Background and aims If infants fail to initiate spontaneous breathing after birth, international guidelines recommend positive pressure ventilation (PPV). However, mask PPV remains challenging with leakage occurring commonly. Despite a variety of available facemasks, none has been systemically studied in newborn infants. We aimed to determine if using a Fisher and Paykel (FP) round facemask would reduce mask leak compared to using a Laerdal round facemask during mask PPV in preterm infants.

Methods From April to September 2013, at the Royal Alexandra Hospital, newborn infants were enrolled; mean±SD gestation 28±3 weeks; birth weight 1210±448 g, 30(52%) male, 39(67%) born by caesarean section. Apgar scores at 1 and 5 min were 5±3 and 7±2, respectively. Infants randomised to the FP facemask and Laerdal facemask had similar mask leak (37±17% vs. 33±12%, respectively, p=0.30) and tidal volume (7.3±3.0 mL/kg vs. 6.9±2.7 mL/kg; p=0.73) during PPV. There were no significant differences in ventilation rate, inflation time or airway pressures between groups.

Conclusions The use of either facemask during PPV in the delivery room yields similar mask leak.

Results

Conclusions Intubation success rates of inexperienced doctors were significantly improved, OR 2.81 (95% CI 1.54–5.17), when the instructor was able to share their view on a videolaryngoscope screen.

Nephrology I

O-070 HAEMODYNAMIC IMPACT OF THE CONNECTION OF CONTINUOUS RENAL REPLACEMENT THERAPY IN CRITICALLY ILL CHILDREN

B Toledo, MJ Santiago, SN Fernández, M García, AC Sánchez, J Del Castillo, J López-Herce. PICU, Hospital General Universitario Gregorio Marañón, Madrid, Spain

Background Continuous Renal Replacement Therapies (CRRT) are the treatment of choice for critically ill children with Acute Renal Injury. Hypotension after starting CRRT is frequent but there are no studies that have analysed their incidence and importance.

Patients and methods A prospective, observational study was performed including critically ill children treated with CRRT between October 2009 and December 2013. Hemodynamic data and connection characteristics were collected before, during and 60 min after CRRT circuit connection. Hypotension with the connection was defined as a decrease in mean arterial pressure >20% from baseline and/or intravenous fluid expansion and/or if increase in vasopressors was required.

Results

Conclusions Hypotension after CRRT connection is very frequent in critically ill children. Priming the circuit improves hemodynamic tolerance of the connection.

Oral abstracts

Videolaryngoscopy as an intubation training tool for neonatal trainees – a randomised controlled trial

L O’Shea, M Thio, COF Kamin, J McGregor, J Jabal, C Roberts, C Kusche, PS Davis. Department of Newborn Research, Royal Women’s Hospital, Melbourne, Australia

Background and aims Endotracheal intubation is a mandatory skill for neonatal trainees. However, inexperienced trainees have success rates <50%. We compared intubations supervised by an instructor watching a videolaryngoscope screen with the traditional method where the instructor does not have this view.

Methods

A prospective, observational study was performed including critically ill children treated with CRRT between October 2009 and December 2013. Hemodynamic data and connection characteristics were collected before, during and 60 min after CRRT circuit connection. Hypotension with the connection was defined as a decrease in mean arterial pressure >20% from baseline and/or intravenous fluid expansion and/or if increase in vasopressors was required.

Results

Conclusions Hypotension after CRRT connection is very frequent in critically ill children. Priming the circuit improves hemodynamic tolerance of the connection.

Salt-sparing diuretic action of a urea analogue inhibitor of urea transporters UT-A and UT-B in rats

Background and aims Urea is end metabolite of protein metabolism and is crucial for generation of hypertonic renal medulla. Urea transport to medullary interstitium is facilitated by urea transporters (UT-A and UT-B). UT inhibitors have potential use as a novel class of salt-sparing diuretics.

Methods UT inhibitor effect of urea analogue dimethylthiourea (DMTU) was investigated and characterised in cell-based assays.

Abstract O-069a Table 1

<table>
<thead>
<tr>
<th>Control (n = 102)</th>
<th>Intervention (n = 104)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected gestation (w)*</td>
<td>29 (27–32)</td>
<td>29 (27–32)</td>
</tr>
<tr>
<td>Weight (g)*</td>
<td>1125 (816–1569)</td>
<td>1172.5 (819–1884)</td>
</tr>
<tr>
<td>Success rate – n (%)</td>
<td>42/102 (41.2%)</td>
<td>69/104 (66.3%)</td>
</tr>
<tr>
<td>Success rate without premedication – n (%)</td>
<td>35/79 (44.3%)</td>
<td>56/78 (71.8%)</td>
</tr>
<tr>
<td>Success rate without premedication – n (%)</td>
<td>7/23 (30.4%)</td>
<td>13/26 (50%)</td>
</tr>
<tr>
<td>Lowest SpO₂ (%)*</td>
<td>69 (46–82)</td>
<td>70 (47–83)</td>
</tr>
<tr>
<td>Lowest heart rate (bpm)*</td>
<td>151 (139–162)</td>
<td>150 (134.5–163.5)</td>
</tr>
<tr>
<td>Duration of attempt (s)*</td>
<td>53 (41–70)</td>
<td>51 (39–63)</td>
</tr>
</tbody>
</table>

* median (interquartile range)