

VIII. Streszczenie w języku angielskim

Central auditory processing disorders are disorders of the sense of hearing resulting from abnormalities at the level of the Central Nervous System, with the proper structure and operation of its peripheral part, which cover a wide range of symptoms. Problems may be manifested by difficulties in understanding conversations in noise, simple commands, articulation, and language problems. These symptoms adversely affect children's communication skills, school achievements and social functioning. Central auditory processing disorders underlie language disorders.

The main aim of the study is to assess the central processing of auditory information and linguistic competences in children diagnosed with SLI - specific language disorders and in children from premature births. The particular aims included the analysis and assessment of the occurrence, severity and characteristic of language disorders in children with SLI and premature infants, as well as the relationship between the results in auditory processing tests and the results in TRJ (Language Development Test) obtained by children with SLI, children from premature births in relation to the results of properly developing peers. Perinatal factors that may lead to linguistic and auditory disorders in premature babies were also assessed.

The research was carried out in a group of 150 children, which consisted of three subgroups: 50 children with diagnosed SLI aged 5 to 10 years, 50 premature births aged 5 to 10 years and the control group of 50 correctly developing children, including the same age range. The battery of performed tests consisted of an interview with the parents or guardians of the child, the TRJ Language Development Test, Auditory Cognitive Event Evoked Potentials (Audio CERP), and the SAT II Tonal Screening Audiometer.

Children with SLI and premature babies express their first words, sentences, and independent statements with a significant delay in relation to properly developing peers. a significant extension of all Audio CERP components was found, in particular the P3 components, a longer reaction time to the stimulus and a low rate of correct responses to the targeted stimulus in the two studied groups. Children with SLI and premature babies obtained lower results in the SAT II questionnaire. TRJ results show that children from preterm labor show significant deficits in language development, and the lowest score concerned the TRJ Grammar - sentence repeat scale. Correlations between perinatal factors (low birth weight, shorter duration of pregnancy, hyperbilirubinemia, hypoxia) and lower TRJ results in the group of premature babies have been shown. The greatest correlation between P3 Audio

CERP component elongation and low TRJ scores in both groups is related to the ability to repeat and understand sentences.

The obtained results allowed to draw the following conclusions:

1. Latency extension components of potentials associated with the cognitive event of the auditory modality testifies to abnormalities in the processes of information analysis and processing in SLI children and premature babies.
2. Central auditory processing disorders occur in most children diagnosed with SLI and in preterm labor patients.
3. Children from preterm labor have significant deficits in all language subsystems. The main problems concern the expression and production of speech.
4. The correlation of abnormal results in auditory processing tests and auditory potentials with a cognitive event with low results in the Language Development Test in children with SLI and premature infants may indicate that auditory processing disorders become one of the pathomechanisms of language disorders in the studied children.
5. The nature of language disorders in children from preterm labor is similar to the group of patients with SLI, which may confirm the hypothesis that prematurity is a risk factor for SLI.
6. Low birth weight, shorter duration of pregnancy, hypoxia, and the occurrence of hyperbilirubinemia are factors affecting the occurrence of deficits in the linguistic development of premature babies.
7. The prolongation of the P3 wave latency in premature infants burdened with hypoxia and hyperbilirubinemia indicates the influence of these factors on the occurrence of auditory processing deficits in these children.
8. Lower results in the Language Skills Test, SAT II in children from preterm labor in comparison to patients with SLI may indicate the influence of perinatal factors on the development of linguistic and auditory skills.
9. The study of auditory evoked potentials with a cognitive event can be a valuable addition to the diagnostic procedure in children with specific language disorders and in premature babies.