INCIDENCE OF ACUTE KIDNEY INJURY IN NEONATES UNDERGOING EXTRA-CORPOREAL MEMBRANE OXYGENATION

Background and aims The incidence of AKI in critically ill neonates is estimated at 6–24% with 10–61% mortality. Whilst the incidence of AKI in neonates undergoing ECMO is unknown, its presence independently predicts mortality. We audited the incidence of AKI in neonates on ECMO in our centre against the published incidence of AKI in a similar cohort of neonates undergoing congenital cardiac disease surgery with cardiac bypass.

Methods All neonates who underwent ECMO due to respiratory disease in one year were included (n = 24). The case notes, fluid balance charts and laboratory data were reviewed. AKI was graded based on published RIFLE criteria.

Results Twenty-five percent of neonates developed AKI; 1 (4%), 2 (8%) and 3 (13%) were graded as “Risk”, “Injury” and “Failure” respectively based on creatinine rise alone. If reduced urine output was 3 (13%) and 2 (8%) and 4 (17%) respectively.

Conclusions The incidence of AKI in our cohort was lower than the published cohort used as the audit standard. Nevertheless, there was a higher proportion of more severe AKI in our cohort. This may be accounted for by the emergent rather than elective planning and our higher proportion of more severe AKI in our cohort. When controlled for age (13–18 years) no statistical difference was observed. Discharge planning was better in the PICU group (p < 0.001).

Conclusion Given that most paediatric AICU patients were teenagers, the medical care was comparable in between AICU and PICU. Follow-up care, however, was better planned for PICU patients.

MALIGNANT PERTUSSIS IN INFANTS: FACTORS ASSOCIATED WITH A POOR OUTCOME

Background Malignant pertussis (MP) affects young infants and is characterised by respiratory distress, associated with permanent tachycardia and hyperleukocytosis up to 50 × 10^9/L, leading to multiple organ failure and death in 75% of cases. Leukodepletion aims to improve prognosis.

Methods This study aimed at identifying factors associated with death and evaluating the impact of treatment on the outcome. We reviewed the records of the infants ≤3 months, hospitalised in 7 French paediatric intensive care units (PICUs) from January 1, 2008 to November 13, 2013 with a diagnosis of pertussis, admitted for respiratory distress, with or without white blood cell count (WBCC) >50 × 10^9/L. Treatment modalities (leukodepletion and/or ECMO) were compared to Rowlands’ proposition (Rowlands et al, paediatrics 2010).

Results Twenty-three infants were included, 17 were intubated. Nine of 23 (40%) died: they presented more frequently cardiovascular failure (100% vs 36%, p = 0.003) and pulmonary hypertension (PHT) (100% vs 29%, p = 0.002) than survivors. Fatal cases presented CRP level at emergency >20 mg/l (85% vs 14%, p = 0.003) and increased their WBCC three times faster than survivors (15 × 10^9/L/C2 vs 5 × 10^9/L/C2, p = 0.013). Leukodepletion was performed in 10 cases (43%), 7 survived. For 15/23 patients, the treatment followed Rowlands protocol, resulting in a 73% survival rate (11/15).

Conclusions A CRP level over 20 mg/l at hospital admission and an increase of WBCC >15 × 10^9/L/C2 were associated with death. Early determination of CRP, early monitoring of WBCC every 12h, and determination of PHT by echo should be helpful in predicting the progression of MP and initiating leukodepletion.
**Poster abstracts**

**Results** For 72 children (31 girls, 41 boys), 91 decision-making meetings were organised. We identified 27.7% (20/72) disagreements or conflicts: 4 simple disagreements, 12 continuing disagreements and 4 conflicts. Five children had acute disease and 15 children had chronic disease. Source of disagreements was continuing LST in 19 cases (families wanted to continue aggressive treatment). In 1 case, the family wanted to stop treatments despite medical opinion (refusal of tracheotomy). Consequences of these disagreements were continuation of treatments despite LST decisions in 12 cases. For 3 cases a compromise solution was found.

**Conclusion** Disagreements are frequent in decisions to forgo LST (27.7%) and most of the child undergo treatments that are medically futile.

**IS THERE SUFFERING IN CHILDREN FOUR YEARS AFTER A PICU ADMISSION?**

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**Background and aims** In a previous study on suffering of children during admission to a paediatric intensive care unit (PICU), we found that parents described suffering of their child mainly in relation to physical symptoms. In this study we evaluated if these children still have signs of suffering four years after the PICU admission and if the symptoms of suffering, as perceived by the parents, are different compared to the PICU period.

**Methods** A structured audio taped interview with 15 parents of children four years after admission to a 20 bed level III PICU of a university teaching hospital to assess whether their child perceived to suffer and to identify perceived aspects of suffering.

**Results** About 50% of the parents experienced 4 years after PICU admission suffering in their child. Parents of 8 children did not perceive suffering in their child. Parents indicated that the suffering during the PICU admission was due to physical and psychosocial factors. Psychosocial factors were related to the disease causing the admission to the PICU, the treatment and the hospital stay. Four years later the signs of suffering are related to physical symptoms. In this study we evaluated if there are still feelings of suffering in parents four years after PICU admission.

**Conclusion** A child’s admission to a PICU causes long term suffering in the parents. Caregivers in paediatrics need to be aware of these phenomena and should give attention to these aspects in the follow up support.

**NONINVASIVE VENTILATION AND ALVEOLAR RECRUITMENT MANOEUVRE IMPROVE RESPIRATORY FUNCTION DURING INDUCTION OF ANAESTHESIA OF NEWBORN WITH HIGHER LEVER INTRA-ABDOMINAL PRESSURE**

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**Background** Morbid obesity predisposes patients to lung collapse and hypoxemia during induction of anaesthesia. The aim of this prospective study was to determine whether noninvasive positive pressure ventilation (NPPV) improves arterial oxygenation and end-expiratory lung volume (EELV) compared with conventional preoxygenation, and whether NPPV followed by early recruitment manoeuvre (RM) after endotracheal intubation (ETI) further improves oxygenation and respiratory function compared with NPPV alone.

**Methods** 24 patients with higher lever intra-abdominal pressure (15.2 ± 2.4 cm H₂O) were randomised to receive 5 min of either conventional preoxygenation with spontaneous breathing of 100% O₂ (CON), NPPV (pressure support and positive end-expiratory pressure), or NPPV followed by RM (NPPV+RM). Gas exchange was measured in awake patients, at the end of preoxygenation, immediately after ETI, and 5 min after the onset of mechanical ventilation. EELV was measured immediately after ETI and 5 min after mechanical ventilation. The primary endpoint was arterial oxygenation 5 min after the onset of mechanical ventilation. Intra-abdominal pressure (IAP) was controlled by Cron. Results are presented as mean ± SD.

**Results** At the end of preoxygenation, PaO₂ was higher in the NPPV and NPPV+RM groups (382 ± 68 mmHg and 362 ± 71 mmHg, respectively; both p < 0.001) compared with the CON group (297 ± 49 mmHg) and remained higher after ETI (234 ± 90 mmHg and 206 ± 94 mmHg, in the NPPV and NPPV+RM groups, respectively; both p < 0.01 compared with the CON