Bronchiolitis is a common cause of respiratory illness in children resulting in significant pressures on health services. Hospitalisation occurs in up to 3.5% of cases and 10% of these will require admission to the paediatric intensive care unit (PICU).

**Aim** To review the patient characteristic's for all infants (less than 1 year old) who were admitted to the regional PICU requiring invasive ventilation for bronchiolitis, over the 10 year period from 1st January 2003 to 31st December 2012.

**Method** Data was retrospectively collected for all infants admitted to the regional PICU from PICANet data, the retrieval database and discharge letters were then reviewed. A range of data was collected including gestational age, age at presentation, presence of apnoeas, length of ventilation, length of stay, Respiratory syncytial virus status, use of inotropes and pre-existing diagnoses (particularly congenital heart disease and chronic lung disease).

**Results** 256 infants were invasively ventilated, there were 4 deaths (all had significant co-morbidities). 82% of admissions were between November and January. There was a male predominance and two thirds of the infants ventilated were less than 2 months at presentation. The Mean length of PICU stay was 8 days and mean number of days ventilated 6. 16% of patients required inotropic support. Interestingly 43% of infants with congenital heart disease who were ventilation for bronchiolitis required inotropes. As found by previous studies, apnoea was a common feature, this was associated with prematurity (64% of infants <32 weeks, 65% 32–37 weeks, only 30% infants greater than 37 weeks).

**Conclusion** This study highlights high seasonal pressure on PICU of bronchiolitis and that apnoeas are a significant risk factor for PICU admission. It also shows that although bronchiolitis is commonly thought to be a single organ disease, it can have cardiovascular consequences.

## G387(P) ABSTRACT WITHDRAWN

## G388(P) EARLIER EXTUBATION IS ASSOCIATED WITH A REDUCTION IN EARLY POST-OPERATIVE COMPLICATIONS IN CHILDREN UNDERGOING SURGERY FOR NON-IDIOPATHIC SPINAL DEFORMITY

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**Introduction and aims** Surgical correction of non-idiopathic spinal deformities in children presents a challenge to intensivists because of the extensive nature of the surgery and co-morbidities of the patients. The postoperative management of such patients has not been standardised. Following a review of our practice,[1] we have implemented a strategy of earlier extubation in those patients requiring post-operative ventilatory support, including increased use of non-invasive ventilation (NIV). This study aimed to assess the impact of this change in practice.

**Methods** All patients admitted to PICU following surgery for non-idiopathic spinal deformity were identified from the PICANet database for the time periods: (1) 1.1.07–31.12.08 (n = 64) and (2) 1.9.10–31.8.13 (n = 137). Details of the post-operative courses were obtained from the hospital casenotes and the PICU clinical information system.

**Results** The cohorts were similar with respect to age (mean (SD) 13.0(3.3) years v 12.8(4.2) years, p = 0.70), gender (male 52% v 47%, p = 0.77) and proportion of patients with neuromuscular curve (53% v 46%, p = 0.43). A similar proportion received invasive ventilation (IV) in PICU (42% v 49%, p = 0.52) but the duration of IV was significantly shorter in the more recent cohort (median (IQR) 41(77.5) hours v 20(23) hours, p = 0.004). 11(17%) patients received NIV in cohort 1 compared to 45(33%) in cohort 2 (p = 0.07). The total duration of respiratory support was reduced in cohort 2 but this did not reach statistical significance (median 4.0(8.2) v 2.4(4.6) days, p = 0.20). Postoperative complications occurred in 26(41%) cases in cohort 1 and 37(27%) in cohort 2 (p = 0.04), with a trend to reduced gastrointestinal complications in cohort 2 (16% v 9% patients, p = 0.11). Median duration of post-operative hospital admission was 9(9) days in cohort 1 and 10(6) days in cohort 2 (p = 0.50).

**Conclusions** Early extubation, facilitated by use of NIV, is associated with a reduction in early post-operative complications. Other factors impacting the post-operative course require further study so that the pathway for these complex patients can be further refined.

### REFERENCE

1 McDougall C, McFadzean J. Post-operative respiratory support following surgery for non-idiopathic spinal deformity in children. *Pediatr Crit Care Med.* 2011;**12** (Suppl):A119

## G389(P) A CASE FOR EARLY AMMONIA TESTING IN ALL ENCEPHALOPATHIC PATIENTS: FEMALE PATIENTS WITH X-LINKED ORNITHINE TRANSCARBAMYLASE DEFICIENCY

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We report the case of a 14-year-old girl admitted to PICU following a four-day history of vomiting, unusual behaviour and progressive drowsiness. She had depressed consciousness and encephalopathic features, thus requiring intubation and ventilation. The initial CT and MR scans were unremarkable and an encephalopathy screen, including plasma ammonia was performed on admission.

Shortly after admission the patient developed seizures and signs of raised intracranial pressure with a right fixed, dilated pupil. The pre-ictal ammonia concentration was markedly elevated at 638umol/L. A repeat urgent CT brain showed diffuse cerebral oedema with signs of brain herniation; neuroprotective measures were therefore initiated. Attempts to rapidly reduce ammonia levels by haemofiltration and infusions of sodium benzoate and phenylbutyrate were biochemically successful. Despite a quick decline in ammonia levels the patient developed central diabetes insipidus and showed no signs of neurological recovery, with persistent fixed, dilated pupils. Biochemical investigations strongly suggested a diagnosis of ornithine transcarbamylase deficiency (OTCD) with low citrulline and increased urinary orotic acid. DNA for mutation analysis and a liver biopsy or enzyme studies were sent to confirm the diagnosis. Brain stem testing 5 days post- admission confirmed brain stem death.

OTCD is the commonest inborn error of the urea cycle and shows X-linked inheritance. The classic presentation in male hemizygotes is with life threatening hyperammonaemic coma