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disabling effects of the tinnitus in daily life. The medical variables were data from the medical and audiological screens. Psychological variables were various scales from questionnaires on psychopathology, general and tinnitus-specific coping behaviour, self-efficacy beliefs and (tinnitus) locus of control.

A repeated measurement design with long-term follow-up periods (4 and 16 months after treatment) and a waiting-list check measurement were used. Individual residual change scores at the different measuring points were used for statistical analysis.

The study showed that psychological variables are most important for the outcome.

The use of amplification above 2 kHz for tinnitus suppression and improved communication

J. FEENSTRA & J. VERSCHUURE (Rotterdam)

There are many questions regarding the use of amplification restricted to only the high-frequency range (no amplification up to about 2 kHz) for communication improvement and tinnitus suppression. In general, the frequency band is considered too narrow to be useful for communication purposes. On the other hand, tinnitus and the accompanying hearing loss are sometimes restricted to this frequency range, particularly in patients with a noise-induced hearing loss and amplification is a well-accepted form of tinnitus treatment.

Normal hearing aids in these patients provide too much amplification around 1 kHz to be acceptable, resulting in rejection of the hearing aid. In the last decade Oticon has introduced a hearing aid which provides amplification only above 2 kHz and we tested this hearing aid on three groups of patients with a hearing loss restricted to the frequency range above 2 kHz complaining about either only a high-pitched tinnitus, only communication problems in noisy situations or about both (mixed group).

We found that in the tinnitus group, 55% of the patients reported tinnitus suppression and 90% of those who reported relief decided to buy the hearing aid; in the patients with communication problems 86% decided to buy the aid. In the mixed group 75% experienced tinnitus suppression and 88% improvement in communication. All patients reporting improved communicative abilities decided to buy the hearing aid.

Speech perception in prelingually deaf children with a cochlear implant

A. SNIK, C. GEELLEN, A. VERMEULEN, J. BROKX,
& P. VAN DEN BROEK (Nijmegen & St. Michielsgestel)

Generally, speech perception testing is used to evaluate the

results of cochlear implantation in children. In some studies, these results have been compared with those of severely or profoundly hearing impaired children using conventional hearing aids. Results of 10 post-meningitis, prelingually deaf children with a cochlear implant were compared with those of a large reference group which comprised children with severe or profound deafness using conventional hearing aids. Before surgery, all the children with a cochlear implant had speech perception abilities comparable to those of children from the reference group with hearing loss exceeding 120 dBHL. Two years after implantation this value was 70–90 dBHL. This is a remarkable improvement especially because most children with a hearing loss in this range develop fluent speech and good aural-oral communication.

The Fletcher Index (normal versus high) and hearing aid fitting

J. J. T. HENDRIKS & L. J. C. ANTEUNIS (Maastricht)

As part of a project to keep the elderly independent, 300 audiograms were made of persons of 55 years and older. Everyone with a hearing loss ≥ 35 dB was asked to fill in a questionnaire. The mean hearing loss was 30 dB (s.d. 15 dB).

Some years ago the criteria for compensation for a hearing aid changed in The Netherlands. Instead of a hearing loss ≥ 35 dB, according to the Fletcher Index (mean loss for 0.5, 1 and 2 kHz), a hearing loss ≥ 35 dB, according to the High Fletcher Index (mean loss for 1, 2 and 4 kHz), was sufficient to obtain a compensation.

According to the first criterion, 36 persons were considered for a hearing aid while, according to the second, 96 persons were considered. From the persons with a Fletcher Index ≥ 35 dB, 50% wear a hearing aid, while in those who meet the second criterion only 25% had a hearing aid. Taking into account the questionnaires it is clear that, for the elderly, the mean threshold for the lower frequencies is in better agreement with the subjectively experienced hearing loss than the mean threshold for the high frequencies.

The extrusion of ventilation tubes. A comparison of several types

J. H. PASMOOIJ (Deventer)

The properties of several transtympanic ventilation tubes were investigated in a prospective, randomized clinical trial. A pilot study confirmed that tubes inserted into the anterior part of the tympanic membrane remain in place for a longer period than tubes inserted posteriorly ($n = 28$, $P = 0.0063$).¹ For this reason the anterior insertion was used during the trial.

The frequently used teflon Armstrong Beveled Grommet (Xomed-Treace) ($n = 438$) is extruded after 6, 9, 12, and 24