DIAGNOSTICAL MARKERS OF PERINATAL HYPOXIC AND ISCHEMIC INJURY OF CENTRAL NERVOUS SYSTEM AT PREMATURENEWBORNS

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Fetal and neonatal hypoxia takes a special place among the damaging factors of central nervous system (CNS). More important place hypoxic damage occurs in premature infants, in which it is 10-15 times more often cause death of children.

Research purpose – to increase the efficiency of diagnosis of hypoxic-ischemic CNS lesions in premature infants by determining the activity of neurospecific enolase (NSE) and study energy supply during the neonatal period.

Under supervision there were 64 premature babies (26 – with mild CNS lesions, 20 – with severe hypoxic-ischemic lesions and low birth weight, 18 – with severe damage of CNS and extremely low birth weight). Comparison group include 15 conventionally healthy preterm infants.

NSE activity was determined by enzyme immunoassay using reagents of the company «Fujirebio» (Sweden). The energy supply of the newborns was evaluated after activity of succinate dehydrogenase (SDH) in blood lymphocytes and lactate dehydrogenase (LDH) in serum of blood.

Metabolic effect of hypoxia in premature infants manifested by reduction of aerobic enzyme activity of SDH and activation serum LDH, that indicated on energy deficiency and requires the development of effective methods of correcting this condition.

Perinatal hypoxia in premature neonates causes significant alteration of neuronal membranes and increase concentration in blood such neurospecific protein as NSE, whose concentration correlates with the degree of severity of CNS injury.