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Natural History of Cognitive Impairment After Stroke and Factors

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Description

To describe the natural history of cognitive impairment following stroke over three years; determine factors associated with recovery of post-stroke cognitive impairment and examine the effect of this recovery on stroke outcomes. Observational study. Setting: Population-based register of first-ever strokes. Measures: Mini-Mental State Examination (MMSE) for cognition (cognitive impairment: MMSE<24), Barthel and Frenchay activity indices for disability. To describe its natural history, cognition was assessed at three months, 1, 2 and 3 years after stroke in 163 subjects registered in 1995. Recovery of cognitive impairment was examined using a larger cohort registered between 1995 and 1998 (n=476) and 193 subjects cognitively impaired at three months were reassessed a year post stroke; 34 who had recovered cognitively (MMSE 24–30) were compared with 102 with persistent cognitive impairment in terms of demography, risk factors, initial impairments and stroke subtype. Cognitive impairment remains highly prevalent up to three years after first stroke. Recovery from cognitive impairment is associated with smoking and possibly right hemisphere strokes, but compromised by visuospatial neglect. These associations require further clarification [1]. Previous studies examining the relationship between cognition and ability to benefit from inpatient rehabilitation have found cognitive dysfunction to be associated with a poor rehabilitation outcome. To examine whether cognitive dysfunction precluded effective rehabilitation, 52 consecutive admissions to a geriatric rehabilitation unit were assigned Mini Mental State Examination (MMSE) scores. Functional gains were assessed by the change in Functional Independence Measure (FIM) score from admission to discharge. Neither MMSE score alone nor in combination with age was significantly associated with change in FIM (r=0.10; R=0.25; P<0.18). MMSE score alone and in combination with age was correlated with functional status on admission (r=0.58; R=0.58; P<0.0001) and discharge (r=0.49; R=0.51; P<0.0004). Patients evidenced a similar increase in functional status regardless of cognitive ability, but cognitively impaired individuals entered the inpatient unit with a lower functional status, and their level of function at discharge was also impaired relative to cognitively intact cohorts. Low MMSE scores were associated with a greater likelihood of nursing home placement, but a considerable percentage (38%) of individuals with severe cognitive impairment and the majority of individuals with mild to moderate cognitive impairment returned home following discharge. These findings suggest that geriatric patients with cognitive dysfunction should be considered for admission to rehabilitation programs if functional gains will affect quality of life or disposition [2].

The Interrelationship between Physical Frailty

The spectrum of cognitive decline in the elderly ranges from what can be classified as normal cognitive decline with aging to subjective cognitive impairment to Mild Cognitive Impairment (MCI) to dementia. This article reviewed the up-to-date evidence of MCI including the diagnostic criteria of MCI due to Alzheimer's disease, vascular cognitive impairment and MCI due to Parkinson disease, management and preventive intervention of MCI. There are various etiologies of MCI, and a large number of studies have been conducted to ascertain the practical modalities of preserving cognition in predementia stages. Lifestyle modification, such as aerobic exercise, is an approved modality to preserve cognitive ability and decrease the rate of progression to dementia, as well as being recommended for frailty prevention. The size of the elderly population has been dramatically increasing worldwide. In 2017, people aged 60 or older accounted for 13% of the global population at about 962 million people. The size of this population is predicted to rise to 1.4 billion, 2.1 billion, and eventually 3.1 billion people by 2030, 2050, and 2100, respectively.1 Furthermore, this population accounts for a higher proportion of total medical expenses than do younger age groups; one important factor is due to frailty.2 Frailty is one of the geriatric syndromes caused by declining body reserve in multiple vital systems, characterized by decreased ability to tolerate acute stress and increased vulnerability of unfavorable clinical outcomes such as falls, disabilities, hospitalization, and death.3-5 The interrelationship between physical frailty and cognitive impairment is apparent. It leads to worsening physical and cognitive function and poor quality of life.6 Cognitive frailty is defined as the co-occurrence of physical frailty and cognitive decline in older people without dementia. It is associated with more adverse health outcomes than patients with prefrailty and frailty without cognitive impairment, according to the population-based cohort in Singapore with the prevalence of 10.7%.7 The China Cognitive Frailty, a study of 5708 community-dwelling elderly people without dementia, found that the prevalence of cognitive frailty was 2.7% and increases with age.5 To maintain independency in older adults, focusing on cognitive function is the novel target concern since some causes of cognitive decline might be reversible or potentially reversible/treatable. Therefore, understanding cognitive decline in older adults is one of the important issues [3]. The aim of this study was to identify key aspects of the impact of cognitive impairment on patients with mild cognitive impairment (MCI) and mild probable Alzheimer Disease (AD) and their informants, and identify overlap and differences between the groups. Structured focus group discussions were conducted with MCI patients, AD patients, MCI informants, and AD informants. Participants were recruited from memory clinics in the U.K. and the U.S.A. A total of 20 AD and 20 MCI patients and 16 AD and 11 MCI informants participated. Sessions were content reviewed to identify key impacts of cognitive impairment; results were compared across diagnostic groups and for patients and informants [4]. Self and informant reports of functional abilities are weighted heavily in diagnostic decision making regarding Mild Cognitive Impairment (MCI). However, it is unclear whether patients with MCI are fully aware and provide reliable estimates of their functional status. In this study, the authors used three different

approaches to examine accuracy of self-report of financial abilities among patients with MCI. Patients with MCI are not fully aware of deficits in their financial abilities. Both cognitive impairment and depression impact MCI patients' self-reported functioning. In addition, MCI informants misestimate patients' financial abilities. This raises concerns about the widespread use of informant report as the gold standard against which to evaluate patient self-report of functioning[5].

References

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