

(40.0%), as compared with 194 of 419 infants assigned to placebo (46.3%). Further results are shown in the table.

**Conclusions** The reduction of the primary outcome (death before 36 weeks or BPD) by inhaled budesonide in ELBW infants was of borderline statistical significance. Inhaled budesonide significantly reduced BPD, which is a component of our primary outcome and was a predefined secondary outcome.

## Cardiac Failure in Congenital Diaphragmatic Hernia: Cause or Consequence?

IS-004 THE HEART BEYOND THE LUNG

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Congenital diaphragmatic hernia (CDH) is in many respects a disorder of the circulation. Pulmonary hypertension due to abnormal pulmonary vasculogenesis and function results in increased afterload on the right ventricle (RV), and via mechanisms of ventricular interdependence in turn leads to biventricular cardiac failure. Recent work suggests that RV function in CDH may be a central determinant of illness severity, and not simply a secondary “side-effect” of pulmonary hypertension. New echocardiographic imaging modalities have revealed insights into cardiac performance in CDH, including the importance of early diastolic dysfunction. Diastolic dysfunction appears to be related to clinical course including early outcomes in CDH. Improved understanding of the role of cardiac function in CDH may allow better early prognostication and inform therapeutic decisions including timing of surgery. New treatment paradigms incorporating early assessment and targeted therapy to optimise cardiac function may allow us to improve outcome in CDH.

## Circulation/PDA

IS-005 PHYSIOLOGY OF PATENT DUCTUS ARTERIOSUS

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The ductus arteriosus (DA) does one thing with its life, it constricts after birth in response to rising pO<sub>2</sub>, achieving functional closure often by 24 h. If it fails to constrict or close, it remains as a passive conduit with movement of blood determined by the relative pressure at each end. Constriction and closure in well preterm babies occurs in similar time frame to term babies but in the very immature or unwell preterm, this process can fail.

The early postnatal constriction of the preterm ductus predicts its subsequent behaviour with good constriction predicting closure and poor constriction predicting persisting patency. Because pulmonary pressures in preterm babies tend to be sub-systemic even early after birth, the dominant direction of shunting is left to right. In those where constriction fails, large movements of blood from the systemic to pulmonary circulation can occur. The haemodynamic impact of this can be much earlier than is widely appreciated with large PDA being a stronger predictor of low systemic blood flow early after birth than later and overload of the pulmonary circulation, apparent as pulmonary haemorrhage, within the first 24–36 hrs.

This pathophysiology suggests that early intervention will be needed to make a difference to DA related morbidity. The predictive properties of early DA constriction provides an opportunity to target early treatment. This has been tested in the pilot DETECT trial with a reduction in pulmonary haemorrhage. Larger RCTs that embrace the above physiology in their design are needed.

## Enteral Nutrition

IS-006 OPTIMISING ENTERAL NUTRITION IN THE PREMATURE INFANT

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Both postnatal nutritional deficit and postnatal growth restriction represent major issues in preterm neonates and have been associated with adverse long-term outcome. Optimisation of enteral nutrition without increasing the risk of necrotizing enterocolitis (NEC) has thus become a priority in preterm neonates. Due to their immaturity premature infants are frequently started on parenteral nutrition and then switched with different times and methods to enteral nutrition. Most recent ESPGHAN recommendations for enteral nutrition suggest for an average preterm infant a pro kg daily supply of 110–135 kcal, 3.5–4 g proteins, and 4.8–6.6 g lipids, inclusive of medium chain triglycerides if added, and adequate amounts of linoleic and alpha-linolenic acids, arachidonic and docosahexaenoic acids. The use of human milk for preterm infants has increased over the past decade reflecting an improved awareness of the benefits of human milk. A number of breast milk components have been credited with anti-inflammatory properties reducing clinical morbidities such as NEC and sepsis in the preterm infant. However, as breastfeeding is quite difficult for premature infants, a comprehensive approach to standardising preterm infant nutrition is essential to optimise the collection, storage, fortification and delivery of human milk to preterm neonates. Many questions remain unresolved such as the definition of optimal postnatal growth velocity, the most effective way of transition from parenteral to enteral nutrition and the role of compounds such as probiotics and prebiotics. As a matter of facts, there is great heterogeneity in nutrition practices among neonatal units, with frequent discrepancies.

## Joint AAP, EPA and EAP Session – Child Health Inequalities. Can we Make a Difference?

IS-007 EUROPEAN PAEDIATRIC ASSOCIATION

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**Avoiding Unnecessary Variations and Diversities of Child Health Care Systems in Europe** Paediatrics in Europe is characterised by the diversity, variety and heterogeneity of health care offered in