; 88-100%) in the 31-40 years old. Individuals 41-60 years were 100% seropositive. The seroprevalence rate for the 13-18 and the >60 years old groups were 90% (95% CI; 81-99%) and 97% (95% CI; 91-100%), respectively. Women at childbearing age (19-30 plus 31-40) were 90% (95% CI; 80-100%) and 97% (95% CI; 91-100%) seropositive. No gender difference was found. **CONCLUSIONS:** After loss of maternal antibodies, young children and adolescents, remain extremely vulnerable to varicella. As VZV infection is more severe and its complications more frequent among young adults and during pregnancy, special attention should be paid to strengthen two-dose vaccination programmes and improve surveillance schemes.

Topic: Viral infections

Paper number: 1261

Presentation type requested: Poster Presentation

DEVELOPMENT AND CLINICAL EVALUATION OF RAPID REAL-TIME RT-PCR ASSAYS FOR DETECTION OF INFLUENZA A AND B VIRUSES

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BACKGROUND AND AIMS: Influenza viruses type A (H3N2 and H1N1) and B are the most prevalently circulating human strains. However, an increase in confirmed cases of high pathogenic H5N1 in humans has raised concerns of a pandemic underscoring the need for rapid, point of contact detection. **METHODS:** In this study, we describe development/evaluation of highly sensitive and specific real-time RT-PCR (rRT-PCR) assays for type, i.e., influenza A and B, and subtype, i.e., H1, H3, and H5 specific assays and subsequent evaluation using: 1) archived viral reference strains, 2) human cultures, and 3) primary (throat swab/nasal wash) clinical specimens. **RESULTS:** Type A and B assays detected all 16 (H1-H16) influenza A and both circulating B lineages (Yamagata and Victoria), respectively. Compared to 'gold standard' culture confirmation, 180/180 shell vial cultures (100%) were correctly typed and subtyped in research blinded fashion using real-time RT-PCR analysis described in this report. Furthermore, RT-PCR analysis of 167 uncultured, primary specimens revealed an overall specificity of 100% (no cross-hybridization) and sensitivity of 90.4% (151/167 uncultured specimens) from archived (1999-2006) uncultured samples compared to subsequent confirmation of these samples by culture. **CONCLUSIONS:** These influenza primer and probes have been adapted for use in an optimized, all-inclusive thermostable reagent blend and can be utilized on several real-time PCR thermocyclers including field-deployable instruments. Using the H5-specific assay, the optimized reagent blend was stable at ambient temperature for 30 days and capable of detecting < 10 viral copies. These assays could offer significant utility for rapid, point of care screening arising from a pandemic influenza outbreak.

Topic: Viral infections

Paper number: 1284

Presentation type requested: Poster Presentation

IMPACT OF RAPID INFLUENZA TESTING ON THE CLINICAL MANAGEMENT OF INFLUENZA IN GERMAN PAEDIATRIC CENTRES: RESULTS FROM A PROSPECTIVE SURVEY

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BACKGROUND AND AIMS: Rapid tests are now widely available to assist the diagnosis of influenza. Widespread adoption may optimise the appropriate use of antiviral and antibacterial agents. We report the findings from a prospective survey that explored physician prescribing behaviours in 772 German paediatric centres where rapid influenza tests were and were not available. **METHODS:** Physician behaviours relating to the clinical management of children 1–12 years with influenza-like illness (ILI; fever [≥38°C] and dry cough) were surveyed during periods of increased influenza activity between 15 January 2007 and 30 April 2007. Using a standardised questionnaire, the clinical features of each child's ILI and subsequent clinical diagnosis were documented. When available, the outcome of a Clearview Exact Influenza A+B rapid test was also noted. Prescriptions for antiviral agents and antibacterial medications were recorded. **RESULTS:** In total, 16,907 questionnaires were completed. After fever and cough, fatigue (83.0%) and rhinorrhea (73.7%) were the most commonly reported symptoms. Influenza was the most frequent clinical diagnosis overall (56.8% [9596/16907] of children). In cases where the diagnosis of influenza was based on symptoms alone, the antiviral medication oseltamivir was prescribed in 24.6% (178/725) of cases. When the diagnosis was supported by a positive influenza rapid test, oseltamivir was prescribed in 60.1% (4618/7685) of cases. Antibiotics were significantly less commonly prescribed to children who were influenza positive by rapid test (3.5% [271/7685] vs 17.2% [125/725] for positive clinical diagnosis alone; $X^2 < 0.0001$). **CONCLUSIONS:** In German paediatric centres, rapid influenza testing encouraged the rational use of antivirals and discouraged inappropriate prescribing of antibacterials.

Topic: Viral infections

Paper number: 1290

Presentation type requested: Oral Presentation

VARICELLA–ZOSTER VIRUS IN THE UK: CO-CIRCULATION OF STRAINS ARE SEEN IN ONE SEASON

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BACKGROUND AND AIMS: There are four main genotypes of Varicella-Zoster Virus (VZV). Genotype A is found in Africa and Asia, genotypes B and C in European countries and genotype J in Far-East Asia. In the UK, opportunistic samples have shown the prevalence of all four genotypes. As little is known regarding the transmission and phenotype of these strains we conducted a prospective study looking at VZV epidemiology in 5 tertiary paediatric centres throughout the UK. **METHODS:** Patient data, vesicular fluid and salivary swabs were collected from children with chickenpox. A pyrosequencing methodology, sensitive to low copy number DNA, was developed to ascertain the genotype. **RESULTS:** Results of 70 children recruited between March 2004 and March 2007 are summarized below.

- The European genotype C was most prevalent in the UK (45% of all isolates) followed by genotype A (32% of isolates). The pattern of prevalence of the different strains has not altered much over the past decade.
- Eighty percent of patients infected with genotype A resided in London where a large immigrant population resides.
- All strains were found to co-circulate at the same time period in the same part of UK. **CONCLUSIONS:** Co-circulation is most parsimoniously explained by repeated, independent introductions of virus into a susceptible population. Sources for the different strains of VZV in an outbreak could be from imported cases, from cases of zoster or indeed, based on more recent data, from asymptomatic shedding of virus. The likelihood of these models, its implications for vaccine policies and surveillance are all discussed.

Topic: Viral infections

Paper number: 1292

Presentation type requested: Poster Presentation

HEPATITIS B SEROPREVALANCE AND IMMUNIZATION STATUS OF CHILDREN AGED BETWEEN 9 MONTHS-8 YEARS OLD

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BACKGROUND AND AIMS: We aimed to evaluate the hepatitis B seroprevalance and immunization status of children aged between 9 months- 8 years old.
METHODS: Hepatitis B seroprevalance and immunization status of 302 patients, who were admitted to İstanbul Zeynep Kamil Maternity and Children Hospital, Department of Pediatrics between May-September 2007 were investigated for hepatitis B seropozitivity (HBsAg, Anti- HBsAg, Anti HBc IgG) and rewieving their immunization charts.
RESULTS: The seropositivity rates of HBsAg, anti HBsAg, anti HBc IgG were 1%, 83.1% and 2.8% respectively. 82.5% of the patients recieved 3 doses, 1.7% recieved 2 doses and 2.0% had only one dose of Hepatitis B vaccine, 13.9% of children were unvaccinated.

The patients were divided into three groups according to their age (9months-3 years as group I, 3-5 years as group II, 5-8 years as group III). In group III, the rate of children who had at least one dose of hepatitis B vaccine was 76.2%, which was significantly lower than group I (92.3%) and group II (93.4%).

The immunization rates of children in lower socioeconomic status were significantly lower than the average and higher socioeconomic status.

Anti HBsAg seropositivity was lower in group III (73%) than group I (90.4%) and group II (89.5%) ($p < 0.01$).

CONCLUSIONS: After National Routine Vaccination Programm for hepatitis B, which started in 1998, hepatitis B seropositivity rates decreased and the immunization rates increased in Turkiye.

Topic: Viral infections

Paper number: 1309

Presentation type requested: Poster Presentation

DIAGNOSIS OF INFLUENZA A&B IN CHILDREN WITH RAPID TEST

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BACKGROUND AND AIMS: Influenza infection is the 6th cause of death in the world. The next pandemic will be happen in every time. We can not differentiate the influenza from other respiratory virus upon clinical signs alone .

Objective:To determine the frequency of influenza antigen in pharynx of children with URI **METHODS:**A cross sectional /descriptive study done in pediatrics clinic during 2006-2007.we studied 152children aged<14 yearswithURI.

Influ-A&B Respi-Strip test in pharyngeal samples of all cases were done.Chi square values CI 95%, $p<0.05$ were calculated for all categorical variables.

RESULTS:The mean age of cases was59.4 months (SD= 45.3). 59/2% male ;40/8% female;previous antibiotic prescription in 42/7%of cases ;signs of URT in 46.3% ;fever in 66.4% ;AGE in 13.4 % ;conjunctivitis in 2% ;abdominal pain in 15.4 % ;throat pain in 67.8%;cervical LN. 14.1%;15.% of cases had purulent exudates and 6% had petechia respectively.

Rapid test for influenza was positive in 10.6% of cases.Mean age in Influenza cases was 80months .It is not different with mean age(59 months) in non influenza cases $p<0.09$

Rapid influenza test in cases related to presence of fever and previous antibiotic usage. $p=0.002,005$

CONCLUSIONS:Although this study was not done in epidemic period for influenza,we detected influenza virus as ethiology in 10.6% of upper respiratory infection in children. Mean age for influenza cases was 7 years. Total cost for prevention and treatment of influenza are high.Drug resistance in influenza virus is problematic.

With massive vaccination in children at least in high risk cases,near 11 percent decreasment inURI will be achieved in non epidemic period.

Topic: Viral infections

Paper number: 1312

Presentation type requested: Poster Presentation

PNEUMONIA DUE TO PARAINFLUENZA VIRUSES IN NEWBORN

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BACKGROUND AND AIMS: Parainfluenza viruses are common causes of respiratory illness in infants and young children. They can cause a spectrum of upper and lower respiratory tract illnesses, but are particularly associated with laryngotracheitis, bronchitis and croup. Most parainfluenza virus infections are confined to the upper respiratory tract. The generally mild appearing illness is belied by a spectrum of rarer but more serious illnesses that result in hospitalization. The parainfluenza viruses account for 50% of hospitalizations for croup and 15% of cases of bronchiolitis and pneumonia. In this study we aimed to assess Parainfluenza infections among newborns hospitalized for pneumonia.

METHODS: Viral serology in 79 nasopharyngeal aspirate specimens of 131 newborns with pneumonia was determined. The nasopharyngeal aspirate had been analyzed with IFA for RSV, Parainfluenza, Influenza and Adenovirus.

RESULTS: Parainfluenza virus was detected in 5 (6%) newborns, while no causing agent was identified in 35 (44%) cases. All the newborns with parainfluenza infection were female. The time of hospital admission was winter in 3 cases, summer in one case and spring in one case. All patients had the complaint of cough, two newborn had vomiting concomitantly. Four cases had infiltration in chest X-ray. C-reactive protein levels were normal in all Parainfluenza infected patients. All patients recovered without any complication.

CONCLUSIONS: If nasopharyngeal aspirates of newborns with lower respiratory tract infections can be analysed routinely by detection of viral etiology, unnecessary antibiotic use might be prevented and hospital stay can also be shortened.

Topic: Viral infections

Paper number: 1334

Presentation type requested: Poster Presentation

INFLUENZA IN NEONATAL PNEUMONIA

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BACKGROUND AND AIMS: Influenza virus infections can cause a broad array of respiratory illnesses that are responsible for significant morbidity and mortality in children on a yearly basis. Influenza types A and B cause predominantly respiratory illness. The predominant symptoms may localize anywhere in the respiratory tract, producing an isolated upper respiratory tract illness, croup, bronchiolitis or pneumonia. More than any other respiratory virus, systemic signs like high temperature and malaise accompany influenza. In this study we aimed to assess Influenza infections among newborns hospitalized for pneumonia.

METHODS: Viral serology in 79 nasopharyngeal aspirate specimens of 131 newborns with pneumonia was determined. The nasopharyngeal aspirate had been analyzed with IFA for RSV, Parainfluenza, Influenza and Adenovirus.

RESULTS: Influenza was detected in 11 (14%) newborns while no causing agent was identified in 35(44%) cases. Seasonal pattern in the time of hospital admission was 7 in winter and 2 in fall. Six of the Influenza positive patients were male. All patients complained of cough, two newborn had vomiting and another two had fever concomitantly. Eight patients had infiltrations in their chest X-ray. C-reactive protein was slightly elevated in four patients and in the normal range in 7 patients. All patients recovered without any complication.

CONCLUSIONS: Influenza virus infections must be kept in mind in neonatal lower tract infections especially when associated with fever and malaise. Investigation of viral etiology in nasopharyngeal aspirates of newborns with lower respiratory tract infections, can prevent unnecessary antibiotic use.

Topic: Viral infections

Paper number: 1341

Presentation type requested: Poster Presentation

RSV IN NEONATAL PNEUMONIA

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BACKGROUND AND AIMS: Respiratory Syncytial virus (RSV) is the major cause of bronchiolitis and pneumonia in children younger than 1 yr of age. It is the most important respiratory tract pathogen of early childhood. RSV is responsible for 45-75% of cases of bronchiolitis, 15-25% of childhood pneumonias and 6-8% of cases of croup. In this study we aimed to assess RSV infections among newborns hospitalized for pneumonia.

METHODS: Viral serology in 79 nasopharyngeal aspirate specimens of 131 newborns with pneumonia was determined. The nasopharyngeal aspirate had been analyzed with IFA for RSV.

RESULTS: RSV was detected in 19 (24%) cases, while no causing agent was identified in 35 (44%) patients. The time of hospital admission was winter in 16 cases, fall in two cases and spring in one case. Three of 19 patients were female. All patients were term newborn. All patients had complained of cough, three newborns had fever concomitantly. 17 newborn infected with RSV had infiltrations in their chest X-ray. C-reactive protein was positive in four cases, the other newborns had normal levels of C-reactive protein. All patients recovered without any complication.

CONCLUSIONS: RSV infection should be suspected from the clinical picture, the season of the year, the presence of a typical outbreak at the time and the presence of colds in older household contacts. We think it also important to analyze the nasopharyngeal aspirates of newborns with lower respiratory tract infections, because by detection of a virus infection, there will be a reduction in antibiotic usage and hospital stay.

Topic: Viral infections

Paper number: 1344

Presentation type requested: Poster Presentation

PNEUMONIA DUE TO ADENOVIRUS INFECTION IN NEWBORN

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BACKGROUND AND AIMS: Adenoviruses cause %5-11% of acute respiratory disease in infants plus a wide array of other syndromes, including pharyngoconjunctival fever, follicular conjunctivitis, epidemic keratoconjunctivitis, myocarditis, hemorrhagic cystitis, acute diarrhea, intussusception and encephalomyelitis. Adenoviral infections are distributed worldwide. They occur year around but are most prevalent in spring and early summer and again in midwinter. In this study we aimed to assess Adenovirus infections among newborns hospitalized for pneumonia.

METHODS: Viral serology was determined in 79 nasopharyngeal aspirate specimens of 131 newborns with pneumonia. The nasopharyngeal aspirate had been analyzed with IFA for Adenovirus.

RESULTS: Adenovirus was detected in 5 (6%) newborns while no causing agent was identified in 35 (44%) cases. All the newborns with adenovirus infection were male. Seasonal pattern in the time of hospital admission was 3 in winter and 2 in spring. All 5 newborns with adenovirus infection had infiltrations in their chest X-ray. C-reactive protein levels were normal in all 5 patients. Nebulized salbutamol was performed in two patients. Conjunctivitis was reported in one case. All patients recovered without any complication.

CONCLUSIONS: Adenovirus infections must be kept in mind in neonatal lower respiratory tract infections especially when associated with diarrhea and conjunctivitis. By detection of viral etiology in nasopharyngeal aspirates of newborns with lower respiratory tract infections, not only unnecessary antibiotic use might be prevented, but also hospital stay could also be shortened

Topic: Viral infections

Paper number: 1347

Presentation type requested: Poster Presentation

REFRACTORY SEPTIC FEVER AND PANCYTOPENIA ON ANTILEUCEMIC MAINTENANCE THERAPY CAUSED BY MASSIVE HEMOPHAGOCYTOSIS

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<pre>BACKGROUND AND AIMS:</pre>Antileukemic maintenance treatment is frequently associated with various infections, however prolonged myelodepression with refractory septic fever should alert for different causes.

<pre>METHODS:</pre>We report on three children (male = 1, female = 2; age at diagnosis 0.5, 16, 17 years) who developed septic fever refractory to antibiotics and antimycotics with transfusion dependent severe pancytopenia. Underlying malignancies were acute lymphoblastic

leukemia (ALL , n= 1) and acute myeloid leukemia (AML , n=2) .All cases had increased LDH (701, 1407, 372 U/l) .In two children TNF α was measured (285, 116.9, n= 0.0-15 pg/ml) as well as s-IL-2-receptor (21.840, >20.000, n= 680-2130pg/ml) triglycerides (420, 784, n= - 150mg/dl) and ferritin (39618, 35520, n= 6.0-159ng/ml). FACS analysis measured in one patient a severely depressed NK-cell number with disproportionally high numbers of monocytes. Bone marrow aspiration in all patients showed massive hemophagocytosis. PCR revealed Influenza A, Epstein Barr and Parvo-B19-virus, respectively. Antiviral treatment and immunoglobulines were given in combination with dexamethason.In addition one patient received vepeside and one patient infliximab.

<pre>RESULTS:</pre>Two of three patients died 2 and 47 days after diagnosis of hemophagocytosis. Patient 3 recovered after immediate application of infliximab.**<pre>CONCLUSIONS:</pre>**In patients on antileukemic maintenance therapy developing prolonged septic fever with pancytopenia refractory to antimicrobials differentialdiagnosis should include hemophagocytic syndrome in order to start immediate specific treatment. The role of the biologicals has to be determined.

Topic: Viral infections

Paper number: 1349

Presentation type requested: Poster Presentation

HEPATITIS C VIRUS MOTHER-TO-CHILD TRANSMISSION IN A COHORT OF 154 MOTHER-INFANT PAIRS IN SPAIN.

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BACKGROUND AND AIMS: Mother-to-child transmission is the predominant mode of Hepatitis C Virus (HCV) acquisition in children. The rate of vertical transmission of HCV has been estimated with widely varying results.

METHODS: Retrospective study (January 2000 to December 2007) that aimed to define the prevalence of HCV vertical transmission in our area. Recorded data included maternal and delivery characteristics and paediatric follow-up for a minimum of one year. All infants were tested for alanine aminotransferase (ALT), anti-HCV antibodies and HCV RNA at birth and at 3, 6, 9 and 12 months of age. Viral genotype was determined in viraemic children. Maternal HCV viral load was not available in a vast majority of cases.
RESULTS: A total of 154 mother-infant pairs were analysed. 27 babies were born of HCV/HIV coinfecting women. The presence of serum HCV RNA was observed in 15 newborns (transmission rate: 9.7%). 5 patients were born of HCV/HIV coinfecting women (transmission rate: 18.5 %). 7/15 HCV infected babies were born by planned caesarean section. 5 of all patients with positive HCV RNA remained positive beyond 36 months (chronic HCV infection). The clearance time of antibodies in non-infected babies varied from 7 to 27 months (median: 12.5 months).

CONCLUSIONS: In our study HCV mother-to-child transmission is similar to that reported in the literature being commonest HCV-HIV coinfecting mother-infant pairs. Lack of data of maternal viral load does in our cohort does not allow to determine in a rigorous manner vertical HCV transmission risk factors.

Topic: Viral infections

Paper number: 1356

Presentation type requested: Oral Presentation

VARICELLA IN INFANTS LESS THAN 1 MONTH OF AGE : HOSPITALISATIONS AND COMPLICATIONS IN FRANCE

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BACKGROUND AND AIMS: Varicella is a highly contagious ubiquitous human disease affecting mainly young children. No official recommendation on the treatment and management of this disease has been published for infants aged less than 1 month, except for specific cases during the neonatal period. **METHODS:** Between March 2003 and June 2007, our french network (175/200 pediatric wards) reported 2675 cases of children hospitalized for varicella among them 76.6% had complication. Data of 48 varicella cases aged less than 1 month are reported. **RESULTS:** Sex ratio (M/F) was 0.7, mean age 18.5 days (median 21).

The source of infection was the household in 40 cases (mother 6, including antenatal 4) or unknown (8 cases). One infant was preterm and one had eczema.

The mean length of hospitalization was 7 days (median 5). Young age was the first reason for hospitalization and 88.5% had less than 50 cutaneous lesions. No death occurred and a complication was reported in only 5 cases: cutaneous superinfection (1), digestive (1), hepatitis (1), varicella pneumonia with ARDS and hepatitis (1), group A streptococcus pleurisy with vascular thrombosis (1).

Treatment was known in 36 cases among whom 33 received aciclovir.

CONCLUSIONS: Children with varicella are mostly hospitalized because of complications, especially before one year of age. However, infants <1 month have less severe disease but are hospitalized because of their young age and receive acyclovir. The role of passive maternal protection should be more studied to elaborate management's recommendations in this population.

Topic: Viral infections

Paper number: 1363

Presentation type requested: Poster Presentation

DETERMINATION OF VARICELLA ZOSTER GENOTYPES IN GRAZ/ AUSTRIA

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BACKGROUND AND AIMS: In Europe at least four different strains of Varicella-Zoster Virus (VZV) are circulating. The current vaccination is based on the Oka strain (a Japanese wild type strain, genotype J), which may not be protective against all wild type strains. To determine which strains are common in Europe we performed a prospective study from May 2006 to April 2007.

METHODS: Vesicular fluid and two salivary swabs were collected from a total of 30 children (age 3 months-10 years). All samples were genotyped by Pyrosequencing with high sensitivity to VZV DNA. In addition, epidemiological data, age, race and family background were obtained. None of the observed children had been vaccinated.
RESULTS: 53% (16) of the tested children had genotype B, 47% (14) had genotype C and no other strains were detected. VZV DNA was found in all patients. VZV detection rate in oral fluid was 83,3% and 96,6% in the vesicular fluid samples. In 79,9% the VZV strains were detected in oral as well as in vesicular fluid.
CONCLUSIONS: Our study shows the predominant circulation of genotypes B and C in Austrian children. Further studies are needed to prove that the currently available vaccine is protective against these strains. VZV detection in vesicular fluid was better than that of salivary fluid.

Topic: Viral infections

Paper number: 1386

Presentation type requested: Poster Presentation

**ADENOVIRAL INFECTIONS IN CHILDREN HOSPITALIZED AT DEPARTMENT OF INFECTIOUS DISEASES
UNIVERSITY MEDICAL CENTER LJUBLJANA**

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BACKGROUND AND AIMS: Adenoviruses (ADV) are accountable for 1 to 6% of all respiratory and 5 to 15% gastrointestinal tract infections in children younger than 5 years. In this study we evaluated characteristic and clinical picture in children with ADV infections who needed hospitalization. **METHODS:** Retrospectively we collected data of children < 15 years with proven ADV infections, who were hospitalized.

RESULTS: During 2006-2007 289 children with ADV infections were hospitalized. 91,7% were children < 6 years. Majority (57%) were hospitalized in autumn and winter. Hospitalizations ranged from 1 to 60 days (mean 3,78 days). 73,7% of children had tonsillitis and 42,9% had diarrhoea. 19% had lower respiratory tract involvement. Most ADV infections were confirmed with throat swabs (124 with ADV antigen direct immunofluorescence assay and 120 with PCR). 49 patients had positive stool sample (27 on electronic microscopy and 22 ELISA antigen 40/41 serotype). C reactive protein ranged from 3 to 371 (mean 67,5) mg/l and WBC from 2,8 to 37,6 (mean 14,8) x 10⁹ /l. 162 patients were clinically dehydrated at admission and needed parenteral infusions. 17 needed supplemental oxygen; 3 of them were artificially ventilated. 21 had concomitant viral and 41 bacterial infections. 60 were treated with antibiotics. 1 patient developed haemophagocytic syndrome and 2 Kawasaki disease. 7,6% had febrile convulsions before admission. **CONCLUSIONS:** ADV is important viral pathogen in small children which can mimic bacterial infections (in laboratory parameters). Clinical course is usually not severe and concomitant viral or bacterial infections are common (21%).

Topic: Viral infections

Paper number: 1390

Presentation type requested: Oral Presentation

CIRCULATING VARICELLA-ZOSTER VIRUS STRAINS IN EUROPEAN CHICKENPOX OUTBREAKS AND ITS IMPLICATIONS REGARDING A UNIVERSAL VACCINATION POLICY

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BACKGROUND AND AIMS: Many European countries are considering a universal childhood vaccination program against Varicella-Zoster Virus (VZV). There are at least 4 main genotypes of VZV with distinctive European and non-European strains. In order to explore the baseline molecular epidemiology of VZV and address potential vaccine issues, we established an international collaborative study in Europe. **METHODS:** A multi-centre study was conducted in 14 European countries between November 2005 and May 2007. Thirteen centres collected samples and clinical data and samples from 257 children with chickenpox and 4 other centres provided stored samples from 69 patients recruited between November 2003 and November 2006. Pyrosequencing, sensitive to low copy number DNA, was used to ascertain genotype.

RESULTS: Our results are summarized below:

- The European genotypes, B and C, accounted for over 91% of all 326 isolates establishing their dominance in the continent.
- Genotype A, an Asian/African strain, was found in only 7 centres and not in any Eastern European participants. However, outbreaks of this strain were noted in some years including in areas not exposed to extensive immigration.
- Co-circulation of different strains was seen every year in Europe from 2003-2007 confirming similar observations in the UK.

CONCLUSIONS: Our study shows that all VZV genotypes are present in Europe and therefore, an effective VZV vaccine will need to prevent them all. Sporadic outbreaks of the non-European strain A in predominantly White children suggests the possibility of VZV strains that spread more readily which will need further investigation.

Topic: Viral infections

Paper number: 1391

Presentation type requested: Poster Presentation

IMMUNITY AGAINST HBV INFECTION IN CHILDREN WITH CHRONIC HEPATITIS C

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BACKGROUND AND AIMS: Superinfection with HBV in patients with chronic hepatitis C is associated with more severe liver disease and a higher risk of cirrhosis and hepatocellular carcinoma. Therefore hepatitis B vaccination is recommended for patients with chronic HCV infection. However, several studies suggest decreased immunogenicity of hepatitis B vaccine in patients with chronic hepatitis C, compared to healthy controls. The aim of the study was to analyze seroprotection afforded by hepatitis B vaccination in HCV-infected children. **METHODS:** Thirty five children (13 girls – 37%, 22 boys – 63%) with chronic hepatitis C immunized against HBV infection with recombinant vaccine. Titers of anti-HBs as a factor of immunity were determined one to twelve years after vaccination according to radioimmunoassay method. Anti-HBs titer ≥ 10 IU/l was considered as protective. **RESULTS:** Anti-HBs antibodies were present in 31/35 (89%) cases, in 4/35 (11%) were undetectable (in children 4, 7, 10 and 11 years after vaccination), in one (10 years after immunization) anti-HBs titer was non-protective (7 IU/l). Protective anti-HBs level ≥ 10 IU/l was found in 30/35 (85%) children: in 7 (20%) titers 10-100 IU/l, in 16 (45%) titers 100-1000 IU/l, in 7 (20%) titers >1000 IU/l. No child was positive for HBsAg. The decline of anti-HBs titers in following years of observation was noticed. **CONCLUSIONS:** In most children with hepatitis C immunization against HBV infection is effective. However, in a significant number of children, especially after longer period after vaccination, no evidence of seroprotection against hepatitis B is observed.

Topic: Viral infections

Paper number: 1399

Presentation type requested: Poster Presentation

RELATION BETWEEN MOTHER-TO-CHILD HCV TRANSMISSION AND HCV INFECTION IN INFANTS

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BACKGROUND AND AIMS: Vertical HCV infection may occur in utero and during delivery.

Aim: To determine whether HCV mother-to-child transmission always leads to child HCV infection.

METHODS: 20 anti-HCV positive, HIV-negative mothers and their children were studied from June 2005 to December 2007. During delivery serum samples and PBMC were collected from mothers and umbilical cord. Infants serum samples and PBMC were tested twice: at age 3-6 and 9-12 months. Serum was examined for HCV-RNA by RT-PCR (AMPLICOR, ROCHE). PBMC were tested for HCV-RNA by nested RT-PCR. The criterion of HCV infection in infants was detection of HCV-RNA in serum on at least two separate examinations in the first year of life. **RESULTS:** HCV-RNA was detected at delivery in serum 14 (14/20, 70%) women, in PBMC 13 (13/20, 65%) women. Seven of 20 (35%) samples of umbilical cord were confirmed as being HCV-RNA positive in serum, 5 of 20 (25%) in PBMC. None of HCV-RNA negative mothers transmitted HCV to their infants. Only one child (1/7, 14%) was consequently found to be HCV-RNA positive in serum and in PBMC (1/5) at both 3 and 9 month of life. This child was recognized as HCV infected. **CONCLUSIONS:** Detection of HCV RNA in 35% samples of umbilical cord may be connected with passive transplacental leak. Such exposition is not equal HCV infection in neonate.

Topic: Viral infections

Paper number: 1403

Presentation type requested: Oral Presentation

NEPHROPATHIA EPIDEMICA (PUUMALA VIRUS INFECTION) IN AUSTRIAN CHILDREN

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BACKGROUND AND AIMS: Nephropathia epidemica [NE] is a mild form of haemorrhagic fever with renal syndrome. In Austria, NE is caused by the Alpe-Adrian lineage of the Puumala virus [PUUV]. The bank vole (*Myodes glareolus*) is the natural host reservoir of PUUV. Human infection is thought to occur by inhalation of its aerosolized excreta. **METHODS:** We conducted a retrospective analysis of all Austrian patients <19 years with NE. From 2000 to 2007, 19 Austrian children (aged 6-18 years) had serologically verified recent NE. Their clinical and laboratory data were collected from 10 Austrian hospitals. **RESULTS:** The most commonly reported clinical features were fever > 38°C (89%), abdominal/flank/back pain (100%), nausea (89%), vomiting (84%), and headache (58%). Transient visual disturbances were recorded in 9 (47%) patients. Acute renal failure was present in 18 (95%) patients, proteinuria in 19 (100%), microscopic hematuria in 19 (100%). Clinical bleeding occurred in 4 (21%) patients (3 gastrointestinal, 1 epistaxis). Chest radiographs revealed lung infiltrates in 2/10 (20%) patients. One patient developed CNS symptoms (nuchal rigidity, somnolence, seizure) with cerebrospinal fluid showing increased protein concentration and mild pleocytosis. Common laboratory findings included thrombocytopenia (84%), hypalbuminemia (69%), hyponatremia (63%), as well as elevations of lactate dehydrogenase (83%), aminotransferases (63%), and amylase/lipase (19%). No child required renal replacement therapy. Eighteen patients were followed-up and recovered completely. **CONCLUSIONS:** Childhood NE caused by the Alpe-Adrian PUUV lineage takes a similar course to those reported for North-Eastern European PUUV strains.

Topic: Viral infections

Paper number: 1407

Presentation type requested: Poster Presentation

SEROTYPES STUDY OF ADENOVIRUS IN MID-TAIWAN

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BACKGROUND AND AIMS: The presentation of the child adenoviral infection showed variable clinical presentations such as long term fever course, leukocytosis and high level of C-reaction protein. Early diagnosis of the bacterial or viral infection is necessary for the treatment of the infection such as use of the antibiotic or prediction of hospital course. To identify the serotypes and subgenus of adenovirus may understand the clinical pandemic or endemic condition of the adenoviral infection in children.

METHODS: In this study, we applied the method of polymerase primer reaction (PCR) with gene sequence analysis to identify the adenovirus cultured by viral laboratory of Taichung Veterans General Hospital from 1999 to 2002.

RESULTS: There were 194 adenovirus to test in this study that virus took randomly from the total amount of 472 in that hospital. The clinical presentations and the diagnosis of these adenovirus infection children were recorded for further analysis. The major subgenus type of the adenovirus in mid-Taiwan during 1999 to 2002 was subgenus B. The percent of each subgenus were B 70.6%, C 23.1% and E 6.1%. The serotypes of type 3 (47.9%) and type 7 (12.4%) play the major roles of the serotype study. The peak of incidence of the age were the period of 3 to 6 year old. Adenovirus can cause serious disease including bronchopneumonia, pneumonia, carditis, nephritis, and encephalitis.

CONCLUSIONS: Early identify viral respiratory infection disease and detect the viral type are important for the clinical physician to diagnosis.

Topic: Viral infections

Paper number: 1437

Presentation type requested: Poster Presentation

SEVERE PAEDIATRIC INFLUENZA INFECTIONS IN GERMANY 2005-2007

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BACKGROUND AND AIMS: Data on influenza complications in children are limited. We initiated a German-wide surveillance of children who were hospitalized with severe influenza in an attempt to measure its impact. **METHODS:** From October 2005 to May 2007, surveillance of children with laboratory evidence of influenza that were hospitalized and treated in a PICU, or were dying in the hospital was performed. Surveillance was done using a nationwide paediatric hospital reporting system (ESPED). **RESULTS:** During the influenza seasons 2005-2006 and 2006-2007, 9 and 6 cases, respectively, of severe influenza in children were identified in German hospitals. The median age of the 15 patients (9 males/6 females) was 4.9 years (range 0.1- 15 years). Patients spent a median of 9.0 days on the ICU (range 3-50 days). Three children needed mechanical ventilation. Most frequent complications were influenza-associated pneumonia (8), followed by bronchitis/bronchiolitis (6), encephalitis/encephalopathy (5), and secondary bacterial pneumonia (4). Six of the 15 children had chronic underlying medical conditions. One influenza-associated death in an 8-year old boy with encephalopathy and cerebral edema was reported. Permanent or possibly permanent sequelae were indicated in 2 and 5 patients, respectively. **CONCLUSIONS:** The number of reported influenza-associated complications is relatively low. This may be either due to weak seasonal activity, underdiagnosis and/or underreporting of severe influenza complications in Germany.

Topic: Viral infections

Paper number: 1442

Presentation type requested: Poster Presentation

QUANTITATION OF INFLUENZA A VIRUS FROM NASAL AND LUNG TISSUE OF COTTON RATS USING REAL-TIME RT-PCR AND CULTURE

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BACKGROUND AND AIMS: An influenza real-time RT-PCR (rRT-PCR) assay for point-of-contact detection would be faster than traditional culture and may enhance intervention and prevent widespread dissemination of virus. The cotton rat is an established influenza model that could be used to study transmission/dissemination of virus among primary infected and non-infected animals. This study compared quantitative sensitivities of culture and rRT-PCR for detecting influenza virus in lung and nasal tissue from primary infected and sentinel (non-infected) cotton rats. **METHODS:** Cotton rats (primary infected) were inoculated intranasally with 10⁷ TCID₅₀ influenza A (H3N2) virus and housed with non-infected (sentinel) rats. Nasal and lung tissue homogenates obtained on post infection day 1,4,10,21, and 28 were analyzed using quantitative culture and rRT-PCR. **RESULTS:** All primary infected cotton rats (N=36) became ill and culture-positive influenza virus was detected from all nasal (6/6) and lung (6/6) samples on Day 1 post-infection. On Day 4 primary infected nose samples (9/9) but no matched lung samples (0/9) were culture-positive, and thereafter (Day 10,21,28) all primary-infected lung and nasal samples were culture-negative. All sentinel (non-infected) rats (Day 1-28) were culture-negative. However, rRT-PCR detected influenza in lung and nasal tissue from primary-infected and non-infected animals at times when culture was negative and at levels < 10 viral copies. **CONCLUSIONS:** The rRT-PCR method described here is rapid (<2 hours), more sensitive than traditional culture and could be valuable for point-of-care patient influenza detection.

Topic: Viral infections

Paper number: 1447

Presentation type requested: Poster Presentation

**A PILOT STUDY FOR ESTABLISHING NATIONAL SURVEILLANCE NETWORK OF SEVERE ACUTE
RESPIRATORY TRACT INFECTIONS**

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BACKGROUND AND AIMS: Acute Respiratory Infection (ARI) have a major impact on health services and accounting for up to 50% of visits by children to health facilities. For reducing morbidity and mortality through integrated case management, a pilot study of detecting the respiratory viruses in patients with ARI in a hospital was designed for the nation wide surveillance of this disease. **METHODS:** Case definitions were determined as the hospitalized patients under 5 and with bronchiolitis, pneumonia, croup, or acute respiratory distress syndrome. Prospectively from November through December 2007 for 1 month, 84 nasopharyngeal secretions were collected, multiplex PCR was done for detecting influenza viruses A and B, parainfluenza viruses (PIV) 1 to 3, adenovirus, human bocavirus (hBoV), human coronavirus (hCoV)-OC 43, -229E, -NL 63, rhinovirus (RV), human metapneumo virus (hMPV) and respiratory syncytial virus (RSV). **RESULTS:** Median age was 14 months (range: 2-55 months). Respiratory viruses were identified in 71.8% of 84 patients. RSV was the most commonly detected in 48 (56.4%). hCoV (6%), adenovirus (3%), PIV (2%), hBoV (2%) and RV (1%) were in patients with ARI. Co-infection rates were 3.5%. The mean duration of admission was 4.3 days in case of RSV infection. Clinical diagnosis given to the 48 patients with RSV infection was bronchiolitis in 11 (23%), croup in 1 (2%), pneumonia in 36 (75%). **CONCLUSIONS:** Multiplex PCR seems to be an acceptable method for the national surveillance of severe acute respiratory infections in infants and children. Now supporting data are investigated by the same team.

Topic: Viral infections

Paper number: 1457

Presentation type requested: Poster Presentation

SUBACUTE SKLEROSING PANENCEPHALITIS IN AUSTRIA

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BACKGROUND AND AIMS: In literature the incidence of Subacute Sclerosing Panencephalitis (SSPE) is varying from 0.85 to 11 cases SSPE/ 100,000 of measles with strong regional distinctions. Our aim was to analyze the number of SSPE-cases in Austria after the last measles epidemic in the 1990ies. **METHODS:** We retrospectively analyzed data from patients with proven SSPE in Austria in the period from 1989 to 2007. Since SSPE often has a period of latency of several years, our studies were focused on cases between 1998 and 2007. The epidemiologic data is based upon a voluntary measles surveillance system, covering 8% of the Austrian population. **RESULTS:** The peak of measles epidemic was observed in the years 1995/96 reaching an estimated incidence of 138.1/100,000. In the epidemic period 1993 to 1997 about 28,000 – 30,000 persons seem to have been infected, in the period 1989 – 2007 a calculated number of 35,000 measles cases occurred in Austria. Between 1989 and 2007 20 SSPE-cases have been reported with 18 cases in the period 1995-2007, this number would correspond to 57 cases/ 100,000 measles cases in the investigated period. 18 Patients died, 2 are still alive. **CONCLUSIONS:** An unexpected high number of SSPE cases has been observed after the last measles epidemic. The reason therefore is still unclear and should be subject for further investigation. High migration rates from regions with poor vaccination and high measles incidence, especially from south-eastern Europe and Turkey, can play a role in this observation.

Topic: Viral infections

Paper number: 1466

Presentation type requested: Poster Presentation

CLINICAL PRESENTATION AND COMPLICATIONS OF INFECTIOUS MONONUCLEOSIS IN HOSPITALIZED CHILDREN

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BACKGROUND AND AIMS: Infectious mononucleosis (IM) is self-limited, usually benign disease. Some patients present more severe clinical course or complications and require hospitalization. The aim was to characterize clinical features and complications of IM in hospitalized children.**METHODS:** Retrospective analysis of children hospitalized from 1.01.2006 to 31.12.2007 with diagnosis of IM. Diagnosis was confirmed by positive IgM anti-viral capsid antigen of Epstein-Barr virus.**RESULTS:** 111 children were hospitalized, 64 (57,6%) boys and 46 girls, age 11 months - 16 years (mean age 7,5 years). 50% children were younger than 6 years. Fever occurred in 92 children (82,9%). The major findings on physical examination were: lymphadenopathy (92,8%), tonsillopharyngitis (63,1%), hepatomegaly (82%), splenomegaly (70,3%), rhinitis (70,3%) and eye lid edema (36%). In 1/3 children exanthema was present. 5 children were jaundiced. Leucocytosis (WBC>10,0G/l) and atypical lymphocytosis (>10%) were found in 80,2% and 81,1% children, respectively. Alanine aminotransferase activity was elevated ≥ 100 IU/l in 35 from 96 (36,5%) tested children (100-847IU/l, mean 330 IU/l). In 6 children with hepatitis anti-HAV IgM and in two children anti-CMV IgM were detected. IM was complicated by upper respiratory obstruction in 58 (52,3%), secondary bacterial infection in 57 (51,4%), extensive allergic rash in 27 (24,3%). In 35 children upper respiratory tract obstruction and bacterial pharyngitis coexisted. There were singular cases of other complications: acute hepatic failure, anaemia, thrombocytopenia, epididymitis. All patients recovered completely.**CONCLUSIONS:** The majority of pediatric patients with IM, including younger children, present typical clinical syndrome. The most common complications are upper respiratory obstruction and secondary bacterial infection.

Topic: Viral infections

Paper number: 1467

Presentation type requested: Poster Presentation

PREDICTIVE VALUE OF CHICKENPOX HISTORY TO INFER VARICELLA-ZOSTER SEROPOSITIVITY IN PREGNANT WOMEN IN PORTUGAL

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BACKGROUND AND AIMS: Women on childbearing age are candidates for varicella vaccine. A high prevalence of seropositivity for varicella-zoster virus (VZV) is found in Portuguese adult population and criteria are needed to decide which women to vaccinate.

Objectives: To study the seroprevalence of VZV in a population of pregnant women, and to determine the predictive value of a previous positive or negative/unknown history of chickenpox to infer VZV seropositivity.
METHODS: Pregnant women admitted in our hospital fulfilling the inclusion criteria - residents in Lisbon at least from 2-year-old (Group 1) and residents in African Countries at least until 10-year-old (Group 2) – were included. Study period: 11-months. Seropositivity was considered for IgG anti-VZV >250 mIU/ml.
RESULTS: We obtained 311 valid questionnaires/results. The population mean age was 29.9 +/- 5.2 years.

Group 1 (n=295): The prevalence of VZV was 96.3%. Women with past history of chickenpox (n=203) had positive serology in 97.5% and women with negative/unknown history were seropositive in 93.5% (p=0,088).

The previous history of chickenpox had a positive predictive value of 97.5% and a negative predictive value of 6.5% for VZV seropositivity.

The sensibility and specificity was 69.7% and 54.5%, respectively.

Group 2 (n=16): The VZV seropositivity was 87.5% in women with (n=8) or without/unknown history of varicella.

CONCLUSIONS: This study shows that the evaluation of the serologic status before varicella vaccination in women with negative/unknown past history of chickenpox is very likely to be cost-effective in Portugal. The same may apply to the decision of post-contact Immunoglobulin prophylaxis in pregnant women.

Topic: Viral infections

Paper number: 1469

Presentation type requested: Poster Presentation

SUCCESSFUL TREATMENT OF HEPATITIS B VIRUS-ASSOCIATED MEMBRANOUS NEPHROPATHY WITH INTERFERON ALPHA-2B AND ENALAPRIL IN A 3 YEAR OLD BOY.

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BACKGROUND AND AIMS: Hepatitis B virus-associated glomerulonephritis is an infrequent complication of chronic hepatitis B virus (HBV). The optimal therapy is still undefined, although several approaches have been made. Antiviral therapy has been shown to alter the course of the disease. **METHODS:** We describe the case of a boy that was diagnosed at the age of 2 years old with proteinuria and microscopic hematuria (accidental finding). At the time of diagnosis his serologic markers were positive for HB: HbsAg(+), AntiHBs(-), antiHBc (+), antiHBcIgM(-), HbeAg(+), antiHBe(-) and significant viremia was present (HBV DNA =5.57x10⁷ IU/ml). After 6 months of persistent proteinuria he was subjected in kidney biopsy that revealed deposition of immune complexes and complement, compatible with membranous GN. Immunoperoxidase staining did not detect HBsAg or HBcAg in the kidney. **RESULTS:** Due to persistent viremia and progressing transaminasemia, hypoproteinemia and hypertriglyceridemia he was given interferon alfa-2b for. Proteinuria was reduced, hepatic enzymes and lipids were normalized. Enalapril was added as renal-protective agent. Proteinuria further decreased and plasma albumin levels were restored. After 6 months of therapy no HB viral copies were detected and there was seroconversion of HB serologic markers : HBsAg(-), antiHBs(+), antiHBc(+), HBeAg(-), antiHBe(+), with no relapse after 1 year. **CONCLUSIONS:** The ideal treatment for hepatitis B associated membranous nephropathy in children is yet to be determined. This case report suggests that alpha-2b interferon is effective in the complete resolution of proteinuria in HBV membranous nephropathy. Enalapril was proved valuable as complementary treatment.

Topic: Viral infections

Paper number: 1476

Presentation type requested: Poster Presentation

COMPLICATED FORM OF VZV INFECTION

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BACKGROUND AND AIMS: Chicken pox is an actual infection of children. Every year in our country we have incidence rate around 615 – 635 per 100000 with prevalence children's at group 3 – 6 yo. The aim of these investigations was analyzing clinical markers of complicated form for definition recommendations for treatment and prevention.

METHODS: 21 cases of patients with shingles and 14 - with complicated chicken pox were analyzed.

RESULTS: Neurological and septical manifestations were prevalence in group with complications. On $5,7 \pm 1,4$ day after first sign of illness patients with encephalitis (n=7) complain on headache and has cerebella ataxia, sometimes – vomit. Recovery was in all cases. Three children with immunodeficiency had dangerous form of VZV-infection involved visceral organs and central nervous system. They were transferred to intensive care department. Most difficult was case of one boy 13 yo, who has kidney transplant 1 year before and received immunosuppressive therapy. He was treated with acyclovir, intravenous immunoglobulin and meropenem. But rash and fever continue. Good result of treatment was received only after decision to stop temporarily immunosuppressive therapy. 5 children were admitted to hospital on $6,7 \pm 0,8$ day of chicken pox with fever, varicella rash and purulent lesion on skin. They need antibiotic treatment include reserve line.

CONCLUSIONS: This report show that reactivation of VZV infection and the most difficult complications, like a secondary bacterial infection, meningoencephalitis and other CNS complications, disseminated zoster with visceral involvement, developed in immunocompromised patients. Children with such kind of risk should be vaccinated.

Topic: Primary immunodeficiencies

Paper number: 1033

Presentation type requested: Oral Presentation

EFFICACY AND SAFETY OF PRIVIGEN IN CHILDREN WITH PRIMARY IMMUNODEFICIENCY

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BACKGROUND AND AIMS: Intravenous immunoglobulin (IVIG) is a standard and life-saving therapy in primary immunodeficiencies (PID). The primary objective of this prospective, open-label, single-arm, Phase III study was to assess the efficacy and safety of treatment with a new liquid IVIG, Privigen, in children with PID, as part of a larger study in 3-69 year old patients. **METHODS:** Thirty-one 3-15 year old children received 200-741 mg/kg of Privigen intravenously at 3- or 4-week intervals for 12-months. The primary endpoint was the rate of acute serious bacterial infections (aSBI) per subject per year. **RESULTS:** The annual rate of aSBIs was 0.11 (upper one-sided 99% CI of 0.369), which is below the pre-defined target of 1 per year. Three patients experienced an aSBI, but none discontinued treatment for that reason. The annual rate of any infection was 3.79. The annual rate of days missed from school was 8.97 days. Antibiotics were used on 51.21 days/year/patient. Privigen was well tolerated even at 8 mg/kg/min. Infusion-associated adverse events (AEs) experienced by 65% of the patients were mostly mild or moderate. Headache, vomiting, fatigue, chills, nausea and back pain were the most frequent AEs. Seven patients had 17 serious AEs, 5 of which (in 1 subject) were considered related to study drug. Four patients discontinued treatment, due to AEs (3) or withdrawal of consent (1). **CONCLUSIONS:** Efficacy of Privigen demonstrated by the low incidence of infections in children was achieved with high infusion rates and unremarkable AE profiles.

Topic: Primary immunodeficiencies

Paper number: 1036

Presentation type requested: Poster Presentation

CHRONIC GRANULOMATOUS DISEASE WITH MULTIPLE LIVER ABSCESSSES

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BACKGROUND AND AIMS: Chronic granulomatous disease (CGD) is characterized by the inability of neutrophils and monocytes to ingest but their inability to kill catalase-positive microorganisms. Any patient with recurrent or unusual lymphadenitis, hepatic abscesses, osteomyelitis at multiple sites, a family history of recurrent infections, or unusual infections with catalase-positive organisms (eg., *S. aureus*) requires evaluation for this disorder. **METHODS:** We report a 2.5 years old girl with multiple liver abscess and final diagnosis of chronic granulomatous disease. **RESULTS:** NBT=0% ACTIVITY

DHR TEST=POSITIVE **CONCLUSIONS:** This report emphasize on unusual clinical presentations of CGD (Chronic Granulomatous Disease)

Topic: Primary immunodeficiencies

Paper number: 1211

Presentation type requested: Poster Presentation

PARVOVIRUS B-19 INFECTION ASSOCIATED HEPATITIS, ENCEPHALITIS AND ACUTE RENAL FAILURE

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BACKGROUND AND AIMS: Human Parvovirus B19, pathogenic only for humans, can cause different clinical conditions. It can be the cause of erythema infectiosum as well as encephalitis, myocarditis, hepatitis, vasculitis and glomerulonephritis. We report a five-year-old boy with Parvovirus B19 infection presenting with encephalitis, acute renal failure and hepatitis. He had leucopenia, thrombocytopenia, Parvovirus B19 IgM seropositivity. Parvovirus DNA was positive in blood and he was diagnosed as acute Parvovirus B19 infection. He recovered without any sequelae.

METHODS: A previously healthy five-year-old boy was admitted to our clinic with fever, vomiting, diarrhea. He was disoriented and confused, had inspiratory stridor, no signs of dehydration and meningeal irritation.

RESULTS: The laboratory parameters were: leucocyte: 11000/mm³, PLT: 333000/mm³, CRP: 16.7 mg/dl, BUN: 62 mg/dl, creatinin: 2.4 mg/dl, AST: 180 IU/ml, ALT: 107 IU/ml, calcium: 5.9 mg/dl, phosphorus: 7.3 mg/dl, metabolic acidosis in blood gas analysis, GFR: 25 ml/dk/1.73 m². The stool microscopy and culture was negative. Cranial CT was normal but lumbar puncture revealed encephalitis. Seftriaxone treatment was initiated. At the third day, recovery of acute renal failure and development leucopenia and thrombocytopenia occurred. While evaluating the etiology of the elevated transaminases we found serum Parvovirus B-19 IgM positive. No microorganism was isolated from the CSF, blood and urine cultures. Parvovirus B-19 DNA was positive in blood. On the 10th day the patient was fully recovered.

CONCLUSIONS: Parvovirus B-19 can be the cause of responsible of different clinical conditions like hepatitis, encephalitis and acute renal failure. Therefore it is wise to think it in differential diagnosis

Topic: Primary immunodeficiencies

Paper number: 1242

Presentation type requested: Poster Presentation

SEVERE HYPOGAMMAGLOBULINEMIA AND B CELL DEPLETION CASE REPORT

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BACKGROUND AND AIMS: The hypogammaglobulinemias associated with severe depletion of B cells are associated with increased susceptibility to infections difficult to treat, with complications and an increased risk of autoimmune diseases. **METHODS:** **RESULTS:** 9 years old female child, resident in Cape Verde, sent to Portugal due to frequent otitis and respiratory infections, failure to thrive and prolonged diarrhoea. She presented with low body weight, digital hypocratism, bilateral rales on pulmonary auscultation, and no splenomegaly or adenopathy. Leucocytes 6230/ μ L, lymphocytes 1806/ μ L (29%). B lymphocytes 16cells (1%), T lymphocytes 1103cells (56%), CD4+ 271cells, CD8+ 707cells, CD4/CD8 0,39. IgG <0.0728g/L, IgA <0.218g/L, IgM <0.185g/L and total IgE <1g/L. She had bilateral bronchiectasis, a severe obstructive pattern on spirometry, and a normal echocardiography. On further investigation Streptococcus pneumoniae was isolated from the bronchoalveolar fluid, a severe esophageic candidiasis, treated with fluconazol for 6 weeks, and a pancolitis, suggestive of Crohn's disease, were detected. After colonoscopy, the child developed Enterobacter cloacae septicaemia, which improved with endovenous ceftazidime, gentamicine and immunoglobulin (IVIg). She now maintains monthly IVIg with IgG values >500mg/L. The genetic analysis of CD79A, CD79B e lambda 5 mutations is still unavailable. At this moment, she remains in Portugal once it is impossible to maintain therapy in her country. **CONCLUSIONS:** This is a very rare case of hypogammaglobulinemia associated with B lymphocyte deficiency. The spectrum of clinical presentation does not distinguish an autosomic recessive agammaglobulinemia from common variable immunodeficiency. Genetic analysis can be useful, but this case illustrates the difficulty in establishing a final diagnostic in some primary immunodeficiencies.

Topic: Primary immunodeficiencies

Paper number: 1286

Presentation type requested: Poster Presentation

PSEUDOMONAL ECTHYMA GANGRENOSUM IN A FEMALE WITH CONGENITAL AGAMMAGLOBULINEMIA

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BACKGROUND AND AIMS: Pseudomonas aeruginosa is found widely in nature and associated with a variety of infections. **METHODS:** Here we present a case with severe immunodeficiency and pseudomonas infection with appropriate management. **RESULTS:** An 18 months old girl was admitted with 38.5°C fever, diarrhea and painful papular eruptions on intergluteal area and lower extremities. She was hospitalized, initial antibiotherapy was arranged as ceftazidime+gentamycine+clindamycine due to septic appearance and skin/soft tissue infection. Those on left foot and perianal region progressed quickly to necrotising ulcers. On 48th hour of antibiotherapy, teikoplanin was added because of lasting high fever and clinical deterioration. P.aeruginosa grew on culture from blood and aspiration of pustular lesion. She was diagnosed as ecthyma gangrenosum due to pseudomonas and treatment was swiched to meropenem+amikacin, together with hyperbaric oxygen therapy. Total immunoglobulins A, M and G were all below 100 mg/dL and intravenous immune globulin was given. Her CD-19 and CD20 lymphocyte surface markers were below 1%, showing severely decreased peripheral B lymphocytes. She got well and debridement and skin grafting was performed after full recovery. Her past medical history was unremarkable. Her parents were cousins and she had a healthy 9 years old brother. Molecular and immunological diagnostics for suspected autosomal recessive agammaglobulinemia has been still going on. **CONCLUSIONS:** Pseudomonas causes opportunistic infections especially in immunocompromised patients. For any patient with septic presentation and typical spontaneous necrotic skin ulcers, antipseudomonal therapy should be promptly started. All effort should be expended to isolate the causative agent and to uncover the underlying debilitating condition.

Topic: Primary immunodeficiencies

Paper number: 1357

Presentation type requested: Poster Presentation

CHRONIC GRANULOMATOUS DISEASE: TEN YEARS IN REVIEW

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BACKGROUND AND AIMS: Chronic granulomatous disease (CGD) is the most common inherited disorder of neutrophil function (65% x-linked form; 35% autosomal recessive). Phagocytes from patients with CGD are unable to generate superoxide anions and other microbicidal oxygen metabolites, resulting in severely impaired intracellular killing of catalase-positive microorganisms.

To characterize children with CGD, followed in our Primary Immunodeficiencies Department at, in the last ten years. **METHODS:** Retrospective chart analysis and follow up of 7 children with CGD admitted to HPC between January 1997 and December 2007.

The authors describe: age of diagnosis, clinical presentation, diagnosis tests, frequent infections, isolated microorganisms, prophylactic treatment and affected parents.

RESULTS: All patients (7) were males. The median age at diagnosis was 3,5 years. Clinical at diagnosis: pneumonia, liver abscess, cervical lymphadenopathy, meningitis and osteomyelitis.

Diagnosis of CGD was confirmed in all patients by decreased of respiratory burst in activated neutrophils, and a genetic mutation was identified in 5 of them.

Isolated microorganisms were *Aspergillus fumigatus*, *Alternaria infectoria*, *Staphylococcus aureus*, *Salmonella*, *Legionella*, *Nocardia* and *Serratia marcescens*.

Frequent infections were pneumonia, acute gastroenteritis, brain and liver abscess, skin infections, aphthae, typhoid fever, fever and lymphadenopathy.

All patients did prophylactic treatment with trimethoprim-sulfamethoxazole and itraconazole. Two children died. Four cases had family histories.

CONCLUSIONS: In our study we had a great clinical heterogeneity and several kinds of microorganisms isolated, which made the diagnosis difficult in 2 patients.

Early diagnosis, prophylaxis and early intervention to treat infectious complications are very important in these patients and can be lifesaving.

Topic: Primary immunodeficiencies

Paper number: 1429

Presentation type requested: Poster Presentation

RAB27A GENE MUTATIONS IN GRISCELLI SYNDROME TYPE 2

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BACKGROUND AND AIMS: Griscelli syndrome type 2 (GS2) is a rare autosomal recessive disorder which manifests as partial albinism with variable immunodeficiency. Uncontrolled activity of T-lymphocytes and histiocytes, usually triggered by a viral or bacterial infection, leads to haemophagocytic lymphohistiocytosis (HLH). Patients with GS2 have been shown to have mutations in the Rab27a gene located on chromosome 15q21. **METHODS:** We describe a case series of 5 Maltese children: three had received a bone marrow transplant (2 boys, aged 10 and 4 years, and a 23-month-old female), a 24-month-old male who was on chemotherapy for HLH, and a 16-month-old female who has not yet developed signs of lymphoproliferation. Light microscopy of hair shafts was done on all children. Mutational analysis of the Rab27a gene was performed on DNA extracted from peripheral lymphocytes or buccal cells. Though all parents were of Maltese descent, only the parents of one were consanguineous. **RESULTS:** Light microscopy of the hair shafts showed irregular deposits of large clumps of melanin pigment, consistent with Griscelli syndrome. Mutational analysis revealed a homozygous deletion 510-514 in exon 6 of the Rab27a gene in four of the children. The fifth child was double heterozygous for the del 510-514 in exon 6 and a novel mutation, del 586 in exon 6. **CONCLUSIONS:** The prognosis of children with GS2 has improved with the advent of bone marrow transplantation; however involvement of the central nervous system by HLH might result in permanent disabilities. Early diagnosis together with adequate screening of the extended families and appropriate genetic counselling is advisable.

Topic: Others

Paper number: 1034

Presentation type requested: Poster Presentation

SAFETY OF ALCOHOL HAND GEL USE AMONG CHILDREN AND PERSONNEL AT CHILD DAY-CARE CENTERS

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BACKGROUND AND AIMS: To prevent the transmission of microbes alcohol hand gels (AHGs) have been used by children in child day-care centers (CDCCs). As some of the parents and personnel have been concerned about the safety of AHGs, we conducted a trial to assess the safety of AHGs in CDCCs. We also did a questionnaire study asking how commonly AHGs were used in CDCCs.

METHODS: In two CDCCs 82 children, aged from 3.5 to 7.2 years (mean 5.7 years), rubbed their hands with AHG, after which we counted hand contacts to mucous membranes. Alcohol concentration was measured from expiratory air using police's official alcometer 15 and 60 minutes after handrub. In questionnaire study we got 128 answers from 68 CDCCs as in some CDCCs more than one person answered.

RESULTS: All the alcometer results remained below 0.01 %, although up to 30 contacts (mean 2.4) to mucous membranes occurred during the first 15 minutes. AHG was used in all 68 CDCCs, in 11 only among adults. The commonest occasions for using AHG were before serving food and after cleaning secretions. Hand-washing with soap was common after using toilette. One case of catching a fire had happened as a worker lit a fire while her hands were wet with AHG. Personnel was most concerned of the situations where children put fingers to their mouth or eyes after using AHG.

CONCLUSIONS: The use of AHG is safe in CDCCs. Even though children tend to put their hands to mouth after disinfection, alcohol was not significantly absorbed.

Topic: Others

Paper number: 1046

Presentation type requested: Poster Presentation

CLINICAL ASPECTS OF BOUTONNEUSE FEVER IN CHILDREN

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BACKGROUND AND AIMS: The disease caused by *Rickettsia conorii* is known by various geographically recognized names, including Mediterranean spotted fever, boutonneuse fever, Kenya tick typhus, Indian tick typhus, Israeli spotted fever, and Astrakhan fever. It is a moderately severe vasculotropic rickettsiosis that is often initially associated with an eschar at the site of the tick bite. **METHODS:** Retrospective analysis of 55 children and 16 adolescents hospitalized with boutonneuse fever in Children Infectious Diseases Clinic of Clinical Infectious Diseases Hospital of Constanta.

RESULTS: During a period of 5 years (January 2003-December 2007) in Children Infectious Diseases Department we followed 71 cases of boutonneuse fever. From the total of cases 61.97% were from urban area, 53.52% were male. The majority of cases were registered in warm season. The eschar (tache noir) was present in 53 patients. Fever had a 6 days mean duration and disappears often in first 3-4 days of etiologic treatment. Maculopapular rash with nodular boutonneuse lesions was detected in 67 cases, 4 having petechial lesions. Only 32 children had leucocytosis, 9 with thrombocytopenia. Serological diagnosis was accomplished in 59 patients. Etiologic treatment was done for 5-7 days with Chloramphenicol in 59 patients, Clarithromycine in 3 cases; Ciprofloxacin in 4 cases, and Azithromycine in 5 cases. Mean duration of the illness was of 7 days, especially in moderate disease. **CONCLUSIONS:** Boutonneuse fever is a problem of actuality in the urban areas, of our county, especially in warm season. The epidemiological and clinical diagnosis, confirmed by ELISA for *R. conorii* requires beginning of etiologic treatment.

Topic: Others

Paper number: 1068

Presentation type requested: Poster Presentation

ACUTE INFECTION WITH INFLUENZA VIRUSES IN ASTHMA ATTACKS IN AMBULATORY OR HOSPITALIZED CHILDREN

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BACKGROUND AND AIMS: Influenza virus and recently described Human Bocavirus are common agents of acute respiratory tract infections in children.

The aim is to evaluate the incidence of acute infection by influenza viruses in asthma attacks in ambulatory and hospitalized children and compare to bocavirus. **METHODS:** From November 2005 to May 2007, viral indirect immunofluorescence and bocavirus PCR were performed on nasopharyngeal aspirates collected from all children admitted to the hospital through the ER for acute asthma attack. Over the 2006-2007 winter, influenza indirect immunofluorescence was performed on samples from children consulting in the ER for acute asthma attack with fever but not subsequently admitted to the hospital. **RESULTS:** During winter 2005-06, in children over 2 years of age hospitalized for acute asthma attacks, influenza virus was present in asthmatic children in 3,7% (5/136) of patients and in 1/28 children < 2 years, while bocavirus was found in 11.5% of hospitalized asthmatic children > 2 years.

However, over the 2006-2007 winter, in children checked in the ER for febrile acute asthma attacks and ambulatory treated, influenza was found in 19% (6/136) of children over 2 years of age and in 5% of patients < 2 years. During the same winter, in asthmatic patients > 2 years, bocavirus was detected in 11.8% of hospitalised and in 3% of ambulatory, and RSV in 8.8% in hospitalised and 14.8% in ambulatory.

CONCLUSIONS: Influenza virus contributes to overall exacerbation of childhood asthma mostly leading to moderate attacks which can be discharged whereas bocavirus leads to severe attacks requiring hospital admission.

Topic: Others

Paper number: 1069

Presentation type requested: Oral Presentation

INTRAOSSIOUS INFUSION, VALUABLE TOOL FOR PAEDIATRIC RESUSCITATION

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BACKGROUND AND AIMS: Vascular access is the cornerstone of fluid resuscitation in shock states. Intraosseous (IO) infusion is an alternative for iv line placement in extreme cases.

METHODS: Retrospective case-series analysis of 34 IO recipients, at our ER during 7 years (2001-2007). Inclusion criterion - IO access in non-traumatic paediatric emergencies. **RESULTS:** 34 IO lines were placed in tibia. 70.6% were male, 85.3% younger than 2 years (70.6% infants); oldest, 15 years female.

Indication for IO access - 23.5% for fluid infusion during cardio-pulmonary resuscitation, 38.2% for severe dehydration, 23.5% for septic shock and 14.8% for patients with impossible conventional iv access due to status epilepticus.

Average insertion time 45 seconds. IO lines were kept in place for ~ 6.5 hours (2-40 hours). Fluids used were NS, dextrose solution (D5 and D10) and blood products. Active medication: antibiotics, inotrope support, AED's, Na bicarbonate.

91.2% patients survived. One case had a serious side effect: osteomyelitis of distal tibia. Long term follow-up documented normal bone growth of tibia, in all cases. **CONCLUSIONS:** 1. This represents the first large series of IO line-placement in romanian children.

2. IO is a very rapid (~45 seconds) vascular access technique in selected cases.
3. Although rarely used (6.3/10.000 admissions), IO has a high success rate (> 90%).
4. IO can provide vascular access in children of all ages, beyond the generally-accepted 24 hours interval.

Topic: Others

Paper number: 1071

Presentation type requested: Poster Presentation

KAWASAKI DISEASE: AN INFECTIOUS DISEASE?

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BACKGROUND AND AIMS: Kawasaki disease (=KD) is the most common cause of acquired heart disease in children in developed countries. With the lack of a specific diagnostic test, the diagnosis of KD can only be made on clinical symptoms. The typical clinical symptoms of KD are fever, bilateral conjunctivitis, erythema of the lips and oral mucosa, changes in the extremities, polymorphous exanthema and cervical lymphadenopathy. KD occurs predominantly in the early spring and autumn indicating a possible infectious disease, but a specific agent could not be found, yet. The clinical symptoms are based on a general vasculitis of the small arterial and venous vessels. The most important aspect in terms of morbidity and mortality is cardiac involvement, in particular acute panvasculitis of the main coronary arteries leading to thrombosis and aneurysms.

METHODS: Retrospective analysis of 86 patients with the diagnosis KD admitted to our unit since 1978. We compared infectious laboratory values in cases with coronary artery complications with those without coronary artery complications.

RESULTS: From the 86 children 32(=37%) developed coronary artery aneurysms. The children with coronary arterial complications showed significant higher levels of leucocytes, platelets, CRP and an higher ASAI-Score than those without coronary arterial involvement. Treatment with high-dose intravenous gamma globulins resulted in a significant shorter duration and lower incidence of coronary artery aneurysms.

CONCLUSIONS: Children with KD developing coronary artery complications show higher laboratory signs of an infectious disease compared to patients without cardiac complications.

Topic: Others

Paper number: 1082

Presentation type requested: Poster Presentation

HIGH MACROLIDE RESISTANCE OF NASOPHARYNGEAL ISOLATES OF STREPTOCOCCUS PNEUMONIAE IN CHILDREN FROM ZAGREB REGION

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BACKGROUND AND AIMS: It is well known that monitoring of antimicrobial resistance of nasopharyngeal strains of *Streptococcus pneumoniae* is an excellent approach for prediction of resistance in clinical isolates. The aim of this study was to determine the susceptibility of nasopharyngeal isolates of *S. pneumoniae* to antimicrobial agents.
METHODS: Nasopharyngeal swabs were collected from 634 children aged 1-15 (the median age was 3 years) in two-month period (October-November, 2007). After cultivation and identification of *S. pneumoniae*, 93 strains were tested by a broth microdilution method, and minimal inhibitory concentrations (MICs) was determined for penicillin G, amoxicillin, ceftriaxone, cefuroxime, meropenem, erythromycin, azithromycin and clarithromycin.
RESULTS: The resistance to penicillin was determined in 31 (33.3%) strains with a 12.9% of highly resistant *S. pneumoniae* isolates. The resistance to other beta-lactams was lower with less than 10% of non-susceptibility to ceftriaxone and only 6.4% isolates intermediately resistant to amoxicillin. Macrolides showed decreased activity against tested strains, with resistance being 38.7%, 36.6% and 33.3% for erythromycin, azithromycin and clarithromycin, respectively. MIC₉₀ of azithromycin and clarithromycin was 512 mg/L, while MIC₉₀ of erythromycin was 1024 mg/L.
CONCLUSIONS: Amoxicillin showed the best in vitro activity among tested antibiotics, and thus might be considered as a drug of choice for the therapy of infections of possible pneumococcal etiology in children. The high macrolide resistance observed compromise clinical utility of these antibiotics and might be explained by extensive out-patient use of azithromycin in Croatia.

Topic: Others

Paper number: 1084

Presentation type requested: Oral Presentation

OPEN ACCESS RESOURCES ON PEDIATRIC INFECTIOUS DISEASES FOR CLINICIANS

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BACKGROUND AND AIMS: The World Wide Web can assist clinicians in finding useful information on diseases, including infectious diseases in children. Resources on pediatric infectious diseases that are open-access are necessary in resource poor settings in developing countries. **METHODS:** To identify websites containing information for health care professionals on pediatric infectious diseases, popular search engines such as Google and Yahoo were searched. Websites of major institutions and journals as well as relevant organisations and professional societies and associations were reviewed. Only those sites that included material in the English language, were open access and developed by a governmental and/or academic institution, or a national or international professional society or associations were included. **RESULTS:** Fifty-seven sites including journals, organizations, electronic textbooks that are from reputed organizations, that subscribe to the HON code of conduct and provide information on various aspects of pediatric infectious diseases. The sites have been tabulated and listed. Unfortunately, most of the reliable and useful websites and journals on pediatric infectious diseases are not open-access. **CONCLUSIONS:** As the morbidity and mortality due to pediatric infectious is maximum in the developing countries, the lack of open access resources is a major disadvantage for health professionals from these regions. There is a need for more open-access resources on pediatric infectious diseases.

Topic: Others

Paper number: 1132

Presentation type requested: Oral Presentation

REGIONAL VARIATION IN OUTPATIENT ANTIBIOTIC PRESCRIBING IN CHILDREN IN SLOVENIA IN 2006

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BACKGROUND AND AIMS: Outpatient antibiotic prescribing in Slovenia is moderate. We assessed regional variation in the outpatient antibiotic (antibacterials for systemic use – J01) use in children (0-14 years) in Slovenia in 2006 and determinants of regional variations (n=9). **METHODS:** Prescription data were obtained from National Institute of Public Health. All prescriptions for children were analyzed. Data have been collected in accordance with the Anatomic Therapeutic Chemical (ATC) classification and the Defined Daily Dose (DDD) measurement unit. The 2006 version of ATC/DDD was used. Data were expressed in DDD per 1000 children per day (DCD). Pearson correlation coefficient was used for statistical analysis. **RESULTS:** Outpatient antibiotic prescribing in children in 2006 ranged in Slovenia between 12.35 and 18.32 DCD. Extended spectrum penicillins were the most frequent prescribed drug (3.82-7.35 DCD) followed by beta-lactamase sensitive penicillins (3.18-4.89 DCD), combinations of penicillins with beta-lactamase inhibitors (1.79-2.91), macrolides (1.38-2.43), cephalosporins (0.59-1.51), TMP/SMX (0.38-1.01), tetracyclines (0.04-0.34), beta-lactamase resistant penicillins (0.02-0.09) and lincosamides (0.01-0.05). Very high correlation was found between use of antibiotics and number of upper respiratory (r=0.904) and urinary tract (r=0.847) infections respectively. **CONCLUSIONS:** Large variation in total use of antibiotics (factor 1.48) and use of different antibiotic classes (factor 2.5) was found. High antibiotic consumption in some regions is remarkable and it can be partly explained by higher morbidity of upper respiratory and urinary tract infections.

Topic: Others

Paper number: 1144

Presentation type requested: Poster Presentation

DIAGNOSTIC PROCEDURES IN FEVER WITHOUT SOURCE IN PEDIATRIC POPULATION NON-VACCINATED VS. VACCINATED WITH THE 7-VALENT PNEUMOCOCCAL CONJUGATE VACCINE

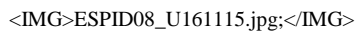
J. Ruiz-Contreras¹, J. Garcia-Sicilia², B. Rubio³, A. Gomez-Campdera⁴, J.C. Tejedor⁵, C. Calvo⁶, **C. Mendez**⁷, M.J. Gimenez⁸, L. Aguilar⁸

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BACKGROUND AND AIMS: Introduction of 7-valent pneumococcal conjugate vaccine may have influenced diagnosis of fever without source (FWS). **METHODS:** A prospective, multicentre study in 62 primary care centres and 6 emergency rooms in hospitals was performed in Madrid including all cases of FWS in children aged 3-36 months from January 2005 to December 2006. Comparisons were performed by Chi-square test. **RESULTS:** Higher number of children attending primary care centres had been vaccinated (65.1% vs. 35.8%; p<0.001). Table shows diagnostic procedures (%) in vaccinated (V) vs. non-vaccinated (NV).

Table.

Final diagnosis was performed in 38.0% patients in primary care and 35.7% in emergency rooms. **CONCLUSIONS:** Significantly higher laboratory tests, but not chest Rx, were requested in NV children with FWS.



Topic: Others

Paper number: 1160

Presentation type requested: Oral Presentation

THE ROLE OF A WHOLE BLOOD INTERFERON-GAMMA ASSAY FOR THE DETECTION OF LATENT TUBERCULOSIS INFECTION

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BACKGROUND AND AIMS: The classic tool, tuberculin skin test (TST), has limitations in populations vaccinated with BCG. The object was to perform the blood test, QuantiFERON®-TB Gold In Tube (QFT-G IT), based on detection of IFN- γ released by T cells in response to M. tuberculosis-specific antigens, and to compare this new diagnostic tool for LTBI with the TST.

METHODS: For 13 months, between Oct. 1, 2006 and Nov. 30, 2007, data were collected from three groups under 15 in Severance Children's Hospital. The first group was children exposed to active tuberculosis patients, the second group was TST positive healthy children with no contact history, and the third group was patients undergoing evaluations of tuberculosis with various diseases. TST and QFT-G IT tests were performed.

RESULTS: Data were collected from 228 pediatric patients (median age: 3.2 year, range: 0.2~15.8). 72 children had close contact history, 14% was positive in the QFT-G IT assay, 58% of the cases was positive result of TST. Agreement was poor to good between these two tests ($\kappa = 0.48$). In the second group, 65 children who had only TST positive reactions, QFT-G IT results were all negative except two children. The third group, among 91 patients, 5 patients who showed positive results in both tests took anti tuberculosis medicines. 22 patients who showed only TST positive resolved from various diseases without chemotherapy.

CONCLUSIONS: Considering contact history and whole blood IFN- γ assay employing TB specific antigens can overcome the limitation of the high false positive rate in TST and reduce unnecessary chemoprophylaxis in intermediate tuberculosis-burden country.

Topic: Others

Paper number: 1181

Presentation type requested: Poster Presentation

ACYCLOVIR RELATED ENCEPHALOPATHY: A CASE REPORT

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BACKGROUND AND AIMS: Acyclovir is a nucleoside analogue antiviral drug, active against some members of the herpesvirus including varicella zoster. Acyclovir neurotoxicity is a self-limiting, dose-dependent phenomenon which is more common in the elderly, in patients with renal failure or in association with other neurotoxic medications. **METHODS:** We present here a case of acyclovir toxicity in a 5 year old boy presenting with varicella zoster cerebellitis, with normal renal functions. **RESULTS:** 5.5 years old boy, admitted to hospital complaining of disturbed gait and vomiting. He had vesiculo-papulo-macular rash the week before, accompanied by fever of 38.5°C. His slight tendency to sleep was noted and he had ataxic gait. Following a magnetic resonance imaging of the brain yielding nothing significant, a spinal tap was performed. With normal protein and glucose levels, CSF contained no leukocytes. He was internalized at the pediatric emergency unit with a diagnosis of varicella cerebellitis and acyclovir treatment 30 mg/kg/day in three divided doses initiated. After receiving 6 doses of acyclovir he became agitated. While receiving acyclovir, his agitation worsened. Clinically his mental deterioration was linked with acyclovir which is discontinued and a trial of haloperidol initiated. Discontinuation of acyclovir resulted in a gradual improvement in mental status of the patient. Seventh day of admission to hospital, he was discharged. **CONCLUSIONS:** Acyclovir neurotoxicity is an infrequent complication of the intravenous treatment with this drug. A fast recovery after cessation of the acyclovir treatment strongly suggested that our patient suffered from acyclovir-induced encephalopathy.

Topic: Others

Paper number: 1222

Presentation type requested: Oral Presentation

OPEN ACCESS RESOURCES ON PEDIATRIC INFECTIOUS DISEASES FOR CLINICIANS

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BACKGROUND AND AIMS: The World Wide Web can assist clinicians in finding useful information on diseases, including infectious diseases in children. **METHODS:** To identify websites containing information for health care professionals on pediatric infectious diseases, popular search engines such as Google and Yahoo were searched for websites that provides information pediatric infectious diseases. Websites of major institutions and journals as well as relevant organisations and professional societies and associations were reviewed. Only those sites that included material in the English language, were open access and developed by a governmental and/or academic institution, or a national or international professional society or associations were included. **RESULTS:** Fifty-seven sites of journals, organizations, electronic textbooks that are from reputed organizations, that subscribe to the HON code of conduct and provide information on various aspects of pediatric infectious diseases. The sites have been tabulated and listed. Unfortunately, most of the reliable and useful websites and journals on pediatric infectious diseases are not open-access. **CONCLUSIONS:** As the morbidity and mortality due to pediatric infectious is maximum in the developing countries, the lack of open access resources is a major disadvantage for health professionals from these regions. There is a need for more open-access resources on pediatric infectious diseases.

Topic: Others

Paper number: 1235

Presentation type requested: Oral Presentation

THIRTY YEARS OF PULMONARY TUBERCULOSIS IN CHILDREN

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BACKGROUND AND AIMS: To describe the cases of pulmonary tuberculosis in children in the last 30 years. To compare the frequency, clinical and radiological manifestations and source of infection in each decade. **METHODS:** We reviewed the clinical records of the patients < 15 years old diagnosed with pulmonary tuberculosis between 1978 and 2007 at Hospital La Paz (Spain). **RESULTS:** A total of 507 cases of tuberculosis were identified, 414 of which (82%) had pulmonary involvement. There were fewer cases in the period 1998-2007. Fifty four cases (13%) were immigrants, with a higher rate as time went by: 2% in 1978-87, 6% in 1988-97 and 46% en 1998-2007 ($p<0,001$). The source of infection was identified in 64% of the patients. In most cases it was a close relative (33% father, 19% mother, 30% aunts and uncles, 8% grandparents). There has been a significant increase of the cases due to extrafamilial contacts in the period 1998-2007 ($p<0,007$). Since 1996 six multidrug-resistant strains have been identified (3 in children and 3 in the adult source case). Drug susceptibility testing of *M. tuberculosis* isolates became a routine at our hospital in 1998. Since then 4 drug-resistant strains have been isolated out of 48 positive cultures, with a primary resistance rate to first-line therapeutic agents of 8,5%. **CONCLUSIONS:** In the last decade a decrease in the total number of pediatric tuberculosis has occurred, with an increase of the cases in the immigrant population. Extrafamilial contacts are increasing. A high rate of primary resistance was observed.

Topic: Others

Paper number: 1252

Presentation type requested: Poster Presentation

THE CHALLENGE OF RECURRENT FEVER UNTIL DIAGNOSIS

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BACKGROUND AND AIMS: Fever is a common symptom in children and may sometimes be prolonged or recurrent. A wide range investigation is necessary to exclude the many potential causes of fever before reaching a definite diagnosis. Infectious, malignancy, immunologic and inflammatory causes must be considered. In rare situations, thromboembolism can be a possible aetiology.
METHODS:
RESULTS: A three years child, male, peculiar facies, unilateral hypoacusia. Recurrent fever since 7 months old, without periodicity (2 weeks to 2 months), variable duration (3 to 18 days), fever (39,5°C), exanthema, leucocytosis, neutrophilia, high RCP and ERS and thrombocytopenia. No arthralgias, abdominal pain, oral ulcers or lymphadenopathy. Blood, urine and bone marrow cultural exams negative. Myelogram, cellular and humoral immunity without alteration. ANA, anti-dsDNA, C3, C4, Waller-rose, RA test, anti-phospholipids, anti-cardiolipin and SLE-specific antibodies, anti-β2 microglobulin and ACE levels normal. IgD, amyloid A and ferritin also normal. Genetic studies for MEFV, MVK, TNFRSF1A, CIASI negative. Thoracic CT showed “medium lobe pneumonia” and right ventricular ectasy. Ecocardiogram showed dilated cardiomyopathy and signs of pulmonary hypertension, confirmed by cardiac catheterism that also showed periferic pulmonary thromboembolism. Thrombophilic genetic study, 4 heterozygote: PT 21210 G>A, MTHFR 677 C>T, MTHFR 1298 A>C, PAI-1 675 G>A. Bosentan, varfarin, digoxin and furosemid were started, reaching asymptomatic status, without new episodes of fever since then.
CONCLUSIONS: Pulmonary thromboembolism is a rare cause, although a possible one, of recurrent fever in paediatric age. A secondary cause demands a correct etiological and diagnostic procedure.

Topic: Others

Paper number: 1264

Presentation type requested: Poster Presentation

C PROTEIN REPLACEMENT IN PEDIATRIC PATIENTS WITH FEBRILE NEUTROPENIA DURING CANCER THERAPY

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BACKGROUND AND AIMS: A severe deficit of C Protein (CP) is reported during sepsis. Many studies show the effectiveness of replacement with CP concentrate in reducing the duration of the febrile septic state and improving the clinical outcome. We try to compare the duration of fever in neutropenic pediatric patients treated for cancer receiving C protein concentrate replacement (when CP <60%) compared to a control group. **METHODS:** Retrospective, case-control study. Patients: children with cancer treated at our center, presenting with neutrophils <500/mm³, fever > 38 ° C and poor clinical condition. Controls: previous patients (not supplemented with CP concentrate because it was not yet available at the time they underwent febrile neutropenia). **RESULTS:** 6 patients enrolled, median age 11.1 (range 2.7-16.3), and 6 historical controls, median age 4.7 (range 2.1-13.6). Days of fever were median 4 (range 3 - 5) in patients and median 6 (range 3 - 9) in the control group (p = 0,537). In any case the emoculture allowed to isolate pathogens. **CONCLUSIONS:** Although results are not statistically significant, CP replacement in cancer patients, selected with our criteria, seems to shorten duration of fever during neutropenia and improve clinical outcome. This evidence seems to be much more important if we consider that the control group showed CP values higher than patients (60% vs. 45.6%, p = 0,177) at the onset of the febrile neutropenia. The administration of CP concentrate was safe and without any complication in our patients.

Topic: Others

Paper number: 1265

Presentation type requested: Poster Presentation

ADVERSE DRUG REACTIONS AND TUBERCULOSIS IN CHILDREN

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BACKGROUND AND AIMS: Tuberculosis continues to be a major cause of morbidity and mortality worldwide. Currently available drugs are effective for treatment of the disease but may cause serious adverse effects. Isoniazid is well known to cause liver failure, potentially increasing the plasma concentrations of other hepatotoxic drugs. **METHODS:** Clinical Case: The authors report a case of a 16 years old, severely undernourished boy, HBsAg positive with epilepsy on carbamazepine and infection by giardia lamblia treated with metronidazol, admitted with necrosis of multiple mediastinic, left hilar adenopathies and calcified lymph nodes. Tuberculin test: 10mm, haemoglobin 11,1g/dl, leukocyte 5900/L, CRP 6,3 mg/dl and albumin 2,60 g/dl. Rifampin, isoniazid and pyrazinamid therapy was started. **RESULTS:** Therapy was discontinued on day four because of hepatotoxicity (abdominal pain, vomiting, anorexia, ALT 436 UI/L and AST 726 UI/L, albumin 2,10 g/dl, PT 16,7'' and INR 1,5). Metronidazol was stopped and carbamazepin replaced by levetiracetam. Lymphocyte transformation test was non-conclusive. After normalization of ALT values, antituberculosis drugs were gradually reintroduced according to the guidelines of American Thoracic Society. Rifampin was the first, followed by ethambutol on day 2 and isoniazid on day 4. Pyrazinamid was added later on day 11. Neither hepatitis symptoms nor abnormal ALT/AST values were recorded during the rechallenge period. **CONCLUSIONS:** Side effects of antituberculosis drugs are common, and must be recognised early in order to reduce associated morbidity and mortality. Given the hepatotoxicity of antituberculosis therapy, baseline laboratory testing should be considered individually for patients receiving other medications and for those with chronic medical conditions.

Topic: Others

Paper number: 1270

Presentation type requested: Poster Presentation

PROMOTER POLYMORPHISMS OF THE CSF2 GENE ARE ASSOCIATED WITH ITS TRANSCRIPTION

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BACKGROUND AND AIMS: We previously reported an association of the A allele of a single nucleotide polymorphism (SNP) of CSF2_545A/G (-1440A/G, rs2069616) with atopic asthma in at-risk children at 1 year of age. A later report showed that the mutant allele (C allele) of another SNP, CSF2_-677A/C (rs1469149), in complete linkage disequilibrium (LD) with the -1440A/G SNP, was associated with lower frequency and severity of childhood allergic dermatitis. We hypothesized that promoter polymorphisms of CSF2 are associated with its transcription. **METHODS:** A third SNP (CSF2-1916T/C, rs2069614), in complete LD with the two abovementioned SNPs, was identified from the SeattleSNP database. Two constructs containing the wild-type haplotype of these 3 SNPs (-1916T/-1440A/-677A) and the mutant-type haplotype (-1916C/-1440G/-677C) were obtained from PCR amplifying samples homozygous for either the wild-type or mutant-type at all three SNPs. The effect of these SNPs on gene expression was evaluated by the transient expression of a luciferase reporter gene using the pulmonary epithelial cell line A549. **RESULTS:** The transcriptional activity of the mutant-type CSF2 haplotype (CGC) was significantly decreased compared with the wild-type CSF2 haplotype (TAA) (14% decrease, $p = 0.0002$). Stimulation by TNF α increased the transcriptional activities by 1.6 fold. However, the fold increases of transcriptional activities after TNF α stimulation were not significantly different in cells with the wild-type vs. mutant-type haplotype. **CONCLUSIONS:** Consistent with the previous association study that the mutant-type of CSF2 genotypes were associated with protection against allergic diseases, the mutant-haplotype was associated with less transcription in reporter gene assays.

Topic: Others

Paper number: 1288

Presentation type requested: Poster Presentation

CAMPYLOBACTER JEJUNI INFECTION ASSOCIATED WITH MYOPERICARDITIS IN ADOLESCENTS: REPORT OF TWO CASES

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BACKGROUND AND AIMS: Campylobacter jejuni is the most commonly recognised cause of bacterial gastroenteritis worldwide. To our knowledge an association between campylobacter jejuni and myopericarditis has not been described in adolescent patients.**METHODS:** Retrospective chart review**RESULTS:** Case Reports:

A sixteen and a seventeen year old patient presented with diarrhea, fever, headache and abdominal pain. After 2 and 5 days, respectively, they suffered from chest pain associated with dyspnea. The electrocardiogram showed significant ST-elevations in both patients. Laboratory investigations revealed elevated cardiac enzymes (Troponin T, creatine kinase and CK-MB) and transthoracic echocardiography showed a reduced left ventricular function. Based upon these findings perimyocarditis was diagnosed in both cases and was confirmed by cardiac MRT in the younger patient. Campylobacter jejuni was isolated from stool cultures in both patients. Stool cultures were negative for other bacterial and viral agents and serological testing revealed no evidence for infection with cardiotropic viruses. After initiation of antibiotic therapy with clarythromycin the clinical condition of both patients improved rapidly. Laboratory tests, electrocardiogram and echocardiography normalised after 7 and 10 days, respectively. At 6 month follow-up both patients were in excellent condition and bicycle exercise tests were normal.

CONCLUSIONS: Myopericarditis is a rare, but severe complication of campylobacter jejuni infection. It has to be kept in mind in patients presenting with chest pain or elevated cardiac enzymes in the course of gastroenteritis.

Topic: Others

Paper number: 1333

Presentation type requested: Oral Presentation

MULTIPLE GENES REGULATING MACROPHAGE ACTIVATION AND RESPONSES CONTRIBUTE TO AN IMMUNOGENETIC PHENOTYPE UNDERLYING KAWASAKI DISEASE

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BACKGROUND AND AIMS: Kawasaki disease (KD) is an inflammatory disorder of unknown aetiology that affects young children. KD may arise from an excessive or uncontrolled inflammatory response to infectious stimuli occurring in genetically predisposed individuals. We postulated that functional polymorphic variation in genes regulating the IL-12/IFN- γ pathway of macrophage activation would contribute to the immunological phenotype underlying the disorder. **METHODS:** We studied 101 SNPs in 15 genes of the IL-12/IFN- γ pathway in 1,903 members of 583 KD families from Australia, UK & US, in a custom Illumina Oligo Pool Assay. We compared the allelic transmission to affected children of variants in the 15 genes with a similar number of variants in randomly selected genes not linked within a single biological pathway. We also studied 119 Dutch Caucasian KD cases and 136 ethnically matched controls genotyped using the Affymetrix 250K NSP chip. Analysis was extended to include 144 genes in 96 pathways. **RESULTS:** Effects of genetic variation in a related pathway can be summated using a novel-linked pathway analysis to validate the amplification effects of multiple genes. Using several methods, genes in the IL-12/IFN- γ pathway, when linked together, are significantly associated in KD in TDT data ($P=0.03$). This was further confirmed in case-control data ($P=0.004$). Pathway combinations provide evidence of the exact pathways involved. **CONCLUSIONS:** The immunological phenotype underlying excessive inflammation in KD appears to result from a complex interaction of multiple genes within the same inflammatory pathway. The methods used may be relevant to other complex gene interactions.

Topic: Others

Paper number: 1342

Presentation type requested: Poster Presentation

**UTILIZATION AND SAFETY OF SEQUENTIAL PNEUMOCOCCAL VACCINATION IN 2-5 YEAR OLD CHILDREN
AT RISK**

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BACKGROUND AND AIMS: The German standing committee on immunization (STIKO) recommends sequential pneumococcal immunization (SPV) for 2-5 y.o. children at increased risk for pneumococcal infections: one dose of seven-valent pneumococcal conjugate vaccine (PCV-7) followed by one dose of 23-valent pneumococcal polysaccharide vaccine (PPV-23) after at least eight weeks. We investigated safety and indications. **METHODS:** 10/2005-06/2007, 542 private paediatricians participated in a post-marketing surveillance. Data were stratified for age, risk profile, and applied vaccine. **RESULTS:** 2,648 vaccinees (mean age 40.3 months, 58.8% male) were suitable for analysis. Risk factors were asthma (32.1%), other respiratory disorders (12.6%), and failure to thrive (11.3%). In 13.6% (5.09%), at least one other vaccine was given simultaneously to PCV-7 (PPV-23). Mean time between immunizations was 86.0 days. After PCV-7, 184 (6.95%) vaccinees experienced 371 adverse events, mainly local pain, erythema, and pyrexia. After PPV-23, 205 (7.78%) vaccinees experienced 451 adverse events, mainly local erythema, pain, swelling, and pyrexia. SAEs were observed in 0.11% and 0.77% after PCV-7 and PPV-23, respectively. Core temperature $\geq 39.5^{\circ}\text{C}$ was documented in 0.77% (n= 17) children after PCV-7, and in 1.21% (n=23) after PPV-23. Tolerability was assessed as "very good"/ "good" by 92% /81.8% of parents and 94.7% /86.0% of physicians, respectively. Analysis of subgroups did not yield any relevant differences. **CONCLUSIONS:** Also during post marketing surveillance, SPV was found to be safe and well tolerated in children 2-5 years. Risk profiles of children did not differ with the age of the vaccinees. There were no significant differences between PCV-7 and PPV-23.

Topic: Others

Paper number: 1350

Presentation type requested: Poster Presentation

DECREASE IN INVASIVE PNEUMOCOCCAL DISEASE IN CHILDREN AFTER INTRODUCTION OF THE 7-VALENT PNEUMOCOCCAL CONJUGATE VACCINE USING A 2+1 IMMUNISATION SCHEDULE

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BACKGROUND AND AIMS: Norway introduced the 7-valent pneumococcal conjugate vaccine (PCV-7) into the childhood immunisation programme in July 2006 covering all children born from January 2006 onwards. Norway is one of the first countries to use PCV-7 in a 2+1 schedule, and the vaccine is given concomitantly with DTaP-Polio+Hib at 3, 5 and 12 months of age. Vaccines in the programme are given free of charge. **METHODS:** Based on the surveillance systems at NIPH, the introduction of the vaccine is monitored by a special programme. The vaccination coverage is monitored through mandatory registration in the national electronic vaccination register. Notification of invasive pneumococcal disease (IPD) has been mandatory since 1977, and most clinical isolates are sent to the National Reference Laboratory at NIPH. **RESULTS:** By November 2007 vaccination coverage for children aged 3, 5 and 12 months with 1, 2 and 3 doses of PCV-7 were 95%, 90% and 80-85%, respectively. For children < 10 years of age the number of notified IPD cases decreased from 136 in 2005 to 71 in 2007, with most marked reduction among children < 2 years of age. The reduction has been among IPD caused by vaccine serotypes. No increase of non-vaccine serotypes has been observed. No case of IPD has been reported after complete primary immunisation with 2 vaccine doses. **CONCLUSIONS:** Following introduction of PCV-7 into the Norwegian childhood immunisation programme, the number of IPD cases in children has declined. Applied in a programme, a 2+1 immunisation schedule seems to be highly effective.

Topic: Others

Paper number: 1359

Presentation type requested: Oral Presentation

THE STUDY ON DRUG RESISTANCE AND ERMB GENE OF ENTEROCOCCI ISOLATED FROM ANIMAL AND HUMAN

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BACKGROUND AND AIMS: To obtain better insights into transmission dynamics of macrolide resistance genes between human and animal Enterococcus strains. **METHODS:** The antimicrobial susceptibility to 8 antibiotics of 52 Enterococci isolated from animal and 55 Enterococci isolated from human was determined. PCR was used to detect the macrolide resistance genes *ermB* and *mefA*, tetracycline resistance genes *tetM*, and the integrase gene *intTn* of Tn1545 of the total 107 strains. 49 *ermB* positive strains were chosen to be sequenced. Filter mating experiments were taken. **RESULTS:** The resistance rate to erythromycin were 89.09% and 80.77% for isolates from human and animal; and resistance rate to tetracycline were 80% and 67.31% for isolates from human and animal, respectively. All isolated Enterococci strains were found sensitive to vancomycin. *ermB* was detected in 61.82% human enterococci and 53.85% porcine ones. Identical *erm(B)* gene sequences were found in animal and human enterococci. Transfer of the *erm(B)* gene from porcine *E. faecalis* to human *E. faecalis* was successful, and the transfer frequency is 1.2×10^{-5} . **CONCLUSIONS:** Enterococci have a high resistance rate to erythromycin and some other antibiotics, especially in pediatric isolates; but still very sensitive to glycopeptide. *ermB* were the predominant genes for macrolide and tetracycline. Identical *erm(B)* gene sequences were present in animal and human enterococci and that transfer of the *erm(B)* gene from porcine *E. faecalis* to human *E. faecalis* and vice versa is possible, but probably occurs at a low frequency.

Topic: Others

Paper number: 1365

Presentation type requested: Poster Presentation

THE CLINICAL EFFICACY OF MEROPENEM AMONG NEONATES: A ONE YEAR RETROSPECTIVE STUDY IN THE NURSERY OF A LOCAL TERTIARY HOSPITAL

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BACKGROUND AND AIMS: To assess the clinical efficacy of Meropenem in treating Neonatal Infections.
METHODS: A one year retrospective review of the charts of sick newborns admitted at the Nursery of a tertiary hospital, treated with Meropenem. Those discharged against advice were excluded. Frequency and percentage were used in comparing the following variables: sex, 5 minute APGAR score, age of gestation, birth weight, type of infection, culture results, treatment outcome and adverse reactions.
RESULTS: 34 charts were available for review but two were excluded. 62.5 % were females and 37.5 % males. 28.1 % had a 5 minute APGAR score of 10, 37.5 % had 9, 21.9% had 8 and 12.5 % had 7. Majority were between 32-35 weeks AOG. 46.9 % were LBW, 34.4 % were VLBW and 18.7 % had normal weights. Sepsis was the most common indication of meropenem followed by sepsis-pneumonia, pneumonia and sepsis-meningitis. Majority of the patients had no growth in their blood (68.75%) and CSF(60%). Enterobacter aerogenes (15.6%) was the most common blood isolate while Enterobacter gergeriae (20%) and Klebsiella pneumoniae (20%) were the isolates in the CSF. Treatment outcomes were favorable; 84.4% were improved while 9.4% were unimproved and shifted to other antibiotics while 6.2% died.
CONCLUSIONS: Meropenem use in treating life threatening infections among newborns is effective as noted in this review. However, further research to compare this drug with other broad spectrum antibiotics which are currently used in our newborn care unit would be a good endeavor in search for better treatment alternatives in overwhelming neonatal infections.

Topic: Others

Paper number: 1401

Presentation type requested: Oral Presentation

OUTPATIENT ANTIBIOTIC USE AND ASSESSMENT OF ANTIBIOTIC GUIDELINES IN CHINESE CHILDREN'S HOSPITALS

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BACKGROUND AND AIMS: Antibiotic abuse are a major public-health problem in China. The aim of this study was to investigate antibiotic use and assess the impact of multifaceted intervention on density and characteristics of outpatient antibiotic use of five children's hospitals in China. **METHODS:** The Anatomical Therapeutic Chemical Classification/defined daily doses and drug utilisation 90% methodologies were used. **RESULTS:** The overall outpatient antibiotic consumption decreased during the intervention period in some hospitals and the variation in use between hospitals was also reduced. A decrease in penicillins and first-generation cephalosporins, and an increase in third-generation cephalosporins and combinations of penicillins and β -lactamase inhibitors were observed. Azithromycin and amoxicillin-clavulanic acid were the most used drug in hospitals located in the northern and eastern regions, and southern and southwestern regions respectively. **CONCLUSIONS:** The intervention had effects in overall outpatient antibiotic use and unnecessary use clearly decreased, but over the five years, there was a decrease in use of narrow spectrum antibiotics and an increase in broad spectrum antibiotics. There was also considerable regional variation in drug use patterns.

Topic: Others

Paper number: 1422

Presentation type requested: Oral Presentation

PERFORMANCE OF AN IN-VITRO INTERFERON-GAMMA RELEASE ASSAY (IGRA) AND TUBERCULIN SENSITIVITY TEST (TST) FOR THE DIAGNOSIS OF TUBERCULOSIS

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BACKGROUND AND AIMS: The diagnosis of Mycobacterium tuberculosis (MTB) infection is based mainly on TST. Recently however, in-vitro IGRAs seem to offer an alternative to TST. These assays use MTB-specific antigens and quantitatively measure interferon-gamma production by lymphocytes. Our aim was to compare TST and an IGRA on diagnosis of tuberculosis (TB).
METHODS: Between October 2006 and December 2007 58 subjects (median age 7.5yr, range: 0.5-23yr) were tested with both TST and QuantiFERON-TB GOLD (QFN) for TB diagnosis. A positive TST was defined as induration ≥ 10 for those without and ≥ 15 for those with prior BCG.
RESULTS: TST was positive in 32 (55%) subjects. QFN was positive in 9 (15.5%), negative in 44 (76%) and indeterminate in 5 subjects. There was a relatively poor agreement between TST and QFN, since among 32 subjects with positive TST only 8 (25%) had positive QFN. In addition, 1 patient with TB meningoencephalitis proven by CSF PCR had positive QFN despite negative TST. Only 4/17 (23.5%) subjects with TST ≥ 15 mm had positive QFN. While among 9 subjects with positive QFN 8 (89%) had a TST ≥ 10 mm, among 44 subjects with negative QFN 36 (82%) had ≥ 10 mm and 13 (29.6%) ≥ 15 mm. Degree of agreement between QFN and TST in 27 subjects with BCG (59%) was not significantly different from that in 26 subjects without BCG (46%, p=NS).
CONCLUSIONS: A relative disagreement appears between TST and QFN in young subjects, predominantly children. This may reflect a higher specificity of QFN in comparison to TST to detect latent or overt TB.

Topic: Others

Paper number: 1438

Presentation type requested: Poster Presentation

TUBERCULOSIS IN RENAL TRANSPLANT CHILDREN

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BACKGROUND AND AIMS: Tuberculosis (TB) is a serious infection in renal transplant recipients. A high index of suspicion is necessary to ensure early diagnosis and prompt initiation of treatment. We describe two cases of TB in kidney transplanted children. **METHODS:** Case 1: A 10-year-old girl, renal transplanted at the age of five was seen with a 2-week history of fever and constitutional syndrome. Chest X-ray showed an enlargement of a right hilar node. PPD was positive (16mm). M.tuberculosis was isolated in gastric aspirate cultures. Treatment with INH, RIF and PZA was started, requiring a four-fold increase of immunosuppressive drug doses. An increase of uric acid levels improved after reducing PZA doses. She received 12 months of treatment with a favorable response.

RESULTS: Case 2: A 15-year-old boy, who had renal transplant 10 years before presentation, presented a 10-days history of cough, chest pain, constitutional syndrome and fever. Chest auscultation revealed decrease breath sounds on right upper side. CT revealed enlargement of mediastinal lymph nodes. Tuberculin skin test was negative. Acid fast bacillus were found in mediastinal node biopsy, and PCR for M.tuberculosis was positive. Treatment with INH, PZA, ETH and LEV was started. An increase of creatinine, uric acid and transaminases was observed, improving after reducing antituberculous drug doses. Actually, clinical response is favorable. **CONCLUSIONS:** Diagnosis of TB in paediatric renal transplant patients is difficult and invasive procedures are often necessary.

Interactions among antituberculous and immunosuppressive drugs must be considered.

Rifampicin-sparing regimens or closely monitored immunosuppressive drug levels in standard regimens can be used.

Topic: Others

Paper number: 1443

Presentation type requested: Poster Presentation

ATYPICAL KAWASAKI DISEASE - CASE REPORT

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BACKGROUND AND AIMS: Kawasaki disease is a multisystemic vasculitis most common in children younger than 5 years old. Its presentation can be atypical and prolonged fever its sole manifestation, becoming a challenging diagnosis. **METHODS:** **RESULTS:** The authors report a case of a previously healthy 3 months old Caucasian female admitted with prolonged fever, cervical and inguinal lymphadenopathies, erythematous rash of the palms and soles, without conjunctival injection or changes in lips or oral cavity. The ophthalmologic evaluation was normal. Laboratory findings: Hb-8.7g/dL, 13.100 white blood cells/ μ L without neutrofilia, 891.000 platelets/ μ L, C-reactive protein-11.39 mg/dL, erythrocyte sedimentation rate-110 mm/h, albumin-2.6g/dL; ALT-58U/L, normal urinalysis. CSF analysis was compatible with aseptic meningitis. Echocardiography on day 15 was normal. Cultures and viral detection were negative. Fever was present during 23 days and then periungual desquamation of fingers and toes occurred accompanied by diffuse maculopapular erythematous rash and hepatosplenomegaly. Echocardiography was repeated and showed right and left coronary arteries dilatation with no evidence of aneurysms. Intravenous gamma globulin and high-dose aspirin were started with significant improvement of skin lesions and acute-phase reactants. Genetic test for CINCA was negative. **CONCLUSIONS:** Kawasaki disease must be considered when prolonged fever is present, mainly in young children in whom the atypical forms of the disease are more frequent. Differential diagnosis with CINCA should be kept in mind when fever, skin rash, lymphadenopathy, hepatosplenomegaly and aseptic meningitis with high acute phase reactants occur.

Topic: Others

Paper number: 1448

Presentation type requested: Poster Presentation

A KAWASAKI DISEASE CASE COMPLICATED BY ASEPTICAL MENINGITIS

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BACKGROUND AND AIMS: Kawasaki disease is a syndrome characterized by various degrees of vasculitis in small- and medium-sized arteries. It has been known that aseptic meningitis is rare accompanied by kawasaki disease. **METHODS:** A nine-year old male patient applied us with persisting fever. The fever had continued more than six days, although antibiotherapy was given. His physical examination was normal except pharyngeal hyperemia. The next day of his entering to our clinic an erythematous skin lesions developed. Then vomiting, headache and abdominal pain complaints began. On following physical examination fever was 38 C and hyperemic oropharynx and tonsils, red lips, red strawberry tongue, palpable right cervical lymph nodes, 2/6 pansystolic murmur in all focuses were determined. Meningeal irritation signs were positive. Laboratory investigations revealed a hemoglobin of 11 g/dl, white blood cell count 8,600/mm³, platelets 305,000/mm³, erythrocyte sedimentation rate (ESR) 64 mm/h, C- Reactive Protein (CRP) 14 mg/L (normal < 2 mg/L). Viral markers were negative. A lumbar puncture revealed lucent cerebrospinal fluid (CSF): it contained 40 leukocytes/mm³ with totally lymphocytes, 160 erythrocyte/mm³, negative pandy reaction. Protein and glucose were normal. Electrolytes, renal and hepatic functions and urinalysis were normal. Urine and blood cultures remained sterile. On abdomen ultrasonography mild hepatomegaly was determined and minimal dilatation in coronary arteries observed by echocardiographic evaluation. Bilateral conjunctivitis began in third day. **RESULTS:** According to these findings Kawasaki disease is diagnosed. Intravenous immunoglobulin and acetylsalicylic acid were give. **CONCLUSIONS:** Fever decreased after two days therapy. Acute phase reactants turned to normal after the treatment. There was no problem on follow-up.

Topic: Others

Paper number: 1453

Presentation type requested: Poster Presentation

A MULTINATIONAL SURVEY HIGHLIGHTS THE CLINICAL BURDEN OF CHILDREN WITH OTITIS MEDIA

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BACKGROUND AND AIMS: A cross-sectional, international survey was conducted among paediatricians (n= 2000) to assess perceived disease burden, awareness and management of otitis media (OM) by primary care physicians.

METHODS: European data were obtained from 200 paediatricians in each of Germany, Spain and Poland and from 100 paediatricians and 100 family practitioners in France (n=800) and are given as mean and range across the four countries. All respondents had been in clinical practice from 5 to 30 years, had previously prescribed vaccinations for children <5 years, and had at least 1% of their patients <5 years.

RESULTS: The physicians stated that they saw on average 29 (range 17 - 45) children each month with OM, and estimated that 50% (range 44 - 54%) presented with initial episodes and 44% (range 34-54%) with recurrences. Overall, 17% (range 8 - 41%) children were seen as requiring referral to a specialist, primarily for treatment failure or recurrent OM. Almost all physicians (99%) were aware that both S.pneumoniae and H.influenzae were pathogens involved in acute OM, however only 60% (range 36 - 84%) knew of non-typable H influenzae (NTHi). Among the latter group, 58% (range 50-64%) were aware of the role of NTHi in OM. Although knowledge of antimicrobial resistance was common, watchful waiting was uncommon (mean 6%, range 1-15%). Vaccination against OM is favoured by the majority of clinicians (mean 55%, range 27-82%).

CONCLUSIONS: This survey shows that OM remains a substantial burden for clinical practice and that knowledge about the role of NTHi in OM is limited.

Topic: Others

Paper number: 1463

Presentation type requested: Poster Presentation

URTICARIA PIGMENTOSA-CASE REPORT

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BACKGROUND AND AIMS: Urticaria pigmentosa is the most common variant of cutaneous mastocytosis.

In about 70-75% of cases, lesions of mastocytosis are evident before the age of 2 years.

We are presenting a 4-year-old child with eruption of multiple brownish macular and papular lesions on the trunk, of three months duration. Skin lesions were followed with moderate itch.

There was no family history of similar disease and the general health. Growth and development of the child was unaffected.

On examination Darier's sign was positive (there was formation of erythema after stroking and rubbing of individual lesions). There was no hepatosplenomegaly or lymphadenopathy. Complete blood count, liver and renal functions, urin analysis and chest roentgenogram were normal. Abdominal ultrasound did not revealed any liver or spleen abnormalities.

Necessary advice to parents was given regarding avoidance of excessive scrubbing and massage of the skin. After 4 weeks treatment with topical corticosteroid ointment the child had only residual pigmentation left at the lesion sites with no new lesion formation.

Exact aetiology of urticaria pigmentosa is not known. However, it is believed to be proliferation of mast cells mediated through cytokines. The prognosis is best in childhood. Present case is a typical case of urticaria pigmentosa that responded well to symptomatic treatment with topical corticosteroid

METHODS: Not applicable **RESULTS:** Not applicable **CONCLUSIONS:** Not applicable

Topic: Others

Paper number: 1464

Presentation type requested: Poster Presentation

PITYRIASIS ROSEA, ATYPICAL FORM-CASE REPORT

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BACKGROUND AND AIMS: Pityriasis rosea is an acute, inflammatory, self limiting dermatosis characterized by typical oval to coin sized maculopapular and erythemosquamous lesions located primarily on the trunk and the proximal portion of the extremities. Sometimes there are vesicular, purpuric or even pustular lesions on atypical parts of the body (axilar, groin, hand).

We are presenting 27-years-old male patient with skin lesions in left axilar area. First lesion was in form of oval, erithemous plaque, with sporadic maceration, and ranged 0,5 to 2 cm. On week after first lesion appeared, numerous, disseminated erythematous and erythemosquamous plaques, 1cm in diameter arose on the skin of the trunk.

Thorough clinic examination revealed herald patch -solitary, round, erythemosquamous patch, 3 cm in diameter, on the back in lumbal region. The centre of patch was red, with a colorette of scales attached at the margin. Lesions were followed with moderate itching.

Patient was not using any drugs prior to appearance of skin lesions. After 3 weeks treatment with topical betametazone dipropionate lesions regressed.

Clinical picture is enough the diagnosis to be made. A potassium preparation and fungal culture is necessary to differentiate from tinea corporis and pityriasis versicolor. Differentiation toward drug eruption is assessed trough detailed anamnesis.

Important is to give the patient information about expected course of disease. Fundamental is not to irritate the skin-excessive use of soap, water, occlusive cloths should be avoided.

METHODS: Not applicable

RESULTS: Not applicable **CONCLUSIONS:** Not applicable

Topic: Others

Paper number: 1479

Presentation type requested: Poster Presentation

COWPOX: A RARE AND PROBABLY UNDERDIAGNOSED CAUSE OF CUTANEOUS INFECTION

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BACKGROUND AND AIMS: Cutaneous infections forming ulcerous lesions with a hard black crust can be caused by several pathogens including *Bacillus anthracis*, *Francisella tularensis*, *Yersinia pestis*, *Pseudomonas aeruginosa*, *Burkholderia mallei*, orf virus and many others. **METHODS:** We present a 17 years old girl from a farm in carynthia holding 3 cats. The girl developed a cutaneous lesion in the area of the sternoclavicular joint, which passes through macular, papular, vesicular, and pustular stages before forming a hard black crust of 2 cm diameter with erythema and edema and a lymphangitis. After a history of different antibiotic regimens she was admitted to our hospital. The lesion was painless and adherent to the underlying tissue. She was in good clinical condition. CRP and leucocyte count were normal.

Following resection of the necrotic material for diagnostic purpose and drainage of pus the wound was sutured.

RESULTS: Electron microscopy and PCR of biopsy material yielded cowpox virus.

Antibiotic prophylaxis of superinfection was continued for a few days.

CONCLUSIONS: The genus of the Orthopoxviridae contains four species that infect humans: Variola, monkeypox (MPXV), vaccinia- (VACV), and cowpoxvirus (CPXV). While Variola and MPXV may lead to life threatening diseases, VACV and CPXV in immunocompetent people causes local lesions. Wild rodents are thought to serve as reservoir, whereas transmission to humans occurs in most cases by domestic cats.

In patients with ulcerous lesions with a hard black crust and mild or no systemic symptoms cowpoxvirus has to be kept in mind as a probably underdiagnosed differential diagnosis.

Topic: Others

Paper number: 1489

Presentation type requested: No Presentation Type Allocated

INFECTIOUS DISEASES AS MORBIDITY OF ORPHANS AND ADOPTED CHILDREN IN SARAJEVO ORPHANAGE

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INTRODUCTION: Adopted and orphans children are at increased risk of infections acquired in their region of origin . The patient medical records of orphans and adopted children were reviewed to determine the prevalence of and factors associated with several infectious diseases .

AIM: Aim of this article is showing that all diseases and specially infectives diseases are more often in orphans then others children in younger ages until three years but after that orphans and adopted become "healthier" and more immune.

METHODS: A retrospective cohort study was performed. A descriptive analysis of patient demographics and an analysis of the prevalence of infections were performed with the use of Microsoft Access.

RESULTS: We demonstrated increased rates of bacterial and viral infections especially infections of respiratory and gastrointestinal systems.

DISCUSSION: Assessing the children's health also is important to prevent the transmission of infectious diseases to their adoptive families and to profile changing patterns of infectious diseases .

CONCLUSIONS: Directed screening tests should be a routine component of the medical evaluation of all children adopted from orphanage and before arrival in orphanage, regardless of age, sex, or Bosnian regions of origin. Adopted children and orphans continue to be at high risk for numerous infectious diseases . Despite these delays, some adoption-orphanages professionals have supposed that Bosnian children are "healthier" than children who are adopted or they are children in orphanage from other countries.