

# Ocena funkcji pozaślimakowej części drogi słuchowej u niemowląt ze zmianami w obrębie ośrodkowego układu nerwowego powstałymi na skutek asfiksji okołoporodowej

Assessment of retrocochlear hearing pathway activity in infants with central nervous system impairment occurring as an effect of perinatal asphyxia

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## Summary

**Introduction.** The most often changes in the central nervous system (CNS) occurring as an effect of perinatal asphyxia are found to be hypoxic-ischemic encephalopathy (HIE) in term newborns, periventricular hemorrhages (PVH) or intraventricular hemorrhages (IVH) and periventricular leukomalacia (PVL) in preterm neonates. Chronic hypoxia is considered to affect the brainstem in infants, especially nuclei of the hearing pathway are vulnerable to low oxygen level. The aim of the study was to carry out the objective assessment of the retrocochlear hearing pathway activity using ABR in infants with CNS impairment occurring as an effect of perinatal asphyxia, imaged during trans-fontanel ultrasonography. **Material and methods.** To the investigation 36 infants with HIE, IVH or PVL were included, the control group encompassed 32 born at term, health children. ABR recordings were performed in 3 months old children using Nicolet Spirit System for clicks of 85 and 80 dB nHL. **Results.** No differences were found between latencies of waves I and II. ABR latencies of waves III, IV, V and interpeak latencies I—III, III-V, I-V were significantly delayed in InvG when compared to control patients. In conclusion, the brainstem activity in infants with CNS involvement as an effect of perinatal asphyxia is lower comparing to health children. Subclinical abnormalities as prolonged synaptic transmission of electric signal in retrocochlear auditory pathway were revealed.