



Service Priorities and Programmes
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Prediction of Post-stroke Cognitive Performance Using Cerebral Small Vessel Disease Markers

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Introduction

The delayed onset time of post stroke dementia can be varied, and it is easy to delay or miss detection of delayed onset cognitive impairment. It is difficult to provide early and specific intervention for cognitive impairment. Small vessel disease (SVD) markers could predict cognitive performance after stroke.

Objectives

To compare post-stroke cognitive performance at baseline and 3 years post-stroke and to determine the predictors of global cognitive performance and cognitive performance of different domains using the total number of SVD markers and the number of SVD markers in different regions of the brain.

Methodology

This was a retrospective cross-sectional cohort study on individuals who were recruited into the Stroke Registry Investigating Cognitive Decline (STRIDE) study, and 215 participants out of 1013 participants were included for analysis. Linear regression was done for analyzing whether SVD markers were predictors of overall cognitive performance and cognitive performance by domains.

Result

Significant decline was noted in overall cognitive performance and cognitive performance in different domains except attention 3 years post-stroke. White matter hyperintensities (WMH) as well as the total number of lacune in the brain, frontal and parietal lobe were significant predictors of overall cognitive performance and cognitive performance in different domains while PVS was not.

WMH, total number of lacune, number of lacune in frontal lobe and number of lacune in parietal lobe were significant predictors of cognitive performance. Global cognitive performance and visuospatial ability could be predicted by all of the four SVD markers. Memory, attention and executive function could be predicted by using two or more of the four SVD markers. Language ability could only be predicted by the number of lacune in parietal lobe. Prediction of post stroke cognitive performance based on SVD

markers helps us to design more specific intervention to focus on patients' needs. SVD markers were associated with post stroke cognitive decline. Future clinical trials for treating post stroke cognitive decline are needed.