

MEETING ABSTRACT

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# Cochlear implantation in elderly: indication and results

R Filipo\*, D Ballantyne, C D'Elia, P Mancini

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## Background

There is a growing interest by clinical researchers on quality of life and outcomes of cochlear implant patients, particularly considering the extension of indication to the more elderly. This is especially related to the cost-benefit issues in patients where the benefit might be reduced by aging of the auditory system which is a more central process, together with general health problems which might be affected by any surgical procedure. Vermeire<sup>1</sup> and co-authors have reported that although there is no difference between self-reported measure of benefit between patients implanted younger or older than 70 years, still 70-and-over had lower speech performance than younger participants. The aim of the study was to investigate the outcome of CI among elderly cochlear implant recipients.

## Materials and methods

A total of 29 post-lingual adults implanted with Clarion<sup>®</sup> 1.2, CII and HiRes<sup>®</sup> 90K were selected for trials. Group

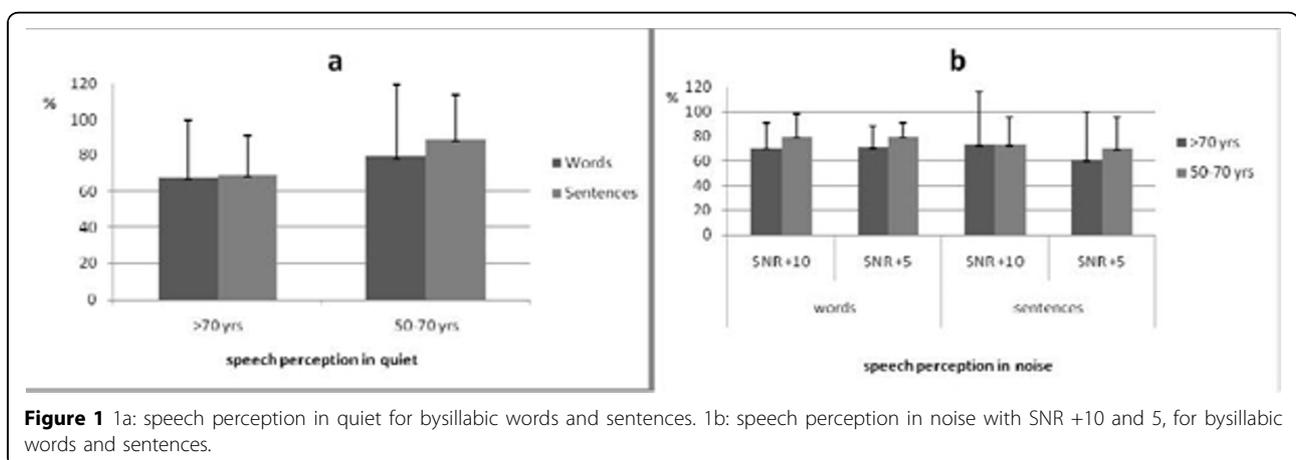
1 consisted of 9 patients with mean age at implant 76.2 yrs. Group 2 consisted of 20 patients with mean age at implant 59.1 yrs. All patients were tested (open-set mode) with bisyllabic words and sentences, in both quiet and noise [speech/noise ratio (SNR) = +10 and 5]. Statistical analysis of results was carried out with the student T-test. Testing was carried out after a minimum of 9 months of cochlear implant use.

## Results

Result for speech perception in quiet and in noise showed a tendency for better results in subjects 50-60 years old, nevertheless differences were not statistically significant. Figure 1

## Conclusions

Results from our study have shown that elder patient implanted above 75 yrs can obtain significant hearing benefit from cochlear implantation. Similarly to the



**Figure 1** 1a: speech perception in quiet for bisyllabic words and sentences. 1b: speech perception in noise with SNR +10 and 5, for bisyllabic words and sentences.

results reported by Vermeer<sup>1</sup>, in our study subjects implanted at elder age show lower scores compared to younger adult implantees. Nevertheless differences are not statistically significant, and, more important, the overall results are excellent even though elders require more counseling and attention. Furthermore activities connected to rehabilitation, often required to improve implant use, become inherently an input which favors the patient's interest and motivation towards everyday life.

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#### Reference

1. Vermeire K, Brokx JP, Wuyts FL, Cochet E, Hofkens A, Van de Heyning PH: Quality-of-life benefit from cochlear implantation in the elderly. *Otol Neurotol.* 2005, **26**(2):188-195.

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