

MOTOR SPEECH THERAPY IN POST TRAUMATIC AMNESIA (PTA)!



NSW TBI Evidence Based Practice Group
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A BIT ABOUT OUR GROUP

- We are 3 years old
- We have 14 members
- Majority teleconference in
- 1-5 members attended face to face



ESTABLISHING CLINICAL QUESTION



○ **Clinical background**

- Motor speech disorders occurs in 8-100% of clients post TBI (Murdoch et. al. 1999)
- Clients often still in PTA when admitted to a BIU
- Some clients never emerge/remain chronically amnesic
- Lots of discussion about principles of motor learning being best practise
- Challenges with PTA



ESTABLISHING CLINICAL QUESTION

ASK PICO!

QUESTIONS?

○ Process

- Discussion at first meeting regarding our current clinical questions
- Consensus that it would be beneficial to review evidence in the area of motor speech therapy in post traumatic amnesia/chronically amnesic population
- Awareness of likely limited evidence and need to potentially broaden clinical question
- Tentative question formulated April 2015 for initial literature screening and liaison with academic leader Prof. Kirrie Ballard (Uni of Sydney)



ESTABLISHING QUESTION

- Email discussion with Prof. Kirrie Ballard and researcher Joanne Steele (Uni of Newcastle) re clinical question and potential sources for evidence
- Initial literature search – key search terms included:

“What is the most effective intervention for the treatment of motor speech impairments in adults with a TBI who are in PTA or a chronically amnesic state?”

“What is the most effective intervention for the treatment of motor speech impairments in adults with an ABI who have severe memory impairment?”



McGHEE, H. ET AL (2006). **TREATING DYSARTHRIA FOLLOWING TRAUMATIC BRAIN INJURY: INVESTIGATING THE BENEFITS OF COMMENCING TREATMENT DURING POST-TRAUMATIC AMNESIA IN TWO PARTICIPANTS.** BRAIN INJURY. 20(12): 1307-1319.

- 2 participants
- Both had scored 10/12 on PTA
- Case study and ABA design
- GT had 45 and KM had 9 therapy sessions
- Motor Speech Examination Tool and Perceptual Speech Analysis Scale before therapy and post PTA
- Individual therapy was conducted for 15 minutes 2 x each weekday (10 sessions per week).
- Treatment tasks chosen to improve respiratory, laryngeal, velopharyngeal and articulatory mechanisms as appropriate
- Visual and verbal cues to compensate for executive dysfunction
- Principles of motor learning applied during therapy tasks
- If participant couldn't remember tasks the training phase was recommenced
- ½ improved intelligibility of speech in conversation, 2/2 improved intelligibility at single word and phrase level, 2/2 showed physiological improvements



CAHILL LM, ET AL. (2004). AN EVALUATION OF CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) THERAPY IN THE TREATMENT OF HYPERNASALITY FOLLOWING TRAUMATIC BRAIN INJURY: A REPORT OF 3 CASES. JOURNAL OF HEAD TRAUMA REHABILITATION. 19(3): 241-253.

- ABA design
- Treatment = 4 weeks of CPAP therapy once a day/4 days per week/10-24 minutes
- Assessment = Frenchay Dysarthria Assessment, ASSIDS and a perceptual speech sample analysis, nasometer.
- Therapy tasks = (1) repetition of single word utterances in the form of VNCV with stress on the second syllable (2) Reading out short sentences that contain both nasal and non-nasal sounds.
- Nil specifications on memory function of the participants
- Inference made by EBP group that CPAP therapy activities from description had low cognitive demands so likely appropriate for people with significant memory impairments.



CLINICAL BOTTOM LINE

- Therapy aimed at enhancing the physiological support for speech using principles of motor learning may be beneficial during the late stages of PTA.
- Therapy approaches that do not place high demands on cognition may be beneficial during PTA e.g. CPAP therapy.



CURRENT CLINICAL PRACTISE

- Based on the limited literature available, the group developed a survey to look at current practise
- 33 respondents
- 60% *did* conduct motor speech therapy with clients in PTA/chronic amnesia
- 40% *did not* do therapy



THERAPY APPROACHES

- Variety of therapy used eg. principles of motor learning, biofeedback, compensatory strategies, AAC, CP training, insight building, functional approaches.
- 100% of clinicians encouraged family to practise with client
- 53% documented practise in a diary
- 30% used reminder systems eg. alarms on phone
- Motivation: 82% said clients were sometimes motivated to work on their speech



BARRIERS TO THERAPY

- Barriers included:
- Reduced attention/concentration 46.15%
- Agitation/aggression 7.7%
- Memory difficulties 23%
- Reduced self-monitoring 15.4%
- Side effects of medication 0%
- Caseload management/prioritisation 7.6%

- 50% of clinicians assessed insight either via self-reports (93%), LCQ (87%) or AQ (6.6%).



METHODS TO ASSIST ENGAGEMENT

Strategies to use to assist clients to engage in speech therapy whilst in PTA:

- Video feedback (insight building & provide feedback on improvements)
- Speech in relation to “real life goals” eg. to get back to acting – meaningful and functional activities
- Revisit purpose of intervention each session
- Functionally relevant topics
- Engaging family/friends in the process
- Set clients up with tasks in between therapy sessions – technology/reminders to engage client





..... AND KEEP GOING!!

QUESTIONS?

