Gathering laboratory results to history and clinical examination would improve the sensibility and specificity of ferritinemia for this highly dangerous disease and allow decisive therapeutic decisions.

Conclusion In addition to its "traditional" interest in deficits or iron overload, ferritin may offer some beneficial major diagnostic benefits for life threatening cases like perinatal hemochromatosis.

PO-0289 IT TAKES MORE THAN EIGHT DAYS BEFORE TINZAPARIN LEADS TO ADEQUATE ANTI-XA LEVELS IN PAEDIATRIC INTENSIVE CARE PATIENTS FOLLOWING CONGENITAL HEART SURGERY

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Objective Tinzaparine is used in paediatric intensive care (PICU) following cardiac surgery as a bridge to oral anticoagulation. Low Molecular Weight Heparins (LMWH), such as Tinzaparin are thought to lead to immediate anticoagulation with adequate anti-Xa levels 2–4 hours after the first dose. Dosing following international guidelines, is age dependent and guided by anti-Xa levels. However, little is known about LMWH dosing in PICU patients. We conducted a retrospective study to evaluate tinzaparin dosing.

Methods We retrospectively analysed Tinzaparin doses and anti-Xa levels from all children admitted to PICU (January 2012–December 2013). Hospital policy is to determine the first aXa level after 3–4 doses and 4 h post dose, targeting 0.5–1.5 IU/ml.

Results There were 31 episodes of newly started Tinzaparin in 28 children. Mean age was 57 (SD±62) months. First anti-Xa levels were determined at 3.45 (SD±1.9; range 1–12) days after the first dose and were sub therapeutic in 25 of 31 (81%): mean 0.33 (SD± 0.15) IU/ml. Tinzarin dose was increased in 12/25 (48%) patients and further anti-Xa levels were determined. In 15 patients further levels were not available due to transition to vit K antagonists or PICU discharge. Therapeutic anti-Xa levels (0.69 (SD± 0.27) IU/ml), were eventually reached in PICU in 16 patients after a mean of 8.8 (SD± 7.1 range 3–30) days.

Conclusion Tinzaparin dosing in PICU patients only leads to target anti-Xa levels after more than 8 days. Levels need to be determined after the first dose so that doses can be adequately increased.

PO-0290 SEIZURES IN A PAEDIATRIC INTENSIVE CARE UNIT: A PROSPECTIVE STUDY

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Purpose To determine the aetiology and clinical features of seizures in critically ill children admitted to paediatric intensive care unit (PICU).

Methods A total of 203 children were admitted from June to November 2013, 45 patients were eligible. Age ranged from 2 months to 19 years. Seizures were organised as epileptic or non-epileptic. Demographic data, PRISM III, GCS, risk factors, coexistent diagnosis, medications administered before admission, type and duration of seizures, drugs used, requirement and duration of mechanical ventilation, length of stay and neuroimaging findings were collected prospectively.

Results The male-female ratio was 0.8. Mean age was 5.4. The most common causes of seizures were non-epileptic. Most frequent coexistent diagnosis was infectious diseases and 53.3% had recurrent seizures. Medications were administered to 51.1% of the patients before admission. Seizures were focal in 21 (46.7%), generalised in 11 (24.4%) and 13 (28.9%) had status epilepticus. Intravenous midazolam was first line therapy in 48.9%. Non-epileptic seizures were usually new onset and duration was shorter. Epileptic seizures tended to be recurrent and likely to progress to status epilepticus. However, type of seizures didn't change severity of the disease. Also, laboratory test results, medications administered before admission, requirement and duration of ventilation, mortality and length of stay was not significant between epileptic/non-epileptic patients.

Conclusion Seizures in critically ill children that may evolve into status epilepticus is an important condition requiring attention regardless of cause. Intensified educational programs for PICU physicians and international guidelines are necessary for a more efficient approach to children with seizures.

PO-0291 BRAIN DEATH AND ORGAN DONATION OF CHILDREN

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Objective To define the demographic characteristics, clinical features and outcome of patients with brain death and to emphasise the importance of organ donation in children.

Setting Centre I: 14-bed, tertiary care Paediatric Intensive Care Unit (PICU).

Centre II: Tertiary care Intensive Care Unit (ICU), Trauma centre.

Methods Data were collected from September 2009 to October 2012 retrospectively. Twenty children who were diagnosed as brain death were included. Data including demographics, disease leading to brain death, duration of brain death evaluation, ancillary tests to confirm the brain death, complications and outcome, duration of hospitalisation, status of survival and organ donation were collected for statistical evaluation.

Results The mean age were 6.2 ± 5.3 (median:3.8) years. Male/female ratio was 1.85. Disease leading to brain death was traumatic brain injury in 11(55%) patients. The mean duration of brain death evaluation was 6.7 ± 6.4 (median:4) and 1.7 ± 1 (median:1) days in Centres I and II respectively. The duration of hospitalisation was 12.5 ± 10.7 (median:7.5) days. Electroensefalography (EEG) was applied in 18(90%) patients. Complications included diabetes incipitus in 9(45%) cases. Duration of survival was 9.8 ± 9.4 (median:6) days. One of the patients' parents give consent to organ donation in Centre I while 4 parents accepted organ donation in Centre II. The study demonstrated that duration of brain death evaluation in Centre I was longer when compared to Centre II ($p < 0.05$). There was no difference between centres in obtaining concepts of organ

donation, survival after the diagnosis of brain death and length of stay in PICU ($p > 0.05$).

Conclusion The early diagnosis of brain death and prompt evaluation of the patients by the ICU physicians once the diagnosis is considered will probably yield better organs and reduce costs. Training of the PICU physicians, nurses and organ donation coordinators and increasing the awareness of the children via public means may increase the families' acceptance rate for organ donation in future.

PO-0292 PAEDIATRIC OUT-OF-HOSPITAL PATIENTS: A POPULATION-BASED STUDY

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Background and aims The incidence and distribution of paediatric out-of-hospital (OOH) emergencies are not known, and the need for paediatric OOH services has not been studied on a population level. We wanted to study the characteristics and epidemiology of paediatric OOH care. We hypothesised this could ameliorate the design of paediatric emergency medical services (EMS) and the education of their personnel.

Methods We studied all (n = 1869) dispatched emergency calls and the connected EMS patient records for paediatric patients (age 0–16 y) in Helsinki, Finland (population 0.6 M, paediatric population 91 000) during a 12-month period (2012). Patient characteristics, diagnoses, time intervals, medical treatments, procedures, vital measurements and outcome of OOH treatment were available for analysis.

Results Paediatric OOH emergencies were relatively rare (1869 calls, or 4.5% of all emergency calls; yearly incidence 20:1000 in the population). Toddlers were frequently involved, as a third of patients were 0–2 y old. Three causes (falls, dyspnoea, seizures) made up nearly half (37%) of all paediatric emergencies, and the majority (80%) concerned previously healthy children. After evaluation by the EMS, only half of the patients (54%) needed ambulance transportation to hospital. Cardiac arrest, or need for advanced life support measures (e.g. intubation), were rarities.

Conclusions Paediatric OOH emergencies are rare and have specific characteristics differing from the adult population. EMS should be designed and their personnel trained for evaluation and management of most frequent situations.

PO-0293 MANAGEMENT OF CEREBRAL ARTERIOVENOUS MALFORMATION WITH HAEMORRHAGE

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Background and aims We retrospectively analysed cases of cerebral haemorrhage from arteriovenous malformation (AVM), admitted to a PICU of a tertiary hospital to determine management strategies and outcome.

Methods Data were collected retrospectively from a departmental database between 2009 to 2014.

Results 10 patients, all previously fit and well presented with spontaneous cerebral haemorrhage in the context of previously undiagnosed AVM. Median age at diagnosis was 12,5 years (8–15 years). (7 male, 3 female)

All patients presented with headache and decrease in Glasgow coma scale.

All patients had CT scan and angiogram as part of their initial evaluation and MRI for follow-up. Intracranial pressure monitoring devices were inserted in all patients and 5 required emergency craniotomy for haemorrhage evacuation. 6 required embolisation and 4 underwent gamma knife stereotactic radio surgery.

5 patients needed inotropic support with nor adrenaline during the first 24–36 h, 6 developed arterial hypertension during their PICU stay.

Median length of stay in PICU 9,5 days (3–19 days). Median length of invasive ventilation 7 days (2–16 days), 1 patient received a tracheostomy after several failed extubation trials.

Follow up after six months – one year showed seven patients with improving neurological signs, mostly hemiparesis, ataxia and diplopía. Two were asymptomatic and one patient has not reached the six month follow-up yet.

Conclusions Treatment of cerebral haemorrhage in context of arteriovenous malformation includes a multidisciplinary approach with satisfactory results in neurological outcome on follow-up.

PO-0294 WITHDRAWN

PO-0295 EARLY NEONATAL HYPOCALCEMIA IN INFANTS BORN TO MOTHERS WITH HIGH PREVALENCE OF HYPOVITAMINOSIS D AND RELATION TO BIRTH SIZE

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Introduction Neonatal hypocalcemia is a potentially life-threatening condition, with reported prevalence varying by gestational age, maternal and infant comorbidities, and perinatal factors.

Objectives Because of the high prevalence of vitamin D deficiency in pregnant women (60%) in Qatar we measured serum Ca in a random sample of newborns admitted to the neonatal unit in HMC for 6 consecutive months and correlated seum calcium level to gestational age, birth weight, length and head circumference, and mothers' weight.

Results (Table) : The incidence of hypocalcemia in our preterm and full term neonates was significantly higher (3%) compared to those reported in the literature. There was no statistical difference in the incidence of hypocalcemia between term and preterm groups. Serum Ca was correlated significantly with birth wt, length, BMI and head circumference ($r = 0.26, 0.25, 0.32, 0.25$ respectively, $p < 0.05$).

Discussion Despite high prevalence of vitamin D deficiency in pregnant women in Qatar (60%) early neonatal hypocalcemia was detected only in 3% of both term and preterm newborns. These findings point out to a well-functioning adaptation mechanism that prevents hypocalcemia in newborns to mothers with hypovitaminosis D.

Conclusion This high incidence of neonatal hypocalcemia necessitates vitamin D supplementation to pregnant women in this population with high prevalence of vitamin D deficiency.