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Meta-analysis exploring poststroke aphasia profiles and language recovery

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A meta-analysis exploring Poststroke Aphasia profiles and language recovery

## Commentary

**Implications for practice and research**

- Post stroke aphasia may symbolize a temporary or a significant life changing communication problem.
- The severity of aphasia on stroke patients has implications for functional capacity, discharge destination and potential to return to employment.
- The sooner a person receives treatment for a post stroke aphasia, the lesser the impact and the better the prognosis.

## Context

Stroke is one of the leading causes of disability worldwide and almost 350,000 stroke survivors have aphasia in the UK[1]. Depending on the severity, aphasia may affect oral communication, auditory, writing, reading comprehension and everyday communication[2-3]. Long-term communication impairment of up to a year affects almost three quatres of stroke patients and there is limited spontaneous communication recovery after this time[2]. Although there is a plethora of research on this topic, there is limited research evidence on potential recovery across the various impaired language domains and demography for people affected with aphasia. This systematic review examines the nature and role of demography and aphasia profile of stroke patients on language recovery post stroke[2].

## Methods:

A pragmatic approach using existing datasets was utilized and the researchers systematically searched MEDLINE, EMBASE, CINAHL, LLBA and Speech BITE based on their inclusion /exclusion criteria from inception to September 2015. The authors screened 5256 records and the researchers retrieved a final selection of articles on four communication domains: overall language ability (n = 24), Auditory comprehension (n = 29), Naming (n = 27) and Functional communication (n = 23). Primary analysis was based on randomised controlled trial while secondary analysis included all study designs. A one stage meta-analysis approach was used to combine available Individual Participant Data (IPD) from eligible datasets using SAS/STAT software version 9.4.

## Findings:

The largest mean absolute change in **overall language ability** within the RCT datasets was seen in those aged less than 55 years though gains were recorded in older age group as well. Although significant gains were seen in participants who enrolled between 1 – 3months (+16.2 points), 3 - 6 moths (+9.6points), after 6 months (+8.2 points), enrolment within 1 month of stroke was associated with the highest gains (+19.1 points). Men experienced slightly lower gains in overall language ability (12.3 points) than women (+14.3 points). The authors identified that the younger people of less than 55 years in the RCT datasets experienced greater gains in **auditory comprehension** than older people (+ 6.1).

Gains of +4.4 points were recorded for 66 to 75 years while younger people of less than 55 years recorded a gain of + 9.3 points on the Boston **Naming Test.** The study showed that younger people ≤ 55 experienced a high gain of +0.75 points on the AAT **Spontaneous-Speech Communication** Subscale and ≥ 75 years (+ 0.65 points).

The greatest absolute gain was observed for enrolment within 1 month of stroke when examining for chronicity and women experienced greater gains than men in **functional communication** (+0.76/+0.57).

**Commentary:**

This systematic review[2] based meta-analysis of Individual Participant Data examined the degree of recovery across all language domains over a different length of time among people with aphasia after stroke. The severity of aphasia at onset is linked with recovery and the greatest improvement for enrolment occurs within the 1 month of stroke. Improvement in language scores from baseline and aphasia chronicity decreased with increasing age in aphasic post-stroke patients. Thus, a key importance of this systematic review to future practice is the implications of early SLT delivery to the patient[2-3].

The data exhibited no evidence of significant heterogeneity and the risk of attrition and selection bias revealed low to moderate low level. Most participant groups were comparable with respect to demographic, stroke, and aphasia severity variables at baseline within all study types and the analysis of the dataset showed no evidence of publication bias. Nevertheless, this review has some limitations. The study does not include many possible important covariates like language stimulation, level of education, initial severity of stroke, mood disorders, co-existing intellectual impairments and socioeconomic situation because they are inconsistently unavailable.

Regardless, this large UK database study provides clinical insight and suggest direction for future research on post stroke language recovery. In conclusion, improving the impact of aphasia is a key long-term focus for the NHS due to the epidemiological data, negative effect and economic cost to the NHS and potential to improve its morbidity rate[1-3].

**Commentary on**: Predictors of Poststroke Aphasia Recovery: A systematic Review-Informed Individual Participant Data Meta-Analysis. Stroke 2021: 1778 – 1787.

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