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 meningoencephalitis, 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 preformed in the initial stadium of meningitis and/or encephalitis has limited diagnostic value for recognizing 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.
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.

**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.

**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.

**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 data. 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 9.78days(ALOS), $395.2(AHE), $40.4/day(AHED), $217.5(APE)& $22.22/day(APED); compared to unventilated ones who had 4.43days(ALOS), $117.2(AHE), $26.4/day(AHED), $48.7(APE)& $11/day(APED). Patients with meningocerebritis, 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.

**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