HIE grade	cTnI concentration, µg/L	Duration of inotropic support, hours
1 (n=7)	0.05 (0.02 - 0.09)	0 (0 - 24)
2 (n=20)	0.12 (0.08- 0.20)	24 (12 - 48)
3 (n=15)	0.67 (0.41-2.06)	48 (40 - 76)

[Troponin I and severity of HIE]

Serum cTnI concentrations and duration of inotropes were significantly greater with increasing severity of HIE ($p < 0.0001$ and $p < 0.001$ respectively, Kruskal-Wallis test).

Conclusion: Cardiac troponin I concentrations correlate strongly with clinical grade of HIE and with duration of inotropic support in asphyxiated neonates. These data suggest a direct correlation between clinical severity of HIE and the severity of myocardial dysfunction.

947

EVALUATION OF PAROXYSMAL ACTIVITY ON AEEG AND EEG TRACINGS DURING COOL CAP TREATMENT OF ASPHYXIATED NEWBORNS WITH HIE

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Aims: To evaluate the incidence, type and duration of paroxysmal activity on aEEG and simultaneous EEG activity during therapeutic cranio-cerebral hypothermia in term severely and moderately asphyxiated newborns.

Methods: aEEG tracings of 23 newborn infants with severe and moderate HIE undergoing therapeutic cranio-cerebral hypothermia were studied. Single-channel aEEG together with regular EEG were obtained with OLYMPIC GFM 6000 monitor. Bifrontal placement of electrodes was used. An interelectrode impedance was maintained at the level of 5 kOhm. aEEG was monitored continuously from the moment of diagnosis of HIE to the 15-th day of life. All the aEEG tracings during the entire period of aEEG monitoring were reviewed together with regular EEG tracings in zones of concern.

Results: There were "saw tooth" patterns or episodes of elevation of the lower margin of band of aEEG activity detected in the tracings of all 23 babies undergoing cool cap treatment with simultaneous paroxysmal activity on EEG. In all the patients these encephalographic changes were treated with phenobarbital. In 14 cases aEEG seizures were observed together with clinically apparent seizures, at least before cooling. In majority of patients aEEG seizures were observed throughout and beyond the period of head cooling despite the phenobarbital treatment.

Conclusions: Electroencephalographic seizures are common in asphyxiated newborn undergoing neuroprotective hypothermia, in many cases without clinical manifestations. aEEG monitoring may be helpful in evaluation of CNS condition and indicates that the anticonvulsive treatment probably needs to be enhanced during cranio-cerebral hypothermia.

948

INFLUENCE OF DIFFERENT MODES OF DELIVERY ON SUCCESSFUL BREASTFEEDING FOR HEALTHY TERM INFANTS

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Objective: The objective of this study was to explore how different modes of delivery influenced on successful breastfeeding for healthy term infants.

Methods: The subjects studied were 1,167 healthy term infants and their mothers in Takatsuki General Hospital with tertiary perinatal center in 2008. All of them were encouraged with early skin-to-skin contact, rooming-in and breastfeeding on demand after delivery, and continuously supported in breastfeeding after discharge. They were classified into a vaginal delivery (VD) group and a cesarean section (CS) group, which were prospectively surveyed and compared with regard to the number of breastfeeding within 24 hours after birth, weight loss, exclusive breastfeeding rate in hospital, and breastfeeding rate at the hospital discharge and at 3-month-old checkup.

Results: Of all 1,167 subjects, 917 and 250 of them belonged to VD group and CS group respectively. Average number of breastfeeding within 24 hours after birth was 8.5 times in VD group and lower 7.9 times in CS group. Average weight loss was larger

in CS group (-10.2%) than that in VD group (-7.8%). Exclusive breastfeeding rate in hospital was lower in CS group (53.6%) compared with VD group (69.9%). However, breastfeeding rate at the hospital discharge was not significantly different between VD group (85.2%) and CS group (83.6%), and neither was that at 3-month-old checkup between VD group (70.8%) and CS group (66.7%),

Conclusion: Nearly 70% of breastfeeding rate was sustained by continuous breastfeeding support for healthy term infants until 3 months old in any mode of delivery.

949

RISK OF BRONCHOPULMONARY DYSPLASIA (BPD) IS INCREASED AFTER SURGICAL LIGATION OF DUCTUS ARTERIOSUS IN PRETERM INFANTS

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Background: Patent ductus arteriosus (PDA) with significant left to right shunt in preterm infants increases morbidity and mortality. Treatment modality can affect neonatal morbidities.

Objective: To determine whether surgical ligation of PDA increases neonatal morbidities and mortality compared with other treatment modalities in preterm infants with symptomatic PDA.

Design/methods: A total of 128 infants (25⁺36⁺6wks, 620 3710g) diagnosed as symptomatic PDA were grouped by treatment modality: Conservative group(n=36), INDO group(n=73) and OP group(n=19). We analyzed relative risks of NEC(> S2), BPD(> moderate), intraventricular hemorrhage (IVH;> G3), ROP(> S3 or operation) and BPD/death by treatment modality by multivariate logistic regression after adjustment for gestation and HMD.

Results: Gestation and birth weight were lower in OP group(29 2.5wk 1062 275g) compared with Conservative group(32 3.6wk, 1842 728g) and INDO group(30 3.2wk, 1322 462g); HMD and ventilator duration were significantly increased in OP group, but mortality were similar between groups. In multivariate analysis, OP group shows increased

risks of BPD, OR 62.7 (95% CI, 5.97,657.2, p=0.001) and BPD or Death, OR 21(95% CI, 3.9,114.8, p=0.001); In INDO group, no associations with NEC, ROP, IVH, BPD and BPD/Death..

Conclusions: Since the risk of BPD was increased after surgical ligation of PDA but not with INDO therapy, surgical ligation may not be the preferred initial treatment for symptomatic PDA in preterm infants. In the case of OP group, it is possible that factors leading to the choice of surgery or prolonged ductal patency may influence outcome.

950

LOW COMPLIANCE WITH GUIDELINES FOR RESPIRATORY SUPPORT OF PRETERM INFANTS AT BIRTH

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Objective: To investigate the compliance of clinicians with guidelines for respiratory support of preterm infants and to identify bottlenecks.

Methods: Respiratory interventions at birth in preterm infants born at the Leiden University Medical Center were observed by an independent researcher. Video recordings and recordings of airway pressure, gas flow, heart rate and oxygen saturation were reviewed with the resuscitator and compared with Dutch neonatal resuscitation guidelines.

Results: In 34 infants (mean (SD) gestational age 30.6 (3.2) weeks, birth weight 1292 (570) grams) respiratory interventions were: 8/34 (23%) none given, 3/34 (9%) continuous positive airway pressure (CPAP) and 23/34 (68%) mask ventilation followed by CPAP (6 were intubated later on). Review of the recordings showed that respiratory support was not in accordance with guidelines in 25/34 (74%) infants. In 14/34 (42%) infants choice of support was not as recommended: 6 infants received no respiratory support despite insufficient breathing and bradycardia, 2 received CPAP despite prolonged apnea, 4 received mask ventilation although breathing and heart rate were adequate and 2 infants were intubated despite sufficient breathing and adequate saturation and heart rate. In 5/23 (22%) mask ventilated infants no initial sustained inflations were given. 18/23 (78%) infants received initial sustained inflations, but 9 different