



Paul Polani Award 2007

Predicting the speech and communication development of young children with cerebral palsy: findings from a pilot study

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Background

- Parents ask: “Will my child speak?”
- Little research evidence to predict the risk of speech and communication impairment in cerebral palsy
- Best estimates 40-50% of older children have some type of communication difficulty



Early, individualised intervention:

- How will children communicate?
- Who will use speech?
- How severe will children’s communication difficulties be?

Aims

1. Pilot the design and methods of a longitudinal prospective cohort study of children’s speech and communication development from 2–5 years of age
2. Test the feasibility of conducting a prospective study
3. Develop a cohort of children to be followed throughout childhood

Methods

- Prospective cohort
- DOB between 1.7.2005 and 31.3.2006 seen at 2- 2.6 yrs
- North of England (approx 75% of NECCPS region)
- Cerebral palsy / nonprogressive motor disorder
- Communication giving cause for concern



Measures

- Independent
 - Gestational age, birth weight;
 - Site, type and extent of neurological lesions on MRI (if available);
 - SCPE classification;
 - GMFCS;
 - MACS;
 - Vision and hearing acuity;

Measures 2

- Pre-School Language Scales UK (Boucher & Lewis, 1997);
- Mullen Scales of Early Learning, (visual reception scale) or Leiter-R Scales
- Oral Speech Motor Control Protocol;
- Diagnostic Evaluation of Articulation and Phonology (Dodd *et al.*, 2002);
- MacArthur Communicative Development Inventory UK (Klee *et al.*, 1999)

Measures 3

- Communication questionnaire:
 - Methods of communication, intelligibility
- Dependent variables
 - NECCPS Communication Classification Question: 4 rating system
 - Communication Function Classification Scales (Hidecker *et al.*) 5 point rating system

Results

- 34 children were identified, 27 children recruited (80%)
- Children were recruited from all participating trusts
- Deprivation scores vary from very deprived to affluent
- CP type: 19 (70%) spastic; 4 (15%) dyskinetic, 4 (15%) mixed

Results

- Children completed all measures of speech, language and cognitive except
 - Oral Motor Protocol
 - DEAP Phonology (Dodd *et al.*, 2002)
- Communication rating
 - NECCPS median = 2.5 (IQR 2, 4)
 - CFCS median = 4, (IQR 3, 5)

Results

- Measures of speech and language correlated with dependent measures of communication ($p = \leq 0.001$ for all)
- No significant association between GMFCS score and communication scores

Conclusions

- Measures are appropriate
- Oral Motor Protocol omitted
- Prospective, longitudinal study is feasible

Current work

Full study now taking place across NECCPS region. N = 120. Funded by UK National Institute for Health Research 2008-2014

Thank you!