THE EFFECT OF CONVERSATION THERAPY ON RECOVERY AND BRAIN STRUCTURE

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BACKGROUND

- Spontaneous recovery from language difficulties (Aphasia) tends to be highest in the first three months[1]

- Difficulties persist into the **chronic stage of stroke** (>6months)

-Patients with severe left hemisphere infarcts require intensive therapy and are **unlikely to make a significant recovery**[2.]

OBJECTIVE

To investigate the effects of eight weeks of **Better Conversations with Aphasia (BCA) therapy** in patients with chronic aphasia secondary to severe left hemisphere lesions

(n= 8, 10-60 months post onset)

CONCLUSION

- **Therapeutic benefits** (n=7)

- **Lesion shrinkage** (brain growth) in Broca's area (n=3) consistent with learning-related neuroplasticity

- Improvements in language tests (n=2)

- Clinically the results are useful for therapy (resource allocation)

- Further studies necessary (n>8)

HYPOTHESIS

"The effects of BCA therapy will improve conversation performance and affect brain structure in language related area via lesion shrinkage."

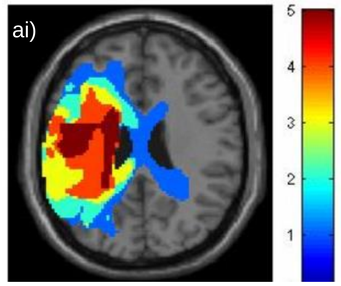
METHODS

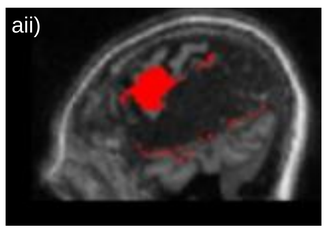
n= 8, right-handed subjects (m=5, f=3, ages 39-71, 17-60 months post onset)
90 minutes of therapy with Speech & Language Therapist (SLT) once a week x 8 weeks with "carry over work" at home with conversation partner (CP)

Baseline measurements:

a) Structural and functional MRI (fMRI)
b) Language tests
c) Conversation analysis
d) Disability questionnaires: Communication disability profile (CDP) [3], Conversation analysis profile for people with aphasia (CAPPA) [4]

RESULTS





a) Imaging

i) Lesion overlap map for n=7 showing **significant damage** to the language areas of the brain **pre-BCA therapy**.
ii)Lesion shrinkage post therapy (n=3)

b) Language tests

Post-therapy improvements in written sentence comprehension (n=1, p = 0.0161), written single words (n=1, p = 0.0486)

c) Conversation analysis

Improvement shown by decrease in barriers (n=5) and increase in facilitators (n=4)

d) Disability questionnaires

Self-reported improvement shown by decrease in CDP (n=5) and CAPPA (n=3)
Also n=4 self-reported behaviour changes such as using writing to supplement impaired speech

DISCUSSION

- Results show promising **clinical significance** but not statistical significance
- Need to interpret the results with caution
- Conversation therapies in aphasia have a **growing evidence base**
- No definitive outcome measures established for this intervention[5]
- For intervention to be measured perhaps Therapy outcome measures (TOMs) [6] should be considered to show clinical relevance in this population
- Further research is needed, for example are these improvements maintained 6 months post therapy?

LIMITATIONS

- Small sample size, limiting statistical significance
- This study used secondary data analysis
- Confounding factors include age, sex and time post stroke onset of the participants
- Individual, rather than group, analysis

References:

1. Aguilar O, Kerry S, Ong Y, Callaghan M, Crinion J, Woodhead Z *et al*. Lesion-site-dependent responses to therapy after aphasic stroke. Journal of Neurology, Neurosurgery & Psychiatry. 2018;89(12):1352-1354.
2. Basso A, Macis M. Therapy Efficacy in Chronic Aphasia. Behavioural Neurology. 2011;24(4):317
3. Swinburn, K. and Byng, S. 2006. *The Communication Disability Profile*, London: Connect Press.
4. Whitworth, A., Perkins, L., & Lesser, R. (1997) Conversation analysis profile for people with aphasia. London: Whurr
5. Sirman N, Beeke S, Cruice M. Professionals' perspectives on delivering conversation therapy in clinical practice. Aphasiology. 2017;31(4):465-494
6. Enderby P, John A. (2015) Therapy outcome measures for rehabilitation professionals. J & R Press