

Post Stroke Cognitive Impairment

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Stroke is one of the common causes of mortality and morbidity across the globe. In India, the cultural diversity, lack of resources along with superstitions, misconceptions, lack of awareness and poor availability of health resources, pose a great challenge in managing stroke patients¹. Unfortunate patient is often left with residual neurological deficit causing mandatory dependence on others. While taking care of the stroke victim, major attention is given to neurological deficit especially in developing countries like India. Apart from this, an often-neglected aspect in a post stroke victim is cognitive dysfunction, which negatively impacts the health related quality of life². Post-stroke cognitive impairment (PSCI) refers to the development of cognitive deficit after a cerebrovascular accident when victim has no history or evidence of any major cognitive decline before the stroke. It is one of the vital factors contributing to loss of independence. A patient with cognitive problems has an increased risk of poor functional outcome, length of hospital stay, and mortality. Previously known as vascular dementia, this is now referred to as vascular cognitive impairment which includes both mild cognitive impairment and dementia³. Current trend of increased longevity and decline in stroke related mortality has led to increased incidence of post stroke cognitive impairment. It is very important to detect cognitive impairment early in its course¹. Prevalence of PSCI varies from 20-80% as per western literature³.

PSCI can be classified in two subtypes : multi-infarct dementia and strategic single-infarct dementia. Multi infarct dementia is characterized by a slowing of processing speed in cognitive functions, such as executive function, calculation, and abstraction. Working memory impairment is an

important feature. Strategic single-infarct dementia is caused by a single infarction in vital functional areas of the brain and clinical features vary according to the site of infarction. Few important symptoms include sudden onset of focal cognitive impairment such as apraxia and apathy, depression, and emotional incontinence, irritation, anger, delusions of persecution etc⁷.

A battery of tests is available to assess PSCI. Amongst all, Mini-mental state examination (MMSE)⁴ score and Montreal cognitive assessment scale (MoCA) score⁵ are the two important validated tools in assessing and diagnosing post stroke cognitive impairment, although they are found to underestimate prevalence of PSCI.

Various factors, most important being advancing age and vascular risk factors such as hypertension, diabetes mellitus, hyperlipidemia, atrial fibrillation, and smoking are thought to increase the risk of cognitive impairment after stroke. Infarcted volume in the strategic areas rather than total infarcted volume seems to have greater impact on occurrence of PSCI. Cerebral microbleeds are also thought to play a vital role in causation of PSCI. Important areas are cortical limbic areas, heteromodal association areas including the frontal cortex and the white matter, which account for much in the cognitive impairment after stroke⁸.

Management mainly includes pharmacological agents including acetylcholine-esterase inhibitors, selective serotonin reuptake inhibitors and some antipsychotic drugs along with rehabilitation therapy⁷.

To evaluate the burden and risk factors associated with cognitive impairment and its association with vascular territory and physical disability after first ever ischemic stroke, Joshi RW et al conducted a case control study in IGGMC, Nagpur. They evaluated a cohort of 84 subjects diagnosed to have first ever ischemic stroke. They used MMSE and MRS to assess cognitive impairment and physical

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disability respectively. In their study, 57.14% subjects were found to have cognitive impairment at presentation and in 48.8% it remained persistent after one month. Cognitive impairment was found to be more significant in large territory stroke along with severe physical disability. Vascular risk factors like obesity, hypertension, diabetes mellitus, dyslipidemia were also found to be significantly associated with PSCI.

In the light of scarce data regarding PSCI from India, it is imperative that more number of such studies should be undertaken in different parts of country with sizeable number of subjects.

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