immunization was performed under continuous cardiorespiratory monitoring.

Conclusions Preterm infants who received diphtheria-tetanus-pertussis-inactivated polio-Haemophilus influenzae type B and pneumococcal vaccine before discharge were more likely to temporarily experience prolonged apnea and bradycardia after immunization. Continuous mobile event monitoring of these infants was a helpful tool to detect clinically significant cardiorespiratory events.

<table>
<thead>
<tr>
<th>Lung function variable</th>
<th>EPT/ELBW % variance</th>
<th>Controls % variance</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEV1</td>
<td>0.887 (0.058)†</td>
<td>0.554 (0.071)†</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FVC</td>
<td>0.676 (0.058)†</td>
<td>0.586 (0.067)†</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FEV1/FVC</td>
<td>0.422 (0.051)†</td>
<td>0.384 (0.063)†</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>FEF25%-75%</td>
<td>0.772 (0.071)†</td>
<td>0.561 (0.070)†</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Changes in Respiratory Variables Between 8 and 18 Years

Results Lung function data were obtained from 187/298 (63%) EPT/ELBW subjects and 147/262 (56%) controls at both 8 and 18 years. There were strong positive relationships between lung function results at 18 years with results obtained at 8 years in both groups (Table).

Conclusions There are strong linear relationships between lung function values at 8 and 18 years in both EPT/ELBW survivors and controls.

Adherence to treatment (defined as the active, voluntary, collaborative involvement of the patient in a mutually acceptable course of behavior to produce a desired preventive or therapeutic result) is not always simple, and for adolescents suffering from chronic conditions even less. Adolescence is a time of transitions: from childhood to adulthood, from education to employment, from pediatrics to adult health, from controlled treatment to treatment control. This means that they have to manage their treatment (which may cause problems with their parents who had this function until then) and have the right to disagree (which may cause problems with their health care providers).

In fact, among adolescents with chronic diseases, treatment adherence rates vary widely depending on the condition: from 98–99% for cancer to 77% for mild asthma or 55–86% for renal transplant recipients, for example. Nevertheless, and although self-report is often overestimated, part of the variation among adherence rates is also due to what kind of cut-off point for good/acceptable adherence is used.

Although there are many factors influencing adherence (such as side effects, taste, motivation or severity of the condition to mention a few), there is fair amount of literature related to the predictors of a good or a poor adherence. This presentation will explore the main causes of non-adherence among youths and practical and relatively simple ways to increase their adherence rate.

Methods Eighteen-year follow-up of participants born either EPT/ELBW in 1991–92 in the state of Victoria and randomly selected term, normal birthweight controls. Lung volumes and flows, including the forced expired volume in 1 second (FEV1), forced vital capacity (FVC), the FEV1/FVC, and the forced expiratory flow (FEF25–75%) were measured at 8 and 18 years of age according to standard guidelines and results converted to Z-scores for age, height and gender.

Conclusions Preterm infants who received diphtheria-tetanus-pertussis-inactivated polio-Haemophilus influenzae type B and pneumococcal vaccine before discharge were more likely to temporarily experience prolonged apnea and bradycardia after immunization. Continuous mobile event monitoring of these infants was a helpful tool to detect clinically significant cardiorespiratory events.

Aims To determine the stability of lung function test results of extremely preterm (EPT; < 28 weeks’ gestational age) or extremely low birthweight (ELBW; birthweight < 1000g) survivors between 8 and 18 years of age compared with term controls.

Methods Eighteen-year follow-up of participants born either EPT/ELBW in 1991–92 in the state of Victoria and randomly selected term, normal birthweight controls. Lung volumes and flows, including the forced expired volume in 1 second (FEV1), forced vital capacity (FVC), the FEV1/FVC, and the forced expiratory flow (FEF25–75%) were measured at 8 and 18 years of age according to standard guidelines and results converted to Z-scores for age, height and gender.

Results Lung function data were obtained from 187/298 (63%) EPT/ELBW subjects and 147/262 (56%) controls at both 8 and 18 years. There were strong positive relationships between lung function results at 18 years with results obtained at 8 years in both groups (Table).

Abstract 82 Table 1

Conclusions There are strong linear relationships between lung function values at 8 and 18 years in both EPT/ELBW survivors and controls.
Tissue perfusion is the ultimate goal of a functional cardio-circulatory system and its integrity should remain the essential endeavor of all caregivers in charge of hemodynamically compromised patients. The postoperative cardiac patients are not the exception. Optimization of tissue perfusion after cardiac surgery is multifactorial and should be based upon invasive and non-invasive markers. Physiological elements to be considered and supported with medical therapy include: pre and afterload, cardiac contractility, heart rate and rhythm (determining cardiac output), analysis of systemic and pulmonary vascular resistances, evaluation of the systolic but also the diastolic function, and optimization of oxygen content, transport, extraction and consumption. All of the latter are to be managed taking into account elements related to microcirculation, cardiopulmonary and interventricular interactions and the neuro-humoral mechanisms triggered by the shock status. This conference will review decision-making processes, and therapeutic strategies related to general management principles, drugs (inotropic, lusitropic, vasodilator and vasoconstrictor medications), ventilation, and salvage therapies, amongst others.

**Conclusions**

Abnormal adrenal function according to critical care definition. Difference in catecholamine requirement in children with normal or abnormal adrenal function (p<0.05 vs. controls). Troponin, ventricular and intestinal lactate levels were reduced in vasopressin-treated piglets (p<0.05 vs. controls), with no difference in histological analysis among groups.

**Background**

Cardiovascular dysfunction, a consequence of perinatal asphyxia, contributes significantly to its morbidity and mortality. The use of vasopressin, an endogenous hormone commonly given to adults with refractory shock, in neonates is limited by concerns over mesenteric perfusion. We recently showed that vasopressin had dose-dependent baro-specific effects with possible cardioprotection at low doses (0.005–0.01 units/kg/h) in a swine model of neonatal hypoxia-reoxygenation (H-R). We aimed to compare systemic and regional hemodynamic effects of low-dose vasopressin and dobutamine, a synthetic beta-adrenoceptor agonist.

**Methods**

Piglets (1–5 day-old, 1.6–2.2kg) were anesthetized and instrumented to continuously monitor systemic hemodynamic parameters including cardiac output (CO), and carotid and mesenteric flow indices. After 2h of hypoxia (10–15% O2), piglets had normoxic reoxygenation for 4h. In a blinded randomized fashion, piglets received either vasopressin (0.01 units/kg/h started at 30min of reoxygenation) or dobutamine (20 mcg/kg/min started at 2h of reoxygenation) (n=8/group). H-R controls (placebo) and sham-operated piglets were also performed. Plasma troponin-I levels, tissue lactate levels and histology of left ventricle and small bowel were analyzed.

**Results**

H-R piglets had cardiogenic shock and metabolic acidosis, which recovered upon reoxygenation. During recovery CO, carotid and mesenteric flows gradually deteriorated and were increased similarly in vasopressin- and dobutamine-treated piglets (p<0.05 vs. controls). Troponin, ventricular and intestinal lactate levels were reduced in vasopressin-treated piglets (p<0.05 vs. controls), with no difference in histological analysis among groups.

**Conclusion**

Low-dose vasopressin improves systemic and regional hemodynamics similarly to dobutamine and confers a cardioprotective effect in a swine model of neonatal H-R.

**Low-dose Vasopressin is Cardioprotective in an Acute Swine Model of Neonatal Hypoxia- Reoxygenation**

doi:10.1136/archdischild-2012-302724.0086

JS Pelletier, J LaBossiere, RS Gill, CM Sergi, D Bigam, B Dicken, PY Cheung, Surgery, Laboratory Medicine and Pathology, Pediatrics, University of Alberta, Edmonton, AB, Canada

**Background**

Adrenal dysfunction is associated with increased inotropic requirement and worse clinical outcome in children with sepsis. In children after bypass surgery a very low incidence of adrenal dysfunction is reported. However, use of hydrocortisone has been described in PICU and identify risk factors for their development.

**Methods**

Retrospective analysis of adrenal function testing of children requiring catecholamines after cardiac surgery. We aimed to evaluate the adrenal function of this subgroup of children requiring catecholamines after cardiac surgery.

**Results**

There were 64.7 ADE/1000 patients-day in the prospective survey of all patients admitted to PICU, we expect to find many ADE in this setting. Our aims are to describe ADE found in PICU and identify risk factors for their development.

**Conclusion**

Little is known about drugs pharmacokinetics and pharmacodynamics in children. Renal and hepatic functions are not mature yet. Many drugs are used “off-label”. So, children are more susceptible to adverse drug events (ADE) than adults. As many drugs are used in pediatric intensive care units (PICU), we expect to find many ADE in this setting. Our aims are to describe ADE found in PICU and identify risk factors for their development.

**Methods**

Six-month prospective cohort of all patients admitted to a single PICU. ADE were identified by active search and classified by Naranjo’s algorithm. Risk factors were identified by multivariate analysis.

**Results**

240 pediatric admissions occurred and 110 ADE were observed in 84 patients. Median age was 51 months. Only 39 of 240 patients didn’t have chronic status. Principal ADE were hyponatremia, hyperglycemia, hypokalemia. Drugs involved in most ADE were antibiotics, diuretics, antiepileptic, sedatives and analgesics and steroids. Age under 4 years, length of stay in PICU and number of drugs used are risk factors to ADE.

**Conclusions**

There were 64.7 ADE/1000 patients-day in the present study. Hyponatremia, hypokalemia and hyperglycemia are the...