

that can potentially be used on the neonatal units and postnatal wards.

Aim To develop neonatal track and trigger observation chart in order to enable early identification of neonates in need of urgent medical assessment and intervention.

Methods A core group involving local paediatricians, neonatal nurses and midwifery sister was established to lead the project. The group contacted various neonatal units in different newborn networks in England seeking information if early warning scores or track & trigger system was being developed or already well established. Literature search was carried out to identify studies related to newborn early warning system scores.

Results One relevant published study was retrieved from Medline search (Roland 2010). None of the neonatal units contacted had an established early warning neonatal scoring system. Group developed newborn observation chart for "At Risk" and "High Risk" Infants. It was based on neurophysiological parameters, intervention criteria and staff concerns. A decision tree was devised based on trigger scores.

Conclusions Prospectively evaluation of Burton neonatal track and trigger observation chart is required to ascertain its efficacy. If found to be reliable and valid, it will facilitate observation of neonates deemed to be at risk and prompt an early review in triggered neonates.

1569

CARDIAC INVOLVEMENT IN YOUNG INFANTS WITH SEPSIS-LIKE ILLNESS IS NOT ASSOCIATED WITH ENTEROVIRUS INFECTION

doi:10.1136/archdischild-2012-302724.1569

¹EP De Jong, ¹LHPM Filippini, ²EPM Van Elzaker, ³FJ Walther, ¹F Brus. ¹Juliana Children's Hospital; ²Medical Microbiology, Haga Hospital, The Hague; ³Paediatrics, Division of Neonatology, Leiden University Medical Center, Leiden, The Netherlands

Introduction Enterovirus (EV) infection is common in young infants, amongst those admitted to intensive care units acute myocarditis has been reported. We questioned if myocardial involvement exists in less seriously ill children with EV infection.

Methods From August 2011 onward we included children under 90 days of age, who were admitted to our hospital for sepsis-like illness. During admission serum concentrations of Troponin-I, CK, CK-MB, BNP and NT-Pro-BNP were determined and an electrocardiogram and echocardiography were performed. Differences between children with and without EV infection were studied.

Results We present results of the first 28 patients included, 14 were EV positive. Basic patient characteristics were similar between EV positive and negative infants. In 17/28 infants cardiac enzymes could be determined. CK was normal in all, CK-MB was elevated in 11 infants, Troponin-I in 2, BNP in 14 and NT-Pro-BNP in all but one. There was no difference in cardiac enzyme concentration between the two groups.

Electrocardiograms showed signs of ischemic heart disease in two infants that disappeared at follow-up four weeks later. One was EV positive and one negative. In both cases not enough material was collected to evaluate cardiac enzymes.

None of the children showed signs of cardiac dysfunction at echocardiography.

Conclusion Regarding signs of cardiac involvement no differences were found between EV positive and negative infants with sepsis-like illness. Both groups showed elevation of cardiac enzymes. Cardiac involvement seems to be subtle, only 2 infants showed transient ischemia on ECG whereas none showed myocardial dysfunction on conventional echocardiography.

1570

PROGNOSTIC PARAMETERS AND OUTCOME OF INVASIVE MENINGOCOCCAL DISEASE IN CHILDREN

doi:10.1136/archdischild-2012-302724.1570

¹V Zilinskaite, ²L Peculiene, ²L Sakalauskaite. ¹PICU, Vilnius University Clinic of Children's Diseases; ²PICU, Children's Hospital, Affiliate of Vilnius University Hospital Santariskiu Klinikos, Vilnius, Lithuania

The Aim of this study was to evaluate retrospectively the clinical prognostic parameters of children with diagnosed invasive meningococcal disease (IMD) during their admission to the emergency department and compare them to clinical diagnosis and outcome.

Methods We retrospectively evaluated 75 patients admitted to the PICU of Vilnius University Children's Hospital during 2009–2010 years. IMD with meningitis was diagnosed in 32 patients (McM group), meningococemia and septic shock without meningitis in 43 patients (Mc group). 6 patients died (8%), 5 in Mc group (11.6%), and 1 in McM group (3.1%). 6 bad prognosis parameters (BPP) during admission were evaluated:

1. short duration of illness before admission (less than 24 hours),
2. widespread haemorrhagic rash,
3. signs of septic shock,
4. alert state of consciousness,
5. blood leukocyte count < 10×10⁹/L,
6. blood platelet count < 100×10⁹/L.

Results All 6 BPP were established in 6 Mc group patients, 5 of them died, all have duration of illness less than 12 hours. 4 or more BPP was in 16 (37.2%) Mc group patients, and in 6 (18.7%) McM (p>0.05). 3 or less BPP was equal in both groups. More than 2 BPP was established statistically significant more often in Mc patients group - 60.5% and 34.4% (p=0.036).

Conclusions An early identification child with meningococcal sepsis without meningitis is important to start the appropriate treatment as soon as possible. 2 or more BPP during the first assessment in the emergency department can be predictive values of the life threatening process of meningococcal infection.

1571

RISKS FACTORS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) ACQUISITION IN PEDIATRIC INTENSIVE CARE UNIT (PICU)

doi:10.1136/archdischild-2012-302724.1571

MH Rathore. Department of Pediatrics, University of Florida, Jacksonville, FL, USA

Background MRSA is a significant problem in ICUs. Data on risks for acquiring MRSA while in PICU are minimal.

Methods Children < 19 years old admitted to PICU between 4/1/2008 & 3/31/2011 had admission & weekly MRSA nasal surveillance done. MRSA affected (colonized or infected) children were compared to unaffected.

Results There were 2861 admissions. Mean age 6.7 yrs (median 4.7); 1444 (50.5%) male. 2632 (92%) of 2861 either had a known history of MRSA or an admission surveillance test and were included in the analysis. 415 (15.8%) were MRSA affected; 264 had known history of MRSA, 132 were MRSA+ on admission and 19 became affected while in PICU (18 colonized & 1 infected). 14 (77.8%) of 18 colonized were identified on weekly surveillance, 4 (22.2%) had a positive non-surveillance culture. 19 children who became MRSA affected were further analyzed. There was no significant difference in gender or ethnicity between the two groups. MRSA affected were younger (3.68 vs 6.79 yrs, p=0.03). Mean Hospital length of stay (LOS) prior to PICU admission was longer in the MRSA affected group (2.3 vs 0.6 days, p=0.04). Systemic steroids (p=0.009), mechanical ventilation (p=0.001) and a central venous catheter (CVC) (p=0.001) were all higher in the MRSA affected group; surgery & antibiotic use were not. Mean LOS in the PICU was 4.3 days, Mean LOS in the PICU before becoming MRSA affected was 18 days.

Conclusions Longer hospital stay prior to PICU admission, steroid use, mechanical ventilation and CVC were associated with becoming MRSA affected.

1572 USUAL MICROBE STRAINS IN A PEDIATRIC INTENSIVE CARE UNIT

doi:10.1136/archdischild-2012-302724.1572

E Blevrakis, T Tavladaki, AM Spanaki, E Vasilaki, MD Fitrolaki, E Geromarkaki, S Iliia, G Briassoulis. *PICU, University Hospital of Heraklion, Heraklion, Greece*

Background and Aim Healthcare-associated infections (HAIs) are an important cause of morbidity and mortality among critically ill children. This retrospective surveillance study was performed to estimate the burden of HAIs in a paediatric intensive care unit of our country. During the 61/2 years study 660 patients were treated in the PICU for >48 hours.

Methods A retrospective study of healthcare associated pneumonia (HAP) blood stream and urinary tract infections is recorded.

Results The crude infection rate were healthcare-associated pneumonia, bloodstream and urinary tract infections and approximately above the two thirds came from microbes isolated from bronchial aspirations. Table 1 positive cultures.

Pseudomonas Aeruginosa was the commonest infected bacterium followed by *Staphylococcus Aureus* and *Klebsiella Pneumoniae* in very low percentage. Table 2 microbes strain.

Abstract 1572 Table 1 Positive cultures

BAL	68.75%	81%
BLOODSTREAM	22,2%	81%
URINE	9,76%	81%
OTHER SYSTEM		19%

Abstract 1572 Table 2 Microbes strains

<i>Pseudomonas Aeruginosa</i>	39%
<i>Staphylococcus Aureus</i>	5%
<i>Klebsiella Pneumoniae</i>	4,65%

Conclusions The above data are similar in those in literature and active surveillance is essential to reduce the burden of HAIs and intensive efforts have already began.

1573 SEPSIS AND MULTIPLE ORGAN DYSFUNCTIONS IN OUR PICU

doi:10.1136/archdischild-2012-302724.1573

E Celaj, I Bakalli, E Kola, R Lluka, A Vula, D Sala, S Sallabanda. *PICU, UHC 'Mother Teresa', Tirana, Albania*

Background and Aims Multiple organ dysfunction (MODS) may occur during septic disease and it associated with high mortality. The final outcome depends of many factor such as the age, the host response to infection, the site and type of infection, the development of shock, the underlying disease, and the number of failed organs.

The Aim of the study was to determine the frequency of sepsis and MODS in our PICU, define the clinical and laboratory features of affective children and evaluate their outcomes.

Methods A retrospective analysis of children presenting with sepsis and MODS in our PICU between January - December 2011.

Results During the period of study, 478 patients were admitted in our PICU. Sepsis and MODS occurred in 10.9% (n=52) of hospital admissions. Girls were 63% and boys 37%. The overall mortality

was 36.5%. Three children died during the first 24 h after the admission and for the rest the mean hospital stay was 8.4 days.

The most frequent organs involved were respiratory, cardiovascular, hematological and neurological. The organs that were less frequently involved were the gastrointestinal, renal and hepatic organs.

The survival depended on the number of affected systems. When two systems were involved the survival was 84%, three systems 34%, four systems 25% and five or more with no survival.

Conclusions Sepsis and MODS were associated with increased severity of illness.

The mortality rate associated with multiple organ system failure in pediatric patients is high. Mortality increased with increasing number of organ dysfunctions.

1574 HEPATOADRENAL SYNDROME IN EGYPTIAN CHILDREN WITH LIVER CIRRHOSIS WITH AND WITHOUT SEPSIS

doi:10.1136/archdischild-2012-302724.1574

A Elfaramawy. *Pediatrics, Ain Shams University, Cairo, Egypt*

The similarities between septic shock and liver failure led to the proposal of the term hepatoadrenal syndrome. This study aimed to evaluate children with liver cirrhosis for the presence of adrenal insufficiency especially during critical illness. It was designed to evaluate adrenal function for 24 children with liver cirrhosis of various etiologies by measuring basal cortisol level and measuring the peak level after 30 minutes of short low dose ACTH stimulation test. They were categorized to; group 1 included 12 patients with sepsis and group 2 included 12 patients without sepsis. It was found in this study that no one of group 1 or group 2 had absolute adrenal insufficiency; however 11 patients, 8 (66.6%) of group 1 and 3 patients (25%) of group 2 had relative adrenal insufficiency (RAI) as the increment detected in cortisol level after stimulation was < 9 µgm/dL. Most of patients with RAI (72.7%) were categorized as having Child -Pugh C liver cirrhosis. The presence of ascites, high temperature, high C reactive protein, neutrophilia, high ALT, AST, high total bilirubin, prolonged INR and lower albumin were all risk factors associated with the occurrence of RAI. Survival rate in patients with normal adrenal function (92%) was significantly better than in patients with RAI (27%) (p=0.02). It was concluded from this study that a high incidence of relative adrenal insufficiency was found in children with liver cirrhosis. It was more common in the presence of sepsis, related to the degree of liver cirrhosis and carried a bad prognosis.

1575 LUMBAR PUNCTURE(LP) IN INFANTS AND CHILDREN WITH SUSPECTED MENINGITIS:REGIONAL TRENDS OVER 15 YEARS

doi:10.1136/archdischild-2012-302724.1575

Z Barsoum, E Kieran, J Powell, N Barrett, NO Connell, RK Philip-Limerick. *Paediatrics, Mercy University Hospital, Cork, Ireland*

Background and Aims Lumbar puncture (LP) has been long considered a useful tool to assist in the diagnosis of meningitis. We aim to study the trends of successful LPs in an Irish Regional hospital and to further analyse, timing of LP, microbiological and serological positive yield and the potential impact on treatment.

Methods A retrospective analysis of laboratory data of all successful LPs for suspected meningitis among the 0–15 year age group was performed from July 1996 to December 2010 at University Hospital-Limerick. Repeat studies and samples from the Regional Maternity hospital were separately analysed. CSF studies for other conditions were excluded. HIPE data on meningitis admissions and supportive laboratory data were collated. Hospital Audit committee approval was obtained.