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AUDITORY IMPLANTS

Candidacy for Cochlear Implantation in Prelingual Profoundly Deaf Adult Patients

Ghizlene Lahlou, Hannah Daoudi, Evelyne Ferrary, Huan Jia, Marion De Bergh, Amélie Liagre, Emmanuelle Ambert-Dahan, Yann Nguyen, Olivier Sterkers, Isabelle Mosnier

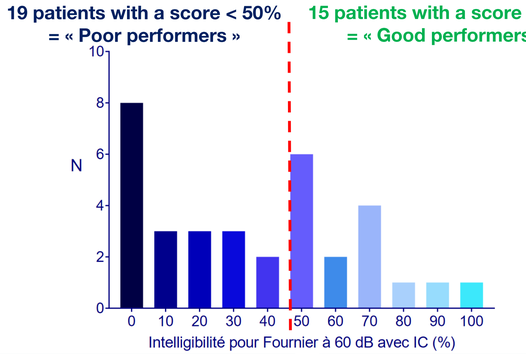
AP-HP Sorbonne Université, GH Pitié-Salpêtrière, Service ORL - Unité fonctionnelle Implants auditifs et explorations fonctionnelles

Abstract

Cochlear implantation is usually not recommended for prelingual profoundly deaf adults, although some of these patients might benefit from it. This study aims to define the candidates for cochlear implantation in this population. This retrospective study reviewed 34 prelingual profoundly deaf patients who had received a cochlear implant at 32 ± 1.7 years old (16−55), with at least 1 year of follow-up. Speech perception and quality of life were assessed before and 3, 6, and 12 months after cochlear implantation, then every year thereafter. According to the word speech intelligibility in quiet (WSI) 1 year after implantation, two groups were identified: good performer (GP) with WSI ≥ 50% (n = 15), and poor performer (PP) with WSI ≤ 40% (n = 19). At the 1 year mark, mean WSI improved by 28 ± 4.6% (−20−100) (p < 0.0001). In GP, the intelligibility for words and sentences, communication and quality of life scales improved. In PP, the communication scale improved, but not auditory performance or quality of life. GP and PP differed pre-operatively in speech production, communication abilities, and WSI in best-aided conditions. In prelingual profoundly deaf adults, a dramatic auditory performance benefit could be expected after cochlear implantation if the patients have some degree of speech intelligibility in aided conditions and have developed oral communication and speech production

- 34 patients included
- Diagnosis of hearing loss : 21 ± 2,2 months [1–46]
- Age at implantation : 32 ± 1,7 yo [16–55]
- Mean speech intelligibility with hearing aids : 12 ± 2.4% [0–50]

After CI : Mean speech intelligibility = 36±5.1% [0–100]
+ 28±4.6% [−20–100] (p < 0.0001) compared to preoperative scores



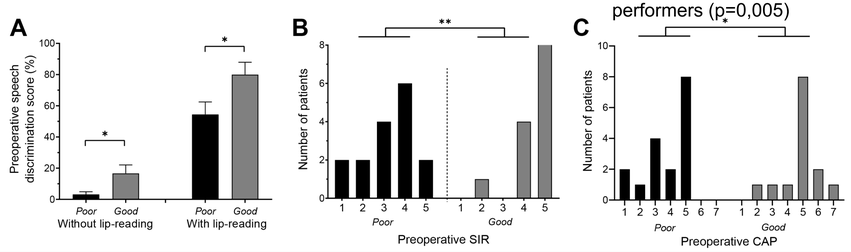
Résultats

- **Good performers : significant improvement of words and sentences intelligibility; of quaity of life and communication**
- **Poor performers : no improvement of speech intelligibility but improvement of communicatioon**

All patients but 2 used their CI all day long

Speech intelligibility for words 1 year after CI is better in case of :

- Some degree of intelligibility with hearing aids (with an withoud lip-reading)
- Comprehensible speech (SIR)
- Oral communication abilities :
  → CAP
  → Patients using only oral langage: 87% of « good » performers *vs* 37% of poor performers (p=0,005)



Objectifs

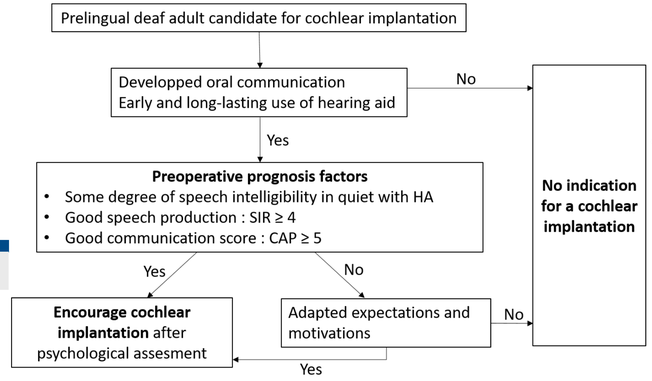
- Congenital hearing loss affects 1 child/700
- The cochlear implantation has to be the soonest possible
- A delayed cochlear implantation is :
  - NOT recommended in case of non evolutive profund hearing loss *(HAS, 2012; Simon et al., 2019)*
  - Variable outcomes

Who are the good candidates for a cochlear implantation at an adult age in case of prelingual severe to profound hearing loss?

Méthodes et Matériels

- Retrospective study
- Adult patients with prelingual severe or profund hearing loss at diagnosis
- Diagnosis before 4 yo
- First cochlear implantation after age of 15 yo between 2004 et 2019
  → **Description of auditory and PROMs outcomes after cochlear implantation and look for progrnosis factors**

Conclusion



- **Satisfiying outcomes for 44% of patients**
  - Improvement of speech intelligibility for words and sentences
  - Improvement of QoL and communication scores
  - Improvement of speech intelligibility in noise after second CI
- **Slight improvement for 56% of patients**
  - With significant improvement of communication score
  - Daily use for 17/19
  - 4/19 requested a second CI

Références

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