ABSTRACT

Background: Vascular cognitive impairment after stroke has been studied and found to be frequent in the developed world.

Objectives: To study the frequency, pattern and associated risk factors of cognitive dysfunction in a cohort of stroke survivors at three months post stroke.

Methods: 50 stroke survivors aged 45-85 years were followed up from ictus and had detailed neurological assessment for functional outcome conducted at three months after stroke.

Neuropsychological assessment was performed using the CSI"D, stick design and a part of CAMCOG covering a vascular battery. MRI of the brain was also done at three months post stroke. All stroke subtypes were included. The NIHSS was performed between the seventh and tenth day after stroke to assess stroke severity, while the modified Rankin score, Barthel index and stroke levity score were used as outcome measures. MRI of the head categorized lesions (type, site, side, number, and volume), extent of white matter changes (WMCs) and degree of medial temporal lobe atrophy. The cognitive domains assessed were language, attention/orientation, memory, speech, visuospatial function and executive function. Impairment was defined as a performance of 1.5 standard deviation below the performance of a stroke-free control group, matched for age, sex and level of education who were also subjected to the same neuropsychological assessment.

Results: The overall frequency of VCI was 52%(26) with Vascular mild cognitive impairment (VaMCI) accounting for 44%(22) and vascular dementia (VaD),8%(4) of the patients with clinical stroke.
Demographic, clinical, stroke-related and radiological characteristics of the cases were analysed. Logistic regression analysis showed that the cognitive domains likely to be affected by a stroke are: language (odds ratio [OR]: 6.1; 95% confidence interval [CI]: 0.0813.74), orientation (OR: 2.3, 95% CI: 0.55-8.81), and memory (OR: 1.59, 95% CI: 0.19-3.05). The predictors of vascular cognitive impairment were age >70 years (OR: 2.75, 95% CI: 0.86-4.65), level of education < secondary school (OR: 8.57, 95% CI: 3.25-12.33), previous stroke (OR: 4.20, 95% CI: 0.95-6.58). The radiological predictors were, anterior circulation strokes (OR: 4.42, 95% CI: 0.62-7.55) and left hemispheric involvement (OR: 2.36, 95% CI: 0.85-4.56).

Conclusions: Post stroke vascular cognitive impairment is not solely due to a single stroke, but involves a combination of demographic, clinical and radiological factors like infarct location, vascular territory, small vessel disease, extent of WMC and medial temporal lobe atrophy. Improvement in acute stroke care and screening for cognitive impairment as an outcome will help to ameliorate the impending epidemic of post stroke vascular cognitive impairment.