

566

PLACENTAL PATHOLOGY IS ASSOCIATED WITH NEUROLOGICAL DEVELOPMENT IN PRETERM INFANTS DURING THE FIRST TWO WEEKS AFTER BIRTH

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Background: Little is known about the association of placental pathology and neurological morbidity shortly after birth in preterm infants. Neurological condition during this period can be evaluated by the quality of general movements (GMs).

Aim: To determine whether placental pathology was associated with neurological morbidity in preterm infants during the first two weeks after birth.

Methods: Placentas from 27 singleton, preterm infants (gestational age 26-31 weeks, birth weight 615-2250 grams) were assessed for placental lesions: maternal vascular underperfusion, ascending infection, villitis placentae of unknown etiology (VUE), chronic deciduitis, fetal thrombotic vasculopathy (FTV), meconium associated changes, and other unspecified. The presence of elevated nucleated red blood cells (NRBCs) was also assessed. Neurological morbidity was determined by the quality of GMs as normal, abnormal or hypokinetic, on postnatal day 1-5, 8, and 15. Additionally a motor-optimality-score (MOS) was obtained.

Results: Examination of the placentas revealed: maternal vascular underperfusion (n=20), ascending infection (n=9), VUE (n=5), chronic deciduitis (n=9), FTV (n=5), meconium associated changes (n=6), and elevated NRBCs (n=6). FTV was associated with abnormal GMs on day 3 (p=0.043). Maternal vascular underperfusion was associated with low MOS on day 8 (p=0.064), while ascending infection was associated with high MOS on day 8 (p=0.004). No association existed between other placental lesions and GMs or MOS.

Conclusions: Placental lesions have limited effects on early neurological morbidity in preterm infants. Only on some days after birth, FTV and maternal vascular underperfusion were associated with neurological morbidity, whereas ascending infection was associated with better quality of GMs.

567

THE INFLUENCE OF GESTATIONAL AGE (GA) ON TOTAL ABSOLUTE BAND POWER (TABP) DURING THE THREE FIRST DAYS OF LIFE

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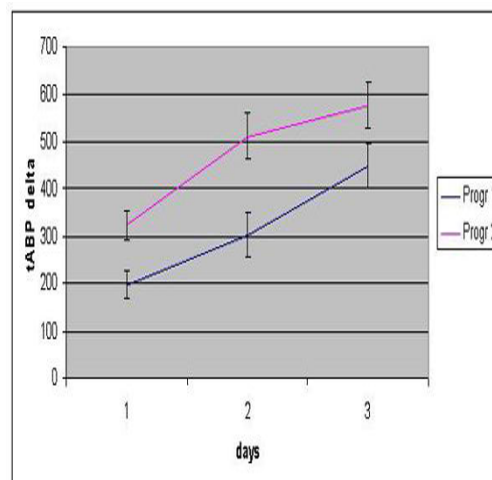
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Background: Continuous long-term multichannel EEG monitoring of the premature infant is possible. This gives information on the brain's electrical activity during the first days of life. tABP is a measure of the EEG-background activity. We have shown that automated trimming of the exported data by removal of 5% of the highest tABP-values correlates well with the visually edited recordings. It is known that the background activity depends on postconceptional age; however, what happens during the first days of life and whether there are GA dependent differences, remains to be demonstrated.

Aim: To analyse EEG background activity of the continuous EEG from day 1 to 3 using tABP and compare two different GA groups during this time period.

Methods: 42 healthy infants with GA < 31 wk were included, monitored (NicoletOne monitor) continuously for 3 days soon after birth. 8 EEG 8 electrodes were applied. The infants were divided into two groups Progr 1 GA [24+0] - [27+6] wk and Progr 2 GA [28+0] - [30+6] wk). The mean of tABP medians each day calculated showed a normal distribution and were analysed using ANOVA for repeated measurements.

Results:



[abstr2ESPR]