Audiology & Neurotology

Audiol Neurotol 2014;19(suppl 1):1
DOI: 10.1159/000370202

Published online: February 20, 2015

Editorial

Age-related hearing impairment is the most prevalent sensory impairment in the elderly population, occurring in one third of individuals over 65 years old. Presenting as a complex disease with multifactorial etiologies partly genetically determined and influenced by gender, hearing loss in the elderly is often accompanied by vestibular function impairment, communication disorders, and associated with poorer cognitive functioning, incident dementia and falls.

Two years ago, at the first seminar on 'Aging and Implantable Hearing Solutions' held in Paris, discussion focused on the need for earlier identification through hearing screening programs, treatment of hearing impairment and the subsequent influence of cognitive disorders. The need for tailoring hearing rehabilitation specific to the elderly with consideration of comorbidities, cognitive decline, depression and the awareness of the impact of these concomitant age-related disorders upon hearing treatment were addressed.

The succeeding seminar held in Munich provided an update on the most recent research on identification, evaluation and hearing therapy outcomes for the elderly with concomitant cognitive disorders, including dementia, presented by researchers, clinicians and epidemiologists from three continents to an audience of over 300 hearing professionals. The coauthors of the current supplement provide a summary of the updated research and reviews presented.

Studies report on the possible connection between cognitive processing and hearing loss, suggesting the need for routinely combining evaluations of both cognitive and auditory function during the CI selection process. Further, auditory evoked potentials in combination with cognitive testing may be of use not only for selection but also in planning auditory rehabilitation and basic auditory training using a bottom-up approach at the phoneme level, possibly software based implemented for older CI users, and ultimately lead to improved speech recognition in noise.

Whether hearing loss is a marker for early-stage dementia or is actually a modifiable risk factor for dementia or an early marker of cognitive decline deserves further study. The association between hearing impairment, the diagnosis of dementia, and the role of sensory therapy through hearing aids or cochlear implants (CI) has been proposed for some time; however, further research is needed.

On a pragmatic level, looking more specifically at the external components of the CI, recommendations for improving telephone communication through dedicated programming, improving other features such as program selection, and offering more user-friendly options for the elderly have been proposed. Follow-up studies demonstrate that age alone is not the major factor that predicts outcome and that, surgically, this population may benefit from deeper electrode insertion.

Clearly, successful CI therapy in elderly individuals with significant hearing impairment improves quality of life and enhances social interaction, providing foundations for 'healthy aging' that may reduce the economic burden of caring for the aged as the world's population ages.

In summary, this supplement brings together important findings and considerations for CI treatment in the elderly. There still remain many challenges including understanding the great variability in outcomes observed in the elderly, defining appropriate selection criteria, establishing appropriate expectations through counselling, investigating sophisticated processing alternatives that consider slower cortical processing, and conducting further long-term studies on the direct effect of auditory sensory improvements provided through CI in an aging population.

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