Conclusions This study has observed a difference in survival related to oxygen tension status, with a trend to worsening survival from hypoxia through to hyperoxia. Confirmation of this preliminary finding is required in a larger cohort before embarking on a randomised controlled trial.

**807** HYPOCORTISOLEMIA IN SICK CHILDREN ON PAEDIATRIC INTENSIVE CARE UNIT (PICU): TRANSIENT OR CAUSE FOR CONCERN

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**Background and Aims** Cortisol insufficiency has been reported in sick children with severe sepsis, post-cardiac surgery, and may contribute to rapid cardiovascular collapse. Hypothalamic-pituitary-adrenal axis dysfunction may play a role in low-cardiac-output syndrome. We performed a review of PICU patients to describe cortisol levels in those with suspected adrenal insufficiency.

**Methods** Retrospective review of PICU patients (general and cardiac cases) over 6 months from April to September 2011, who had cortisol levels checked and/or received hydrocortisone.

**Results** Total PICU admissions were 519, of which 30 (5.7%) patients had cortisol levels. Most common indication for cortisol assessment was refractory hypotension (73%) in cardiac and sepsis patients. 12/30 (40%) had cortisol levels < 500nmol/L (suboptimal response to stress), and 2/12 had undetectable cortisol levels. Of 12 with low cortisol, 50% were post-operative cardiac neonates and 50% were mix of other post-operative and chronic illness, 75% were hypotensive on inotropes and one-third of these received hydrocortisone in PICU. Hydrocortisone dose used was variable. None of the septic children had low cortisol in our study group, 50% of hypocortisoltemia patients were followed up by endocrine team and had normal cortisol levels on follow-up. 10/30 (33%) patients with suspected adrenal insufficiency died (50% had hypocortisoltemia).

**Conclusions** Our data shows that hypocortisoltemia patients were followed up by endocrine team and had normal cortisol levels on follow-up. 10/30 (33%) patients with suspected adrenal insufficiency died (50% had hypocortisoltemia). It is known that patients re-admitted to the PICU during the same hospitalization have significantly adverse outcomes. Prevention of unplanned re-admissions to the Paediatric Intensive Care Unit (PICU) is a key factor when considering the quality of care received by our patients. All admissions to the PICU during 2011 were examined and all re-admissions to the unit were identified. A re-admission was defined as those requiring PICU < 48 hours following discharge. Patients who were re-admitted for an elective procedure within the specified time were discounted.

**Results** During 2011, 511 children had 615 admissions to the PICU. 12 children were re-admitted for acute care having deteriorated in the ward setting. 2 of the 12 children required 2 re-admissions. 5 of the re-admissions took place between April and September. The remaining 9 occurred during October to March.

**Conclusions** It remains a subject of debate as to whether or not any of the re-admissions could have been avoided as hindsight is always easy. With nearly double the amount re-admissions occuring during the winter months, it could be argued that the children were discharged prematurely due to bed pressures. This a serious concern and one which we will continue to monitor.


**808** UNPLANNED READMISSION TO THE PAEDIATRIC INTENSIVE CARE UNIT (PICU), CAN IT BE PREVENTED?

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**Background and Aims** It is known that patients re-admitted to the PICU during the same hospitalization have significantly adverse outcomes. Prevention of unplanned re-admissions to the Paediatric Intensive Care Unit (PICU) is a key factor when considering the quality of care received by our patients.

**Methods** All admissions to the PICU during 2011 were examined and all re-admissions to the unit were identified. A re-admission was defined as those requiring PICU < 48 hours following discharge. Patients who were re-admitted for an elective procedure within the specified time were discounted.

**Results** During 2011, 511 children had 615 admissions to the PICU. 12 children were re-admitted for acute care having deteriorated in the ward setting. 2 of the 12 children required 2 re-admissions. 5 of the re-admissions took place between April and September. The remaining 9 occurred during October to March.

**Conclusions** It remains a subject of debate as to whether or not any of the re-admissions could have been avoided as hindsight is always easy. With nearly double the amount re-admissions occurring during the winter months, it could be argued that the children were discharged prematurely due to bed pressures. This a serious concern and one which we will continue to monitor.


**809** PROSPECTIVE STUDY OF PEDIATRIC CARDIAC ARREST IN EUROPEAN AND LATINOAMERICAN INTENSIVE CARE UNITS

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**Objective** To study the characteristics of cardiac arrest (CA) and the results of resuscitation in pediatric intensive care units (PICU).

**Patients and methods:** Prospective, international, multicentred study. Children between 1 month and 18 years who suffered CA in the PICU were included. Sustained return of spontaneous circulation (ROSC) and survival at hospital discharge were analyzed.

**Results** 304 CA episodes in 250 patients were registered, 96 (31.6%) in latinoamerican and 208 (68.4%) in European hospitals. Mean age was 47.9 months, mean weight 16.4 kg and 55.6% males. The most common causes of CA were cardiac (55.9%), respiratory (31.6%) and sepsis (15.3%). ROSC was attained in 68.1% of the cases but only 40.4% survived. ROSC was higher in European 75.9% than in Latinamerican 55.4% PICUs (p = 0.001). Patients with good neurological scales before CA (PCPC <=5) had significantly higher ROSC rates (74.5% vs 33.3%; p = 0.006). Patients who had suffered a previous CA had lower ROSC percentages (51.7% vs 71.1%; p = 0.08). Respiratory and cardiac CA have higher survival rates (40% and 56.3%) than sepsis (15.3%), and neurologic and traumatic causes (31.7%) (p < 0.001). Initial respiratory arrests achieved higher survival rates than primary CA (49% vs 35.1%; p = 0.029). Patients previously receiving inotropic drugs survived less than those who received no medication (51.3% vs 58%; p < 0.001).

**Conclusions** Although 68% of patients who suffered a CA attained ROSC only 40% of them survived. Ethiology of CA, type of initial arrest and previous treatment with inotropics influence survival in PICU cardiac arrest.

**810** MORBIDITY AND MORTALITY IN CRITICALLY ILL CHILDREN WITH SPONTANEOUS INTRACEREBRAL HEMORRHAGE

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**Background and Aims** Spontaneous intracerebral hemorrhage (ICH) accounts for approximately half of stroke in childhood with...