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USE OF EXHALED CO₂ DETECTOR FOR NEONATAL INTUBATION

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Background: Endotracheal intubation is a common procedure performed in NICU. Sometimes, it is difficult to confirm the successful intubation using standard methods like auscultation. Exhaled CO₂ detectors have been widely used in paediatric and adult population and sparingly in neonates. It has been felt that it is an effective confirmation technique for successful intubations.

Aim: To determine whether use of exhaled CO₂ detector during neonatal intubation reduces number of attempts during neonatal intubation and increases the certainty about successful intubation.

Method: Data were collected for each intubation on a pre-designed proforma at tertiary neonatal unit for three months before (Group A) and after introduction of exhaled CO₂ detector (Group B). Data were obtained as part of an audit so ethical approval was not required.

Results: Thirty seven intubations were performed in Group A (8 excluded-data inadequate) and twenty five in Group B. There were no statistically significant differences between two groups as far as numbers of attempts are concerned. Certainty of successful intubation increased significantly with the use of exhaled CO₂ detector, Group A 22/29 versus Group B 24/25, p value 0.02. We also noted that haemodynamic parameters were similar in both the groups.

Conclusion: Using an exhaled CO₂ detector reduces uncertainty about endotracheal tube placement but does not reduce number of attempts at intubation.

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USE OF CRANIAL ULTRASOUND SCAN (CUSS) IN NEONATAL ABSTINENCE SYNDROME

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Background: Anecdotal reports have shown neuroanatomical abnormalities in babies linked

to maternal cocaine use. Hence, many neonatal units offer cranial ultrasound scan to babies born to mothers who have used cocaine. There is no strong evidence base for this clinical practice.

Aim: To assess usefulness of cranial ultrasound scans in management of babies born to mothers using cocaine.

Method: Retrospective review of cranial ultrasound findings of neonates born to cocaine using mothers.

Result: Out of fifty six babies born to mothers using cocaine, cranial ultrasound scans were performed on forty four babies. Forty one of these were reported as normal. Echogenic lesions were noted on ultrasound scans in three babies and in two of them, the lesions disappeared/improved. Only one baby was followed up in clinic for three months and was subsequently discharged.

Conclusion: CUSS in neonates whose mothers have used cocaine does not provide any important information regarding neuro-developmental outcome.

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EARLY COMUNICATIVE AND LANGUAGE DEVELOPMENT IN PRETERM INFANTS WITHOUT NEUROLOGICAL DAMAGE

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Aims: This study aims to explore the role of biological and environmental factors as predictors of the early communicative and language development, comparing 12 Italian preterm infants without central nervous system insults and 12 Italian full-term infants.

Method: All participants were assessed longitudinally through the questionnaire "Il Primo Vocabolario del Bambino" (PVB), administered monthly to the mothers between 11 and 18 months of age. Assessing preterm infants both chronological age and age correction for prematurity were applied. The measures derived by PVB were: gestures production, words comprehension and production in each age.

Results: Results - on the basis of chronological age - indicated that preterm infants exhibited an

initial and transient delay and disharmonic profiles in all aspects examined, with scores within the lower limits of typical development range. Otherwise, on the basis of age correction, preterm infants show performances, since the first observations, on or over the mean value.

Conclusions: Using the age correction for prematurity the communicative and language abilities of preterm infants were overestimated and the initial delay of language development was underestimated. Findings are discussed considering the role of gestational age, but also of environmental factors, on early language development and the utility of correct age on the assessment of preterm infants during the second year of age.

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AN UNUSUAL PRESENTATION OF MECKEL'S BAND IN THE NEONATAL PERIOD

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Background and aims: We report a neonate with a 'four vessel' umbilicus, intrauterine volvulus and intestinal perforation secondary to a persistent Omphalomesenteric duct (OMD) / Meckel's band.

Case description: A female infant was born at 38 weeks in poor condition requiring extensive resuscitation. She was noted to have a grossly distended, tense, discolored abdomen with distended veins, diaphragmatic splinting and hypovolaemic shock. Four vessels were visualized in the umbilicus, one of which was an unusual brown color and a diagnosis of volvulus secondary to OMD remnant considered.

Abdominal x-ray showed a moderately distended, featureless abdomen. Ultrasound scan showed gross ascites of an abnormal dense echogenicity with intestinal debris in keeping with perforation.

Laparotomy findings included bowel perforation, Meckel's band with volvulus, and a large meconium cyst. The unviable distal small bowel and ascending colon, which had volved around the OMD band, were excised. A stoma was fashioned proximal to this. She made a good recovery prior to discharge.

Conclusions: Our case highlights the clinical significance of a 'fourth umbilical vessel' and the risks of OMD bands. Failure to recognise a persistent OMD remnant in the umbilical cord, or

to refer the neonate for further investigation, may place the newborn at risk of developing serious complications in early life.

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EFFECT OF INTRAPARTUM OXYTOCIN ADMINISTRATION ON NEONATAL SEPARATION REFLEXES

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Background and aims: The impact of exogenous OT on primitive neonatal reflex has not been thoroughly investigated. The objective of the study is to evaluate the effect of OT used during induced labour on neonatal separation reflexes and time of crying.

Methods: Observational descriptive study approved by Local Ethical Committee. 22 women with their first term pregnancies were studied. All had singleton, healthy pregnancies and epidural analgesia was used. Newborns were vaginal delivered and immediately placed in skin-to-skin contact (SSC) with the mother. Patients were excluded if no immediately SSC was applied (n=7), caesarean section was made after study inclusion (n=3) or newborn was admitted in NICU (n=1). 11 patients fulfilled inclusion criteria. SSC was performed during >5 m at 34±13.4h of life; then, 4 neonatal separation reflexes (Moro, stretch arms and legs, and crying) were recorded and again placed in SSC. A blind observer evaluated reflexes. Time to get calm was measured with a stopwatch. Patients were asked to sign a letter of consent.

Results: Mean GA and birthweight was 39±1.3w and 3339.7±252.2g respectively. Mean OT dose was 1749.8±1971.5 mUI. Mean neonatal separation reflexes observed were 52.2±28.4%. A trend towards a negative correlation was found between the amount of OT infused during labour and the amount of neonatal separation reflexes observed (r= -0.56; p=0.07). Mean time to stop crying was 57.1±74.2s. No correlation was found between OT dose and time to get calm (r=-0.36; p=0.27).

Conclusions: Total dose of oxytocin infused during labour may affect neonatal separation reflexes.