Pragmatic Language and Social Skills: 8-10 year olds after Cochlear Implantation in the CDaCI Study

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Disclosures

• Audiology advisory board member - Advanced Bionics.
Childhood Development after Cochlear Implantation

Study PI: Niparko

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What do we know about Social Skills?

- Internal control and external environments
- Follow a “dynamic systems approach”
- Developed primarily through language and communication
- Influence relationships, academic achievement, and developmental outcomes
Research Limitations

• Previous research has produced mixed results

• Limitations include:
  • Advances in CI technology
  • Small sample sizes
  • Single site
  • Lack of diversity
  • Cross-sectional
  • Failure to assess interrater differences

• Tasker et al. 2012; Bat—Chava, Martin & Kosciw, 2005; Antia & Kreimeyer, 1996; Capelli et al. 1995
Objective

• Evaluate the relationship between pragmatic abilities and social competence through multiple raters in 8-10 year old children

• CDaCI study model provided
  – Large study size
  – Participant diversity
  – Multiple raters
    • “Gold Standard”
Methods
Childhood Development after Cochlear Implantation

- Annual Visits
  - Multiple domains studied
    - Cognition
    - Language Evaluation
    - Speech Perception
    - Psychosocial
    - Quality of Life

- Cross-sectional data collected
  - Children ages 8-10 years old
  - NH=21; CI=69
  - Pragmatic Judgment and Social Skills
Pragmatic Judgment Subtest

• Comprehensive Assessment of Spoken Language (CASL)
  – Mean = 100, SD = 15
  – Measures knowledge and use of pragmatic rules of language

• The child is asked to:
  – Express communicative intent
  – Recognize appropriate topics for conversation
  – Initiate conversation or turn-taking
  – Adjust to situational factors
  – Judge pragmatic appropriateness of tester’s communication
Social Skills Rating Scale

- **Social Skills Rating Scale (SSRS) – Elementary Version**
  - Mean = 100, SD = 15
  - Behaviors that affect teacher-student relations, peer acceptance, & academic performance

- **Subscales include:**
  - Cooperation
  - Assertion
  - Responsibility
  - Empathy
  - Self-control

- **Multi-rater assessment**
  - self, parent, and teacher
Results
Pragmatics Skills by Hearing Status

![Bar chart showing comparison between NH and CI groups on Pragmatic Judgment Standard Score with p<0.0001 significance.](chart.png)
Results

Social Skills by Hearing Status

![Bar chart showing social skills scores for Self-Report, Parent-Report, and Teacher-Report by hearing status (NH and CI). The chart indicates a significant difference (p=0.01) between NH and CI groups, with CI generally having lower scores.](chart.png)
Relationship between Pragmatics & Social Skills

**Child Rating**
- NH $r = -0.32$
- CI $r = 0.22$

**Parent Rating**
- NH $r = 0.06$
- CI $r = 0.28^*$

**Teacher Rating**
- NH $r = 0.43^*$
- CI $r = 0.44^{**}$

* $<0.05$
** $<0.001$
Child/Parent/Teacher Ratings among CI Recipients

![Graph showing the relationship between SSRS Social Skills Scale Standard Score and CASL Pragmatic Judgment Standard Score among CI recipients, with data points for self-report, parent-report, and teacher-report.]
Conclusions

• **Pragmatic language and social skills were related.**
  – Based on parent and teacher report
  – Supports Dynamic Systems theory

• **Whole child interventions are needed**
  – Interdisciplinary approach

• **Future directions**
  – Examine predictors of pragmatic language skills and social skills
  – Comparison of longitudinal data from current CDaCl cycle