COCHLEAR IMPLANT UNDER 3 YEARS OLD: OFF-THE-EAR OR BEHIND-THE-EAR PROCESSOR, WICH IS THE BEST?

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INTRODUCTION

Pediatric cochlear implantation is generally performed before 1 year old. Off-the-ear processor (OTE) are popular for their practicality and aesthetic appeal, but they can be more difficult to maintain than behind-the-ear processor (BTE) in young children. We plan to compare BTE and OTE processor for data logging, number of disconnections and impact on auditory perceptions in the 1rst year after cochlear implantation in children under 3 years old.

METHOD

- Children < 3 years old
- Implanted witch Cochlear CI 622 between March 2021 and February 2024 in the Montpellier Palavas Cochlear Implant Center, France
- BTE or OTE processors as parents and family chose
- All children were followed 7 times the first year post-implantation: at 1 and 2 weeks; 1, 3, 6, 9 months and 1 year after surgery.
- Parameters recorded at each session:
  - Data-logging (hours per day)
  - Number of disconnections per day
  - APCEI profile (Acceptance, Perception, Comprehension, Expression, Intelligibility)

RESULTS

- 27 children implanted
- 1 child excluded with autism spectrum disorder with head banging
- 18 bilateral simultaneous implantation
- 8 unilateral implantation

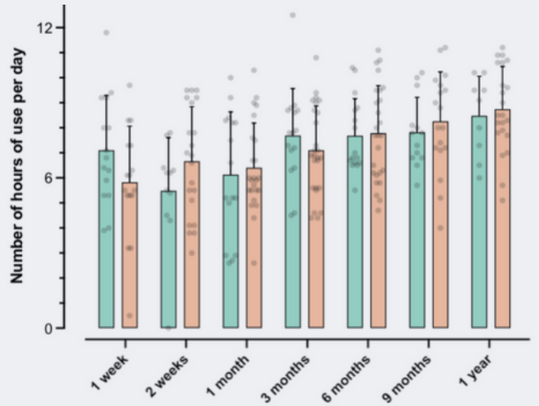
OTE processor

- 26 ears: 15 children
- 8 girls/7 boys
- Mean age at implantation: 19 months [7-35]

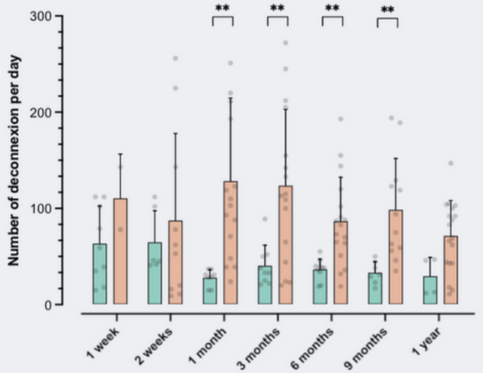
BTE processor

- 18 ears :11 children
- 4 girls/ 7 boys
- Mean age at implantation: 18 months [10-31]

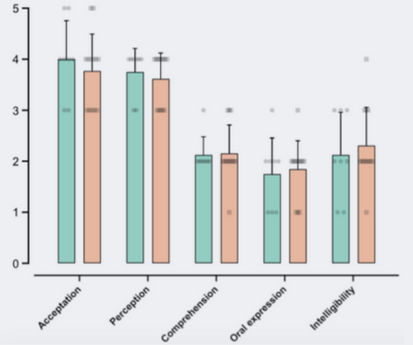
- Data logging increased over time with no significant differences between OTE and BTE processor



- A decrease of disconnections per day in both case but significant higher disconnection rate with OTE processor at 1, 3, 6 and 9 months after implantation.



- The APCEI profile was comparable at 1 year after implantation in both groups



CONCLUSION

After 1 year of implantation in pediatric population, data logging is the same in both groups, but OTE processor shows more disconection than BTE processor. Nervertheless, there is no difference in perception, comprehension, oral expression and intelligibility.

The choice of processor must be made by a multidisciplinary team taking into account different factors: age of the child at implantation, presence of hair, psycho-motor development, associated disorders.