

pressure) recommendations were formulated concerning a standardised IAH and ACS monitoring as well as a rational therapeutic management (including medical, interventional and surgical therapy options). While in adults an IAP of 12 mmHg is regarded as dangerous, an IAP of at the latest 10 mmHg must be looked upon as IAH in children. The additional appearance of a new or aggravated organ dysfunction marks the transition into an ACS, whose diagnosis should result in the quickest possible abdominal decompression. If a decompressing laparotomy does not suffice for a durable IAP diminution itself, a prophylactic open-abdomen concept must be considered (syn.: laparostomy). The concept of abdominal perfusion pressure (APD = MAP - IAP) can facilitate the assessment of the pathogenetic influence of IAH in daily clinical practice.

**Discussion** In the context of former surveys, paediatric intensivists often justified their widespread uncertainty and restraint with respect to regular IAP measurements and timely introduction of invasive therapy options (if indicated) with the lack of age-related guidelines and definitions. This first publication of paediatric IAP limiting values and management recommendations therefore represents an essential treatment progress and a therapeutic decision support, which should submit a significant reduction in morbidity and mortality of IAH and ACS in children and adolescents.

**Conclusion** Since the evidence of the underlying literature has to be classified on average as low, well-designed multicenter studies are urgently needed to enable a critical reevaluation of these consensus results.

#### PS-136 IMPLEMENTING FLEXIBLE BRONCHOSCOPY IN A PICU – A SAFE AND USEFUL TECHNIQUE

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10.1136/archdischild-2014-307384.430

**Background and aims** In 2011 we started implementing flexible bronchoscopy in our PICU for management of critically ill patients and children with home ventilation. It was our goal to implement this technique as a routine diagnostic an interventional tool and to characterise possible benefits and risks.

**Methods** This is a prospective study performed in a 10-bed paediatric ICU of a tertiary care children's hospital. All patients who underwent a bronchoscopy in the years 2012–2013 were included in this study. Olympus and Storz bronchoscopes with 2.2 mm, 2.8 mm and 3.8 mm diameter were used and every procedure was video documented. All procedures were performed by trained paediatric intensive care specialist.

**Results** 151 procedures were performed in 96 patients. Indications were: Treatment of atelectasis and obstruction (78 of 151 procedures), with improvement in ventilation parameters in 61 of 78 procedures (78%); search for airways anatomic pathologies (45 of 151 procedures), with pathological findings in 26 of 45 procedures (58%); Pneumonia and undetermined lung disease in which cases BAL was preformed (29 of 151 procedures), with changed antimicrobial treatment in 17 of 29 cases (59%). We didn't observe any procedure-related mortality or serious complications.

**Conclusions** Flexible bronchoscopy is a very safe and useful procedure in critical ill infants and children with a variety of diseases, and significantly contributes to their management. In our opinion bronchoscopy should be a routine technique in paediatric intensive care units.

#### PS-137 LOW BIOCHEMICAL NUTRITIONAL INDICES PREDICT CLINICAL OUTCOMES IN CHILDREN UNDERGOING CARDIAC SURGERY

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10.1136/archdischild-2014-307384.431

**Aim** To determine whether biochemical nutritional indices predict clinical outcomes in children undergoing cardiac surgery.

**Methods** Retrospective single centre study between July 2012 and June 2013. Biochemical nutritional indices included serum albumin and total lymphocyte count (TLC) which was used to calculate Onodera's prognostic nutritional index (PNI) [ $10 \times$  serum albumin (g/dL) +  $0.005 \times$  TLC (/mL)]. Severity of illness assessed using Paediatric Risk of Mortality (PRISM) III score. Surgery categorised using the risk adjusted classification for congenital heart surgery (RACHS-1) score. Outcomes included hospital mortality, paediatric intensive care unit (PICU) length of stay (LOS) and duration of mechanical ventilation (MV).

**Results** Total of 31 patients identified. Median age was 2.0 (0.7–41.0) months. Median PRISM III score was 8.0 (5.0–13.0). 14 (45%) underwent RACHS-1 category 2 surgery and 6 (20%) had ventricular septal defects. Median albumin and TLC were 3.2 (2.6–4.2) g/dL and 4280 (2810–5100)/uL respectively. Median PNI score was 52.7 (41.2–69.7). There was no hospital mortality. Median PICU LOS was 5.0 (3.0–8.0) days. Hypoalbuminaemia  $\leq 3.0$  g/dL associated with longer median PICU LOS (7.0 vs. 4.0 days,  $p = 0.016$ ) and duration of MV (156 vs. 33 h,  $p = 0.007$ ). PNI  $\leq 58$  associated with longer median PICU LOS (6.0 vs. 3.0 days,  $p = 0.041$ ). Adjusting for age and RACHS-1 score, for every 1 g/dL drop in albumin, PICU LOS increased by 0.5 days ( $p = 0.006$ ).

**Conclusions** Hypoalbuminaemia and PNI  $\leq 58$  were associated with adverse postoperative outcomes. Future studies to study effect of perioperative aggressive nutrition care on biochemical indices and clinical outcomes.

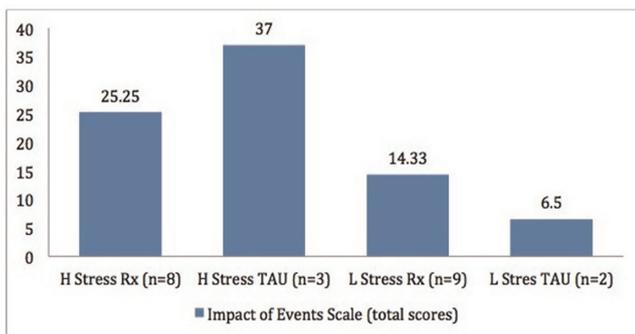
#### PS-137a A BRIEF INTERVENTION TO IMPROVE PARENT POST-TRAUMATIC STRESS SYMPTOMS FOLLOWING PAEDIATRIC CRITICAL ILLNESS: A PILOT RANDOMISED CONTROLLED TRIAL

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10.1136/archdischild-2014-307384.432

**Background and aims** Admission to paediatric intensive care (PIC) has been linked to subsequent post-traumatic stress symptoms (PTSS) in parents. This study aimed to obtain initial estimates regarding the effect of a brief intervention on parent PTSS and explore the mediating effect of baseline parental stress.

**Methods** Parents of children aged 4–16 years old were randomised to intervention versus treatment as usual (TAU). The intervention was delivered within six weeks of discharge from hospital and included a psycho-educational booklet and telephone call. Parents' baseline stress was measured using the Parental Stressor Scale: PICU. Parents were followed-up a median of 5 months post discharge from PICU and measures of PTSS were obtained using the Impact of Events Scale.



**Abstract PS-137a Figure 1** Post-traumatic stress symptoms in parents at 5 months post PICU discharge in the intervention (Rx) and Treatment as usual [TAU] groups, split according to baseline parental stress score (H=high stress; L=low stress)

**Results** Although not statistically significant, parents in the intervention group (n = 17) fared better than parents in the TAU group (n = 6): They reported fewer PTSS [19.47 (95% CI 11.64–26.62) vs. 25.83 (95% CI 11.47–39.00)] and fewer were at risk for clinical disorder (18% vs. 33%) (Cohen's d = 0.38 and 0.34 respectively). However, there were potential implications for screening: "High stress" parents in the intervention group had lower PTSS scores than "high stress" TAU parents (d = 1.06), whereas "low stress" parents in the intervention group had higher PTSS scores than "low stress" TAU parents (d = 0.47) (See Figure 1).

**Conclusions** Pilot data indicate that a brief intervention could have a significant impact on parent PTSS following paediatric critical illness, but this needs to be evaluated in a sufficiently powered RCT.

#### PS-137b ANESTHESIOLOGY AND INTENSIVE CARE FOR RENAL TRANSPLANTATION IN CHILDREN

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10.1136/archdischild-2014-307384.433

**Introduction** Renal transplantation in children has special anaesthesia and postoperative intensive care, mainly for low birth weight. These features concern methods of intraoperative filling, surgical techniques and postoperative immediate resuscitation. Thus, maintaining adequate perfusion of the graft and the prevention of thrombosis of vascular anastomoses remain the main objectives of the perioperative phase. The aim of this study is to describe the procedures for anaesthesia and intensive care during surgery and immediate postoperative in paediatric renal transplantation in our unit.

**Materials and methods** Prospective descriptive study spread over 7 years, from January 2007 to February 2014, covering all paediatric renal transplant patients admitted to the children of our university hospital. Were collected epidemiological data of patients and grafts, duration of intubation and intensive care unit stay, haemodynamic, biological and therapeutic settings, and changing data of our patients.

**Results** Fourteen cases were collected with an average age of 11.32 years (range 6.5 to 16 years). Antecedents were repeated urinary tract infection (21.4%), nephrectomy (21.4%) and heart disease in one case. Nephropathy was the most common cause

of chronic terminal renal failure (6 cases), followed by uropathies (5 cases). The dialysis modalities were peritoneal dialysis (66.7%) and hemodialysis (33.3%). The anaesthetic technique was by inhalation of sevoflurane in 10 cases and intravenously in 4 cases. Consisted of monitoring an invasive blood pressure (radial artery) and a central venous pressure (CVP) (jugular) in all patients. The average duration of anaesthesia was 6.64 h. The extubation was performed after surgery in 9 cases and resuscitation in 5 cases with a mean duration of postoperative ventilation 4.6 h. The average time of warm ischemia was 1.85 h and that of the 1.07 h of cold ischemia. Mannitol was administered in 14.3% of cases, and two cases were transfused red blood cells. Drugs administered intraoperatively were : dopamine (21.4%), diuretics (21.4%) and antihypertensive (14.3%). The period of normalisation of renal function postoperatively was : day 1 (71.4%), day 3 (14.3%), day 6 and day 25 in the same proportion (7.1%). Postoperative complications were kind of viral pneumonia in a patient, hyperglycemia in two patients, infection of the peritoneal fluid drainage in a patient and hypertension in 4 patients. The average length of intensive care unit stay was 1.28 days (range of 0.7 to 3 days). No deaths have been deplored.

**Conclusion** In paediatric renal transplantation, intraoperative and immediate postoperative periods emerge as the main objective of the graft infusion sufficient to prevent the occurrence of complications and ensure its survival. Although the activity of paediatric renal transplantation remains generally low in Morocco since 2007, this practice has made much progress in our country, for the survival and rehabilitation of children, once condemned.

## Intensive Care II

#### PS-138 FLUID OVERLOAD IS ASSOCIATED WITH MORTALITY IN PAEDIATRIC ACUTE RESPIRATORY DISTRESS SYNDROME (ARDS) ONLY IN THE SETTING OF ACUTE KIDNEY INJURY (AKI)

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10.1136/archdischild-2014-307384.434

**Background** Cumulative fluid balance on day 3 is associated with mortality in paediatric ARDS (Valentine 2012, Willson 2013). Whether this association is modified by AKI is unknown.

**Aim** To test the effect of AKI on the association between fluid and mortality in ARDS.

**Abstract PS-138 Table 1** Patient characteristics

Characteristic (Mean ± SD)	No AKI (n = 153)	AKI (n = 56)
Age, Months	86 ± 73	86 ± 74
Male (%)	86(56)	31(55)
P/F Ratio	174 ± 106	156 ± 103
PRISM 3*	13 ± 8	21 ± 11
Day 3 Fluid Balance (100 mL/kg)*	0.61 ± 0.97	1.1 ± 1.59
Mortality (%)*	12(7.8)	14(25)

\*\*p < 0.01; all other p-values >0.05.