Neonatal General

**PS-192** NEONATAL TRANSFUSIONS IN NEW SOUTH WALES, AUSTRALIA: A POPULATION BASED STUDY

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**Background** Previous reports of transfusion practices in neonates have focused predominantly on premature neonates admitted to neonatal intensive care units (NICU). Population data on neonatal transfusions is limited.

**Methods** This study used linked population-based data from New South Wales (NSW) birth and hospital discharge data to determine rates of blood and blood product transfusion in the first 28 days of life. The study included all livebirths of at least 23 weeks gestation in NSW between 2001 and 2011, providing data on one-third of all Australian births.

**Results** Of 989,491 livebirths, 6,436 received a blood product transfusion (6.5 per 1000 births). 56% were born < = 32 weeks gestation (n = 3594, 272/1000 births) and 44% were >32 weeks gestation (n = 2842, 2.9/1000 births). 8% received transfusions in a hospital without a neonatal or paediatric ICU.

The rate of transfusions of blood and blood products in neonates increased between 2001 and 2011 (5.7/1000 to 7.0/1000, p < 0.001).

**High transfusion rates were seen in neonates with a prior intrauterine transfusion (667/1000), congenital anomaly requiring surgery (437/1000) or haemolytic disorder (132/1000). 48% received red cells alone, 29% received red cells plus other blood products and 24% received other blood products without red cells.

**Conclusions** High rates of transfusions are seen in preterm neonates and in those undergoing surgery or with haemolytic disorders. Rates of neonatal transfusion increased in NSW between 2001 and 2011, primarily due to reported increased use of plasma and gamma globulin.

**PS-193** QUANTITATIVE CRANIAL ULTRASOUND (CRUS) ANALYSIS IN RELATION TO OUTCOME AT 2 YEARS IN PRETERM INFANTS

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**Introduction** CRUS is an important prognostic variable in prematurity, although with some limitations. Quantitative CRUS techniques might have the potential to overcome some of those limitations.

**Objectives** To investigate whether a semi-quantitative method of CRUS analysis correlated with developmental outcome at 2 years in a cohort of preterm infants, and to compare this method with clinical variables and CRUS qualitative evaluation.

**Methods** Cohort of 88 <33 weeks gestational aged (GA) infants underwent several CRUS scans from birth to term. This last scan was analysed using a quantitative texture method (LBR),

**Conclusions** CRUS Quality Score (QS) was analysed using a quantitative texture method (LBR), underwent several CRUS scans from birth to term. This last scan

**Abstract PS-193 Table 1**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>AUC</th>
<th>Significance</th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tr>
<td>Language</td>
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<td>0.50</td>
<td>0.83</td>
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<td>0.044</td>
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</tbody>
</table>

**Abstract PS-193 Figure 1**

eventually obtaining 3 Quantitative Scores (QS). Outcome variables included abnormal Bayley Scales of Infant Development (3rd edition): Motor, Cognitive, and Language composite scores (<1SD); and Any Developmental Impairment (any abnormal previous result or a vision or hearing impairment).

**Results** Mean GA was 29.0 (SD 2.2). Hearing and vision deficits were present in 3 patients. Abnormal scores occurred 9.1% in cognitive, 11.4% motor, 18.2% language and 23.9% NDI. QS significantly correlated to all outcome variables (p values: cognitive = 0.003, motor = 0.011, language = 0.015, NDI = 0.036). ROC analysis is shown in table. When clinical information and CRUS abnormalities were added in logistic regression analysis, QS added significant information (R2 Nagelkerke) in all but motor outcome (Figure).

**Conclusions** Quantitative analysis of CRUS may add significant information to standard qualitative evaluation with regards to outcome at 2 years in preterm infants.

**PS-194** THE EFFICACY OF NON-NUTRITIVE SUCKING AND SUCROSE FOR THE RELIEF OF PAIN DURING EYE EXAMINATIONS FOR RETINOPATHY OF PREMATURITY: A RANDOMISED CONTROLLED TRIAL

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**Background and aims** Screening of eyes is necessary in infants at risk of retinopathy of prematurity (ROP). Although local anaesthetic drops are administered before eye examination, most infants are highly scored on validated pain scores such as the Premature Infant Pain Profile (PIPP) during examination. We aimed to determine the efficacy of oral sucrose combined with non-nutritive sucking (NNS) for reducing pain during eye examination.

**Methods** This was a randomised, controlled study of infants for ROP screening. All infants enrolled in the study met the criteria...
SUCROSE VERSUS BREASTFEEDING FOR VENIPUNCTURE IN TERM INFANTS. A RANDOMISED, PROSPECTIVE, CONTROLLED STUDY WITH ANALYSIS OF THE SPECIFIC CORRECTIVE RESPONSE

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Background and aims Sucrose and breast milk during painful procedures are reported to decrease pain behavioural expression in neonates. Recent data showed a persistent cortical pain response while using the sucrose during a painful procedure.

To compare the efficacy of sucrose versus breast milk for specific-pain brain activity relief during a painful procedure in neonates.

Methods Randomised, prospective, controlled study. Each term newborn was randomly assigned to sucrose or breastfeeding group at day 3 during a systematic venipuncture. Change in the total haemoglobin concentration in the controlateral somatosensory cortex (Near Infra-red Spectroscoy, NIRS) was assessed 10 seconds before and after the venipuncture. Neonatal Facial Cod- ing System (NFCS) was assessed 2 min before and at the time of the venipuncture. Groups were compared using Wilcoxon test for the variations in NIRS and Chi-square test for the NFCS scores.

Results 113 newborns were included (sucrose: 56; breastfeeding: 57) with a mean (sd) of 39.3 (9) weeks of gestational age and 3370 g (478) for birth weight. 103 were analysed for the NIRS (sucrose: 55; breastfeeding: 48). Median (quartiles) of total haemoglobin concentration change was -8.5 µmol/L (-34.5; 12.5) for sucrose group and 12.3 µmol/L (-23.4; 39.3) for breastfeeding group with no statistical difference (p = 0.06). NFCS scores were significantly different with 46.8% with a painful score in the breastfeeding versus 26.8% in the sucrose (p = 0.03).

Conclusions No difference were found between sucrose and breastfeeding on specific-pain brain activity during a venipuncture in term newborns. A discordance was revealed between NFCS scores and NIRS analysis.