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Background Diagnosis of perinatal hypoxic-ischemic encephalopathy (HIE) and early prediction neurological outcome is important and difficult. The aim of this study is to determine the value of neuron specific enolase (NSE) and lactate dehydrogenase (LDH) analysis in blood serum (BS) and cerebrospinal fluid (CSF) for evaluating severity HIE and predicting long term outcome in nenates with perinatal asphyxia.
Method 90 neonates (>32 weeks gestation) with perinatal HIE were enrolled prospectively. Perinatal HIE was categorised into three stages according Sarnat and Sarnat clinical scoring system and changes seen on amplitude integrated electroencephalography. NSE and LDH analysis in BS and CSF were taken during first 48h of age. Neurodevelopment outcome was assessed at 12 months of corrected gestational age using Denver Developmental Screening Test.
Results Concentrations of NSE and LDH in CSF were significantly higher in neonates with advanced stage of HIE and corresponded well with subsequent neurodevelopment outcome ($p<0.01$). Concentrations of LDH in BS were significantly higher in neonates with advanced stage of HIE and corresponded well with MODS ($p<0.01$) and subsequent neurodevelopment outcome ($p<0.01$) while concentrations of NSE in BP were no significantly higher in neonates with advanced stage of HIE ($p>0.5$).
Conclusions NSE and LDH analysis in CSF are accurate diagnostic tool for assessing extension of hypoxic-ischemic brain damage and early identification neonates with perinatal HIE who are at high risk of developmental delay. LDH analysis in BP also might offer an inexpensive, safe and simple prognostic tests for evaluating nenates with perinatal HIE.

1102 USE OF SYNTHETIC COLLOIDS COMPARING NORMAL SALINE FOR NEURORESUSCITATION IN TERM NEWBORNS WITH SEVERE HIE

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Background and Aims There is limited data according the use of 6% solution of hydroxyethyl starch 130/0.42 in volemic resuscitation for neonates. The aim of the study was to compare the efficiency of 6% HES 130/0.42 and normal saline in the intensive care of term newborns with severe HIE.
Methods 15 full-term neonates with HIE were included. Score Sarnat II was in 9 newborns and Sarnat III was in 6 babies. The mean gestation age was 39.3±0.2 weeks. Apgar score at 1st minute was 3.8±0.1 and at 5th minute was 6.0±0.1. Routine hemodynamic parameters, lab studies and cerebral perfusion pressure (CPP = 1.1 · (Vs – Vd)/PI – 5 mm Hg) by transfontanel Doppler (Aaslid R., 1986) were collected at admission, in 1 hour and 3 hours after volume expanders infusion. The volume of normal saline was 20 ml/kg and of 6% HES 130/0.42 was 10 ml/kg. Results. Mean blood pressure at the 3 stages of study in response to 6% HES 130/0.42 administration was 48–55–55 mm Hg, after normal saline 51–53–49 mm Hg. Cerebral perfusion pressure after administrarion of HES 130/0.42 was 7.7–11.8–15.7 mm Hg, after normal saline 14.1–17.6–17.1 mm Hg.
Conclusions Use of HES 130/0.42 results in stable increasing of cerebral perfusion with normalizing of resistance index in front cerebral arteries. The effect occurs after administration of HES and remains up to 3–6 hours. Applying of HES 130/0.42 may be therapy of choice in low cerebral perfusion and/or hemodynamic instability in newborns with severe HIE.

1103 NEW POSSIBILITY OF THE USE OF PREPARATION OF LAZOLVAN AT PREMATURE INFANTS

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Introduction Ambroxol hydrochloride (drug Lazolvan) inherent anti-inflammatory and antioxidant effects that may have an impact onreducing the frequency and severity of intraventricular hemorrhage (IVH).
Purpose Installing the clinical efficacy of intravenous slow (15 min)administration of the drug Lazolvan (single dose 7.5 mg twice a day from the first days of life for 7 days).
Methods In retrospective case-control study included 50 infants with gestational age less than 35 weeks. The main group (n=18) received Lazolvan, control group not received. Before the beginning of the study formed the group did not differ among themselves on basic clinical and demographic indicators. Statistically significant group differ among themselves RDS third degree by the core group of children – 27.8% vs 6.26%; p=0.03. Clinical efficacy of the drug Lazolvan determined in terms of relative risk (RR) of IVH an indicator of patient who need to treat (NNT).
Results The relative risk of IVH in the main group 2.7 times less compared with the control group. At 2.17 times more often in terms of relative risk of IVH second degree occurred in the control group children. The treatment of 6.25 premature infants prevents a case of IVH. Newborn core group of perhaps less treated in the intensive care unit, respectively (days) 12.88±3.07 vs 9.07±3.73; p=0.0003.
Conclusions The positive results from the use of Lazolvan in the complex treatmet of premature infants with risk of IVH prove its clinical effectiveness and extend its use.

1104 LONG-TERM OUTCOME OF TERM NEWBORNS WITH PERINATAL ASPHYXIA - PREDICTIVE FACTORS

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Perinatal asphyxia represents the second most important cause of death in the NICU and an important source of neurologic long-time sequelae.
Aim To identify long-term predictive factors for neurologic sequelae in term newborns with perinatal asphyxia.
Material and Methods We conducted a prospective study on 67 term newborns with perinatal asphyxia, admitted to our NICU between 2010–2011. The following parameters were followed: Apgar scores at 1, 5, 10 minutes, cord blood pH, neurologic disorders, creatine-kinase (CK), lactate dehydrogenase (LDH), total antioxidant status (TAS) at 4, 12, 24, 48, 72 hours and 7 days, follow-up after discharge until 18 months of age.
Results Incidence of perinatal asphyxia in the NICU was 3.76%. Mean Apgar score at 1 minute was 3.58 and at 5 minutes 5.33, thus indicating the efficiency of resuscitation. Mean blood cord pH was 7.04. During the first 12 hours of life, all newborns had neurologic disorders. After the first 72 hours, this aspect was only present in 53.7% of the newborns. TAS was lowest at 12 hours (0.92 mmol/L), not reaching normal values at any moment. Survival was 91.04% and was correlated with ph (p=0.012), CK (p=0.04), LDH (p=0.02), but not TAS (p=0.063). Neurologic sequelae decreased progressively, reaching 10.45% (n=7) at 18 months. CK and LDH were predictive for sequelae (p=0.01), but not the Apgar score or TAS (p=0.08).
Conclusion Routine determinations for blood cord pH, CK and LDH can become valuable markers of long-term outcome for newborns with perinatal asphyxia, while TAS remains for further research.