

# Impact of chronic otitis media: why bone conduction implantation should be considered earlier

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## INTRODUCTION

Chronic Otitis Media (COM) is a chronic inflammation of the middle ear and/or mastoid cavity that can negatively impact hearing ability and quality of life.

Current standard of care for patients with COM primarily focuses on managing the infection through middle ear surgery. Treating the associated hearing loss can then be addressed through surgical interventions, such as tympanoplasty.

Bone conduction hearing devices offer an alternative treatment option for patients with COM-related hearing loss.

## AIMS / OBJECTIVES

Characterize how standard of care and bone conduction hearing device implantation impacts health care utilization, quality of life and hearing for patients with COM.

## PATIENT INFO. / METHODS

Seventeen adults with COM and a bilateral hearing loss transitioned from standard care and received a bone conduction hearing implant. Mean patient age was 68 years (range: 51-88 years) and 71% of subjects were female.

Mean air and bone conduction thresholds were  $83 \pm 20$  dB HL and  $48 \pm 14$  dB HL, respectively.

### Data collected pre- and/or post-implantation:

- Client Service Receipt Inventory (CSRI);
- Chronic Otitis Media Outcome Test (COMOT-15);
- Speech, Spatial and Qualities of Hearing Scale (SSQ12);
- Sound-field thresholds;
- Word recognition score (WRS) in quiet;
- WRS in noise.

## RESULTS

### Client Service Receipt Inventory

In the six months prior to inclusion:

- 82% of patients reported at least one clinical consultation;
- 59% of patients were taking medication due to COM;
- Patients lost 24 working days per year on average because of COM.

### Chronic Otitis Media Outcome Test-15

All COMOT-15 scores improved significantly between pre- and post-implantation (all  $p < .001$ ) (Figure 1).

There was a statistically significant ( $p = .003$ ) reduction in average number of doctor visits following implantation.

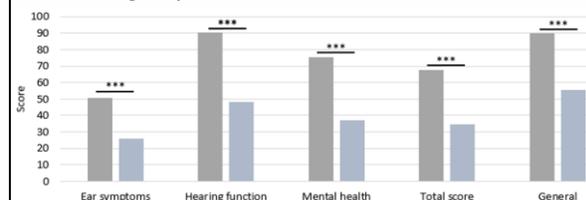


Figure 1. COMOT-15 scores pre- (grey) and post-implantation (blue). \*\*\* $p < .001$

### Speech, Spatial, and Qualities of Hearing

All SSQ12 scores showed significant mean improvements between pre- and post-implantation (all  $p < .001$ ) (Figure 2).

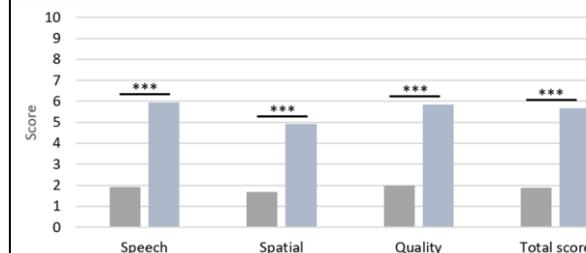


Figure 2. SSQ-12 scores pre- (grey) and post-implantation (blue bars). \*\*\* $p < .001$

### Word recognition in quiet and in noise

Mean WRS in noise improved from 9.2% to 56.4% when aided ( $p = .007$ ).

Aided mean WRS in quiet showed improvements at all aided speech presentation levels ( $p = <.05$ ) (Figure 3).

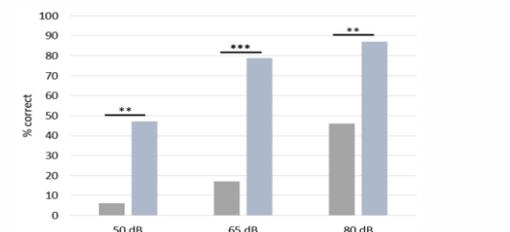


Figure 3. WRS in quiet between pre- (grey) and post-implantation (blue bars) \*\* $p < .01$  \*\*\* $p < .001$

## DISCUSSION/CONCLUSION

COM and its related hearing loss has a negative impact on quality of life and is associated with high health care consumption.

Bone conduction implants led to statistically significant reductions in clinic visits and improvements in hearing and quality of life compared to middle ear surgery and hearing aid fitting.

## ACKNOWLEDGEMENTS

This work was conducted by: Dr. Serafin Sánchez, Hospital Universitario Virgen Macarena; Dr. Emili Amilibia, Hospital Germans Trias i Pujol; Dr. Francisco Javier Galindo, Serv. Territorial ORL Lleida; Dra. Miriam Hamdan, Hospital Universitario de Bellvitge; Dr. Miguel Angel Alañon, Hospital General de Ciudad Real; Prof. Jaime Marco, Hospital Clínico Universitario de Valencia; Dr. Luis Padilla, Hospital de Cruces; Dr. Xabier Altuna and Dr. Juan José Navarro, Hospital Universitario Donostia; Dr. Manuel Tamarit, Hospital; Dr. Peset; Dr. Rubén Polo, Hospital Ramón y Cajal; Dr. José Fernández-Nogueras, Hospital Virgen de las Nieves; Dr. Arturo Rivas, Hospital Universitario de Burgos; Dra. Marta Faubel, Hospital General de Castellón; Dr. Santiago Santa Cruz, Hospital Universitario de Salamanca.



To learn more about the Healthy Hearing Ears Initiative and the research outcomes so far, visit our website where you can also sign up to be notified of upcoming webinars, clinical studies and new publications.

[www.healthyhearingears.org](http://www.healthyhearingears.org)

Are you interested in performing research on COM-related hearing loss or would you like to receive additional information? Contact us: [healthyhearingears@gmail.com](mailto:healthyhearingears@gmail.com)