0-12). One infant received exchange transfusion, blood group immunization was diagnosed in only one infant (AB0). Prenatal steroids caused lower TsB (p=0.003) while initial acidosis increased TsB (p=0.015). Increased TsB was also associated with development of persistent ductus arteriosus (p=0.03), the degree of intraventricular hemorrhage (p=0.015), death (p=0.025), and possible neurologic sequelae at discharge (p=0.02).

Conclusions: Significant hyperbilirubinemia is common in extremely premature infants in spite of treatment. TsB seems to be associated with both prenatal and neonatal conditions as well as final outcome. Blood group immunization seems to be significantly underdiagnosed in these infants.

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PRONGS OR MASK FOR NASAL CONTINUOUS POSITIVE AIRWAYS PRESSURE IN PRETERM INFANTS (THE POM TRIAL): A RANDOMISED TRIAL

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Background: Preterm infants frequently receive support with nasal continuous positive airways pressure (NCPAP) via nasal prongs or a nasal mask. While both prongs and masks may cause trauma to the nose, it is not clear which is more effective.

Objective: To compare the effectiveness of NCPAP given via prongs and mask to preterm infants. We hypothesise that the use of prongs compared to masks will reduce the rate of intubation and ventilation within 72 hours of starting NCPAP.

Methods: Infants < 30 weeks gestation receiving NCPAP with the Infant Flow Driver or SiPAP system (Viasys, USA) are randomised to either prongs or mask. Infants are block randomised stratified for gestational age (< 28 weeks, 28-30 weeks); and according to whether NCPAP was started as a primary treatment for respiratory distress or post-extubation. Infants are intubated and ventilated if they reach pre-determined criteria for respiratory failure (2 or more of worsening distress; FiO2 > 0.4; pH < 7.2; PaCO2 > 9 kPa; recurrent apnoea) < 72 hours after commencing NCPAP. All other aspects of treatment are the same between the groups. Relevant secondary outcomes are recorded.

Results: Since enrolment began (02/08/2009) 64 infants have been recruited and had the primary outcome determined. We expect that the primary outcome will be determinable for the total sample (120 infants) by early October 2010.

Conclusion: This randomised controlled trial will provide valuable information about the optimal interface to use when giving NCPAP to preterm infants.

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COMPARISON OF CEREBRAL TISSUE OXYGENATION INDEX AND CARDIAC OUTPUT IN INFANTS WITH BIRTH WEIGHT LESS THAN 1250 GRAMS

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Background and Aims:

(1) To correlate cerebral tissue oxygenation index (cTOI) and cardiac output measurements in infants with birth weight less than 1250 g during first 48 hours of life

(2) To correlate these measurements with clinical parameters

Methods: A prospective observational study. Newborns with birth weight < 1250g were eligible for enrolment. Superior vena cava (SVC) flow, right and left ventricular outputs were measured. Patent ductus arteriosus was assessed and cTOI was measured. All measurements were done at 6, 12, 24 and 48 hours of age. Various clinical parameters (including mean blood pressure, mean airway pressure, pH, pO_2, pCO_2, O_2 saturations) were also recorded.

Results: 10 neonates were enrolled following parental consent. The mean birth weight was 767 g (SD±184), mean gestational age was 25.3 weeks (SD±1.4). Mean SVC flow at 6 hours of age was