Intensity of aphasia therapy, impact on recovery
Bhogal S K, Teasell R, Speechley M

CRD summary
This review investigated the relationship between intensity of aphasia therapy and aphasia recovery after stroke. The authors found an association between intensive treatment delivered over a short amount of time and improved speech and language outcomes. The evidence was relatively weak and such an association would need confirmation in further trials.

Authors' objectives
To investigate the relationship between intensity of aphasia therapy and aphasia recovery after stroke.

Searching
MEDLINE was searched from January 1975 to May 2002 using the search terms documented in the report. Studies cited in review articles and in retrieved articles were also sought.

Study selection
Study designs of evaluations included in the review
The studies needed to be controlled trials.

Specific interventions included in the review
The studies needed to investigate speech and language therapy. Studies that provided a drug and/or placebo as an adjunct to therapy were excluded from the review.

Participants included in the review
To be included in the review, the studies had to assess patients suffering from aphasia following a stroke. Studies that included patients with traumatic brain injury, or any other disorders or illnesses, were excluded.

Outcomes assessed in the review
The outcomes did not appear to have been pre-specified. The outcome measures included in the analysis of correlation between intensity of treatment and outcome of a study were the Token Test, Porch Index of Communicative Abilities (PICA) and Functional Communication Profile (FCP).

How were decisions on the relevance of primary studies made?
One reviewer assessed the suitability of abstracts for inclusion in the review. The study coordinator also examined each identified article to determine its suitability for inclusion in the review.

Assessment of study quality
The Physiotherapy Evidence Database (PEDro) scale was used to assess the quality of the included studies. The maximum score that can be achieved on the scale is 10. The studies were classified as 'good' (6 points), 'fair' (4 or 5 points), or no score if not randomised. Two independent raters reviewed each article and a third reviewer resolved any scoring discrepancies. The score provided by the third reviewer constituted the final quality score.

Data extraction
Several independent reviewers extracted the data from the included studies. The mean changes in scores for outcome measures were extracted or were derived from graphs. The studies were classified as 'positive' or 'negative'. 
Methods of synthesis
How were the studies combined?
All ten studies were summarised narratively. Eight studies provided relevant and adequate data for an analysis of the correlation between treatment intensity and outcome.

How were differences between studies investigated?
Differences in mean scores and length of treatment between studies yielding positive results and those with negative results were determined using independent t-tests.

Results of the review
Ten studies with a total of 1,117 participants were included in the review.

Overall, five studies were positive and five were negative.

Eight studies (three rated 'good', four rated 'fair' and one unrated) provided data on the relationship between intensity of treatment and outcome. Four studies had positive outcomes and four negative outcomes. Compared with the negative studies, significantly more hours of therapy per week and significantly more total therapy hours in a significantly shorter period of time were provided in the positive studies. No significant differences in FCP scores were noted between the negative and the positive trials, so no further analysis was made using this measure. Analysis using the PICA and Token Test outcome measures revealed that the total length of therapy was significantly inversely correlated with the mean change in PICA scores (correlation, r=0.948, P=0.0001, n=9). There was a trend towards the same correlation for the Token Test, but this did not achieve statistical significance. The hours of therapy provided in a week was significantly correlated to greater improvement on the PICA test (r=0.957, P=0.001, n=9) and on the Token Test (r=0.811, P=0.027, n=7). The total hours of therapy received were significantly correlated with mean change in PICA (r=0.958, P=0.0001, n=9) and Token Test (r=0.963, P=0.0001, n=7) scores.

Authors' conclusions
Intense therapy over a short amount of time could improve outcomes of speech and language therapy for stroke patients with aphasia.

CRD commentary
The review had a clearly defined question with inclusion criteria for the participants, interventions and study designs. The search was limited, based on just one database and on checking the references of retrieved studies. Unpublished and foreign language material did not appear to be eligible for inclusion in the review, thus potentially introducing bias. More than one reviewer was involved in assessing the studies for inclusion in the review, extracting the data and assessing quality; this helps to reduce bias in the actual review process. Study quality was assessed, but the potential impact of study quality on the results was not fully explored. In comparing positive and negative studies, all studies regardless of sample size appear to have been weighted equally. Within these limitations, the review demonstrates a potential correlation between intensity of aphasia therapy and outcome. However, in order to prove a causal effect, further trials directly comparing different treatment regimens would need to be undertaken.

Implications of the review for practice and research
Practice: The authors stated that greater attention needs to be given to structuring the most appropriate treatment regime. They stated that intensive aphasia therapy delivered over 2 to 3 months is critical to maximising aphasia recovery.

Research: The authors stated that the impact of the intensity of speech and language therapy (including total length of therapy and hours of therapy per week) on aphasia recovery still requires further study.

Funding
Heart and Stroke Foundation of Ontario; the Ontario Ministry of Health and Long Term Care; the Parkwood Hospital Foundation; the Canadian Stroke Network.

Bibliographic details

PubMedID
12649521

DOI
10.1161/01.STR.0000062343.64383.D0

Original Paper URL
http://stroke.ahajournals.org

Indexing Status
Subject indexing assigned by NLM

MeSH
Aphasia /diagnosis /etiology /therapy; Humans; Stroke /complications; Time Factors; Treatment Outcome

AccessionNumber
12003009422

Date bibliographic record published
30/04/2005

Date abstract record published
30/04/2005

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.