**Group or individual therapy very early aphasia recovery: Does therapy type matter?**

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**Background:** Communication outcomes following stroke are greater when treatment is administered at a greater intensity and in the early phase of recovery. The effectiveness of specific therapy types in very early aphasia therapy is equivocal. One therapy type, Constraint induced aphasia therapy (CIAT) has received attention in the aphasia literature. CIAT incorporates core tenants of neuroplasticity including the use of massed practise to deliver therapy in an intensive manner. Additionally people with aphasia are required to use spoken language, in a pragmatically communicative therapeutic context. However given the intensive nature in which CIAT has been delivered there is debate regarding whether the communication gains made following CIAT can be attributed to the treatment type or the intensity in which the treatment is delivered. Additionally to date no studies have investigated the use of CIAT in very early or early post stroke rehabilitation. With the growth of evidence showing therapy outcomes are most effective when treatment begins in early stage of recovery, the application of CIAT to this phase of recovery is of interest.

This research investigated daily aphasia intervention in the very early phase of recovery post stroke comparing Constraint Induced Aphasia Therapy (CIAT) and individual, impairment based intervention.

**Materials and Methods:** This single blinded, randomised controlled trial involved participants with acute stroke and mild- severe aphasia recruited within ten days post-stroke from acute Perth metropolitan hospitals (n=20). Participants received CIAT (n= 12) or individual, impairment based intervention (1:1 therapy) (n= 8) delivered in the same intensity (45-60 minutes, five days a week) for 20 sessions over five weeks. The primary outcome measure was the AQ at therapy completion. Other outcome measures were: the Aphasia Quotient (AQ; Kertesz, 1982), the % Correct Information Units (Nicholas & Brookshire, 1993) produced per minute (DA) as a measure of discourse based communicative efficiency and the SAQoL, a measure of quality of life (Hilari, 2002). Outcomes were measured at baseline, post-therapy and three months post stroke and were compared using repeated measures ANOVAs.

**Results:** 90% of participants completed 15- 20 hours of treatment over 4-5 weeks. Two participants, from the CIAT group, did not complete the therapy regimen for medical reasons. Additionally one participant, from the CIAT group, completed therapy but did not attend the post therapy assessments. Within groups analyses revealed a statistically significant treatment effect for the AQ F(1.24, 15.78) = 20.66, DA F(2, 28) = 7.351 and SAQoL F(1.34, 17.47) = 13.89. On the AQ there was a significant difference between assessment 1 and 2 (mean 24.1 point change) and assessment 1 and 3 (mean 30.2 point change); the difference between assessment 2 and 3 was not significant. For the DA there was a significant difference between assessment 1 and 3 (mean 8.4 point change); the difference between assessment 1 and 2 and 2 and 3 was not significant. On the SAQoL there was a significant difference between assessment 1 and 2 (mean 1.8 point change) and assessment 1 and 3 (mean 1.8 point change); the difference between assessment 2 and 3 was not significant. There was no significant difference between the CIAT and 1:1 therapy on any outcome measures.

**Conclusions:** The majority of participants completed the treatment demonstrating daily therapy during the very early phase of aphasia recovery is feasible and was tolerated by participants. Additionally CIAT and 1:1 therapy resulted in a significant amount of change on all outcome measures indicating that very early aphasia therapy is beneficial. There were no significant differences between the two groups demonstrating group treatment, as provided through CIAT, is a viable service delivery option in the very early phase of aphasia recovery. The study highlights the need for further research into treatment during this phase of recovery to differentiate between the impact of therapy type and the intensity in which treatment is provided.

Hilari K. The Stroke and Aphasia Quality of Life scale 39 item version. Philadelphia: 2001.

Kertesz A. (192). *Western Aphasia Battery*. New York: Grune and Stratton.

Nicholas, L. E., & Brookshire, R. H. (1993). A system for quantifying the informativeness and efficiency of connected speech of adults with aphasia. *Journal of Speech and Hearing*

*Research, 36*, 338- 359.

**Keywords**

Very early aphasia recovery, therapy type comparison