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Background and Aims Neuroinfection is an entity with possible serious subsequent complications. Early and precise diagnosis can help in purposeful treatment and accurate prognosis. The aim of the study was the analysis of principles and value of neuroimaging in the diagnostic process in pediatric neuroinfection.

Methods The retrospective analysis comprised 74 patients diagnosed with encephalitis and/or meningitis. The cohort was divided into two groups: A (meningitis; n=45) and B (encephalitis and meningoenkephalitis, n=29). Data obtained from medical records (medical history, signs and symptoms, results of laboratory tests and radiological imaging) were investigated. Computer tomography (CT) or magnetic resonance (MR) were performed in the study group.

Results In the group A first CT examination revealed abnormalities in 9.7% of patients, in the group B - in 28% of children. MR examination showed pathological brain area in 79.3% of patients in group B. High signal in SE/T2 was observed in 95.7% and in FLAIR in 86.9%. In 90% of analyzed group B the disturbances in DWI were noted.

Conclusions CT examination performed in the initial stadium of meningitis and/or encephalitis has limited diagnostic value for recognizing of inflammation. The characteristic of the abnormalities revealed by MR enables to recognize inflammation changes in central nervous system and their localization can direct diagnostic process. The presence of brain tissue alterations in MR image has significant correlation with clinical symptoms like seizures, consciousness disturbances and neurological deficits. The most sensitive sequences in estimation of the inflammation activity process are DWI and FLAIR.

962 THIOPENTONE INFUSION IN ICU- THERE IS MORE TO THIS THAN MEETS THE EYE

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Thiopentone infusion is used to manage patients with Traumatic Brain Injury with persistent raised Intracranial pressure (ICP) and in treating intractable seizures. Pupillary abnormalities (unequal or fixed and dilated) can occur as a complication. The aim of this study was to determine factors associated with this complication.

Methods Retrospective review of patients admitted to a tertiary level PICU between 2000–2011 receiving thiopentone infusion or >2 boluses (not as a part of Rapid sequence intubation). 59 patients were identified. Patients who had dilating eye drops were excluded. Quantitative variables are expressed as mean and Standard deviation, qualitative variables as percentages. Student's t-test is used for comparison of quantitative variables.

Results The mean age of study population was 6.5years (±5.3). Thiopentone was used for ICP management in 44 (74.6%) and seizure control in 15 (25.4%) patients. 13 (22.4%) episodes of pupillary abnormality (of which 8 had fixed and dilated pupils) were recorded in 12(20.3%) patients. Dose/kg (p=0.675), maximum rate of infusion (p=0.37) or duration of infusion (p=0.51) were not significantly related to the occurrence of this complication. Age >9 years was significantly associated (p=0.05) with abnormal pupillary reaction.

Conclusion High dose, maximum infusion rate or longer duration of thiopentone infusion were not associated with abnormal pupillary reaction. Drug levels were not done in all and it is not known whether this complication is a result of genotypic variation in drug metabolism. It is however important to have continuous EEG monitoring to ensure that the optimal dose is administered to the patient.

963 PREGNANCY-ASSOCIATED PLASMA PROTEIN A LEVELS AND NEONATAL COMPLICATIONS IN POST-TERM PREGNANCIES

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Objectives To assess the association between serum pregnancy-associated plasma protein A (PAPP-A) measured in the first trimester and perinatal complications in post-term pregnancies.

Methods A total of 4948 singleton pregnant women, who delivered after 40⁺ gestational weeks, were included at Aarhus University Hospital between January 2005 and December 2007. Serum levels of PAPP-A were determined at the first-trimester screening for Down syndrome (GA 8⁺ – 13⁺). Labor was not induced routinely until 42⁺ weeks of gestation. However, in women with diabetes mellitus, gestational diabetes, preeclampsia, hypertension, prelabor rupture of membranes, twin pregnancies, fetal growth restriction and intrahepatic cholestasis, labor were induced by 40 completed weeks or earlier and were not included in the study.

Results In post-term pregnancies first-trimester serum PAPP-A below 0.4 MoM was associated with small weight for gestation (< 5th centile)(OR_{adj} 1.7, 95% CI 0.9–3.0), Apgar score of less than 7 at 5 minutes (OR_{adj} 5.4, 95% CI 2.0–14.3), admission to the neonatal intensive care unit (OR_{adj} 1.5, 95% CI 1.0–2.3), and newborn hypoglycemia (OR_{adj} 3.4, 95% CI 1.8–6.4). In neonates with small weight for gestation the risk of hypoglycemia was increased considerably (OR 14.6, 95% CI 3.4–58.0).

Conclusions Low first trimester serum PAPP-A was associated with increased neonatal morbidity in post-term pregnancies, particularly in newborns with low birth weight. Thus, PAPP-A may qualify the timing of induction of labor in these pregnancies and low PAPP-A may indicate more closely follow-up when past 40 weeks of gestation.

964 IS THE PLACEBO EFFECT REVEALABLE IN NEWBORNS? RESULTS FROM AN RCT IN OSTEOPATHY

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Background and Aims Placebo effect has been largely studied and debated in medicine. Interestingly the majority of studies focused on children and adults but not on newborns. In the field of osteopathic medicine, few studies documented this effect using sham therapy. A previous study showed the association between OMT and LOS on newborns. However, no research were conducted on the placebo effect on newborns osteopathically treated. Therefore the aim of this study is to detect the association between placebo treatment and change in clinical outcome in newborns.

Methods A double blinded randomized control trial was carried out on 250 preterm newborns, GA >29 and <37w and free of medical complications. After enrollment, all subjects were randomly assigned to study (N=107) and control group (N=143). All preterms received routine pediatric care and osteopathic sham therapy was administered to the study group only for the entire period of hospitalization. Primary outcome was to evaluate the effectiveness of sham therapy in reducing LOS.

Results At entry, univariate statistical analysis showed no differences between groups. At the end of the study, after adjusting for all potential confounders, generalized linear model analysis showed no difference on the primary outcome (mean difference between study and control group: 2.444; 95%CI -0.447, 5.337; p=0.09).

Conclusion This study is the first in the field showing no effect of placebo treatment using sham therapy on newborns opening discussions about the age when placebo effect starts.

965 AIRWAY SKILLS IN PAEDIATRIC CRITICAL CARE UNITS; A NATIONAL SURVEY OF NON-ANAESTHETIC TRAINEES

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Background Airway interventions in critically ill patients are associated with a higher incidence of complications; inadequate skill can have serious implications. We conducted a survey to investigate airway skills training of non-anaesthetic trainees working in PICU in the UK and Ireland and to assess the need for an airway skills course specifically for these trainees.

Methods A survey was emailed to PICUs listed on the Paediatric Intensive Care Audit Network requesting completion by non-anaesthetic trainees.

Results Of 25 units eligible, 14 confirmed participation (53%). Sixty-five trainees responded. Most were of a paediatric background and of ST5 level and above. Only 48% received airway training on induction to PICU. This comprised of bag-mask ventilation (100%), airway adjuncts (71%), laryngeal masks (48%), intubation (74%), and emergency cricothyroidotomy (19%). Previous training came from advanced paediatric life support (APLS), neonatal intensive care, in-house resuscitation training or anaesthetic modules. Emergency airway scenarios were encountered by 90% and included accidental extubations, blocked or dislodged endotracheal and tracheostomy tubes, respiratory arrests and upper airway obstruction. Of these only 64% felt they had sufficient training to manage the situation as the first attending doctor. Availability of an airway skills course was supported by 83%. Comments highlighted the importance placed on dedicated theatre time.

Conclusions The percentage of trainees who encountered emergency airway scenarios illustrates the importance of basic airway skills. However only 48% of trainees received airway training on induction to PICU. The numbers in favour of an airway course could indicate a current gap in training.

966 THE NONTHYROIDAL ILLNESS SYNDROME IN SEPTIC CHILDREN

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Background The interpretation of thyroid function tests in the PICU patients can be difficult because thyroid hormone concentrations are affected by nonthyroidal stresses. Most patients fall into sick euthyroid syndrome or nonthyroidal illness syndrome (NTIS). The TH therapy during critical illness remains controversial.

Aim To evaluate the NTIS in septic children.

Method The prospective study conducted on 65 patients admitted in PICU during 12 months period. Inclusion criteria: age > 1 month, admission for critical illness, treatment with corticosteroids, no (documented) history of thyroid pathology. The patients were divided into 2 groups: sepsis and non-sepsis group (dehydration, poisoning, cardiac failure). All patients received corticosteroids. Some of them received in addition dopamine or presented malnutrition. The thyroid hormone assessment was made after the critical diagnosis was established.

Results Sepsis group: 30 patients. Non-sepsis group: 35 patients. NTIS was strongly correlated with sepsis ($p < 0.008$). Not strongly variation with the addition of dopamine, either for sepsis group ($p < 0.07$) and non-sepsis group ($p < 0.03$). Few patients with

malnutrition for both groups, without statistical interpretation. Most frequent variation was observed as "low T3-T4 syndrome" (63%). One single patient (6 months old) was diagnosed as critical hypothyroidism (Sandifer syndrome history), based on clinical complains (severe hypothermia - 32.8 Celsius degrees, bradycardia, altered mental status), less conclusive thyroid hormone tests (high TSH), the only one who received TH therapy.

Conclusion The study confirmed significant correlation between NTIS and sepsis in children (40%). Reassessment of thyroid function should be done away from critical episode.

967 DIRECT AND INDIRECT FINANCIAL BURDEN ON THE FAMILIES OF CHILDREN RECEIVING CRITICAL CARE AT TERTIARY LEVEL PICU IN INDIA

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Background and Aims PICU admissions result in high expenditure and impacts financial dynamics of families. We analyzed direct and indirect costs of Pediatric critical care, differences between patient groups, actual out of pocket expenditure, interventions provided and final outcomes.

Methods 784 children were admitted over 27 months. 518 received discharge, 57 died, 207 discharged against medical advice & 2 absconded. 116 patients were excluded due to missing details. 668 were analyzed for Average length of stay(ALOS), average hospital expenses(AHE), average hospital expenses/day(AHED), average pharmacy expenses(APE), average pharmacy expenses/day(APED).

Results ALOS in PICU was 6.125 days, AHE was \$231/patient and AHED of \$40/patient/day, APE was \$102.3/patient & the APED was \$16.7. Overall expenses were higher in younger patients especially infants. Males had more expense and length of stay. Patients who died had 4.23days(ALOS), \$315(AHE), \$74.5/day(AHED), \$134.8(APE)& \$32/day(APED); as opposed to those who were discharged 7.21days(ALOS), \$224(AHE), \$31.1/day(AHED), \$97.9(APE)& \$13.6/day(APED). Uninsured patients had 3.5 times higher expenses than insured (Analysis of expenses uncovered in insurance cover). Ventilated patients had 9.788days(ALOS), \$395.2(AHE), \$40.4/day(AHED), \$217.5(APE)& \$22.22/day(APED); compared to unventilated ones who had 4.436days(ALOS), \$117.2(AHE), \$26.4/day(AHED), \$48.7(APE)& \$11/day(APED). Patients with meningoencephalitis, multiple organ dysfunction syndrome & septicemic shock had 4, 5, 2.5 times higher expenses than average.

Conclusions Younger patients and those with critical illness had higher expenditure. Intensive care life support interventions like ventilation increase the expenses to over four times average. Direct and indirect expenses incurred from critical care lead to further impoverishment of already poor classes.

968 ROLE OF A REGIONAL RETRIEVAL SERVICE IN PROVIDING SAFE AND SUSTAINABLE CARDIAC SERVICES FOR CHILDREN

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Background and Aim Safe and sustainable review of cardiac services for children in England has proposed options for reconfiguration of services. We reviewed the current management of cardiac emergencies at referring hospitals and the role of regional transport team. North West and North Wales Paediatric Transport service