Cochlear Implantation in Young Children with Single Sided Deafness: Characteristics and Early Data

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Disclosures

• Dr. Kevin Brown is the PI on this study and has obtained an IDE.
• I will be reporting on investigative use of a commercial device.
• This study is supported by a research grant from MED-EL.
Current treatment options

• Contralateral Routing of Signal (CROS)
• Bone conduction

• Limitations:
  • Not providing neural input to the affected side.
  • Variable outcomes for using binaural cues to aid in listening in noise (Kunst et al, 2008)
  • Localization abilities no better than chance (Bosman et al, 2003; Wazen 2005; Hol et al, 2010)
Aim

To investigate the effectiveness of cochlear implantation in children with moderate-to-profound UHL using a within subjects design.
• Children age 3.5-6.5 years
• Typically developing
• PTA of $\geq 70$ dB HL in one ear and normal hearing in the contralateral ear
• Aided CNC word score of $< 30\%$ in the ear to be implanted
• No evidence of cochlear nerve deficiency (CND)
• No evidence of ossification
• No significant malformations
• English is the primary language
• Speech and Language Testing
• Speech Perception
  • Aided with the contralateral ear masked
  • CI only via direct connect
• Hearing in noise
  • CI on and CI off
  • Babble co-located and at ± 90°
• Quality of Life Scale
  • Peds-QL
  • SSQ for Children with Impaired Hearing
  • Bern Benefit in Single Sided Deafness Questionnaire
Early Outcomes Data

Localization
Speech Perception
Peds-QL
SSQ
Bern
“This time last year he couldn't stand the noise and would have to be removed. Today he chose to cash in his reward bucks and stand in front of entire school and lead the chant. Not a big deal to most but so huge for us. [...] so glad we made this decision!”
Thank You

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