Impact of chronic otitis media with effusion on higher auditory pathways.

Sylwia Kędzierawska MD, Komelia Partycka-Pietrzyk MD, Assoc. Prof. Artur Niedzielski, prof. Grażyna Mielnik-Niedzielska MD, PhD

Introduction

Early and long-term degradation of the afferent signal is one of the major causes of disturbances in central auditory processing. Child’s maturing nervous system can be affected by chronic otitis media with effusion (COME) as a result of hearing impairment.

Methods

The study group involved 30 children with COME surgically treated with tympanostomy tubes at the Department of Pediatric Otolaryngology, Medical University of Lublin in 2006-2015. No symptoms of COME were observed in the study group.

All patients underwent a basic ENT examination and audiological evaluation including tympanogram, acoustic reflex test, otoacoustic emission, pure tone audiometry. Moreover brain-stem evoked potentials, long latency auditory evoked potentials (LLAEP) – P300 wave and central auditory processing disorder (CAPD) tests including Frequency Pattern Test – FPT, aSPN – adaptive Speech in Noise, Dichotic Digit Test – DDT were measured.

Results

The results of CAPD tests (FPT, DDT, aSPN) were worse in the study group than in the control group.

![Graph showing results of CAPD tests](image)

There was a statistically significant difference between the study and the control group’s first wave latency, at the 31 Hz and 81 Hz stimulus frequencies.

Conclusion

COME in childhood seems to affect the conduction velocity in the distal part of the auditory nerve as well as recognition and classification of sound mechanisms. This suggests the harmful effect of COME on neural mechanisms.

Medical University of Lublin, Sylwia Kędzierawska MD, Pediatric Otolaryngology Department, University Children’s Hospital, 6, prof. A. Gebali Street, 20-093 Lublin, Poland.

E-mail: sylwiakedzierawska@umlub.pl
Phone: +48 81 71 85 581
Fax: +48 81 74 16 173
Web: www.umlub.pl