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Influence of the central auditory disorders on behaviour in children with hearing loss connected to otitis media with effusion

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Introduction: Normal hearing is closely related to normal development of the language and speech as one of the most sophisticated functions of the human brain. Verbal expression includes emotions as well as non-verbal form of communication. Behaviour disturbance associated with hearing loss are often found. The aim of this study is to examine whether otitis media with effusion and associated hearing loss are related to the language development, academic achievement and behaviour.

Methods: Cohort study included 23 male and 16 female outpatients who came for hearing test because of repetitively hearing loss or learning failure, hyperkinesias, lower rate of social adaptation and speech and language disorders. Tonal audiometry, tympanometry and speech audiometry were performed repetitively every 7 days during the 3 weeks. Non-audiologic evaluation included psychological testing and speech language screening tests.

Results: Bilateral conductive hearing loss and tympanograms of B type were present in all tested children. Speech audiometry showed pathologic level of speech discrimination for free sound field in all of tested children. At age up to 7 years, equal number of (11) female and (11) male have speech disorders and lack of concentration to the sound in general, speech and events around. At age of 8 or higher were much more male (12) than female (5) dominated cognition disorders, behaviour problems, learning disabilities and low rate and problems with social adaptation. Tested children in general have more readiness skills in literacy and math, and low scoring in recognizing incomplete words at school age 8 and above. Male children have more learning and behaviour disabilities at school age than females.

Conclusions: Speech and language development are compromised in children with hearing loss associated with otitis media with effusion. Consequences of hearing loss are related to delay in language particularly articulation development with no differences between males and females. From 8y up to older ages hearing loss is more related with cognition disabilities, behavior disturbance and consecutively social adaptation in high risk at male than female children.

Biography

Pavlovic I graduated from the Academie fur Horgerateakustik, Loebeck, Germany in 1999 with a degree in hearing aids acoustics. During his studies, he successfully completed weekly seminars at Siemens Audiology Technics, Germany (Fitting hearing aids in children) and at Phonak, Stuttgart (FM-systems), as well as a one-day course at the University of Frankfurt am Main (BAHA implants). In 2003, he established his company Slušni centar Pavlović d.o.o., and is the only professional in Croatia with a degree in Acoustics. In 2005, he worked on drafting of the Ordinance on indications and distribution of hearing aids for the Ministry of Health of the Republic of Croatia. This Ordinance has since been occasionally amended, but is still in force. His main contribution was defining the indications for two hearing aids. The company MedEL has authorized him to perform fittings for their implanted hearing aids, and he is the only professional in Croatia to have been given such authorization.

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