

Cognitive Impairment in Isolated Cerebellar Stroke :Patterns and Relationship to Stroke Syndrome.

H. Ahmed EL- Boraie, M. Abd El - Salam Mohamed

ABSTRACT:

Most studies of stroke outcome have focused on physical consequences, few have examined intellectual deficits. The extent of neurological stroke and cognitive deficit is critical in evaluating new treatments, prognosis and rehabilitation of stroke patients. Objectives: To test the hypothesis of an association between cognitive dysfunction in a group of patients with subcortical (isolated cerebellar) stroke using neuro cognitive assessment of higher cortical function as well as to detect the patterns of cognitive impairment and vascular risk factors associated with isolated cerebellar stroke. Methods: The study was done on thirty patients with acute cerebellar stroke over one year period from neurology department of Mansoura university Hospital, and fifteen healthy people, as a control group. Patients were subjected to clinical assessment including neurological examination and brain imaging to confirm diagnoses and functional psychiatric assessment by structured psychiatric protocol. Both groups were subjected to psychometric assessment in the form of neuropsychological battery to detect cognitive impairment involves mini-mental state examination, Wechsler-Adult intelligence scale, selected subtests from Wechsler memory scale: logical memory A,B, digit forward and backward, visual reproduction I, II and word association, organic battery (Bender Gestalt recall and copy tests, Trail making A,B). Results: 1- Cognitive impairment defined as failure on any four or more items, occurred in 53.3% of patients with isolated cerebellar stroke. 2- Vascular risk factors like, diabetes mellitus and hypertension were more frequent in patients with cognitive impairment than patients without. 3- Low educational level (=6 years), dysarthria and gait impairment were more frequent in the patients with cognitive impairment. 4- Patients with stroke showed deterioration on almost all neuro psychological tests compared to control subjects. 5- Among patients with stroke, cognitive impairment was most frequently associated with bilateral and multiple cerebellar infarctions. The neuropsychological tests or items that deteriorated with highly significant level in patients with cognitive impairment than without were performance part of WAIS, Trail making A, Trail making B, logical memory A, visual reproduction I, and II. Conclusion: Cognitive impairment is a common sequel of isolated subtentorial stroke, commonly involving deterioration in performance on mini-mental test, logical memory A, Trail making A, B, visual reproduction I, II, word Association, Bender Gestalt (BG) copy and performance part of WAIS. The presence of cognitive impairment in patients with stroke has important functional consequences, independent of the effects of physical impairment. Studies of stroke outcome and intervention should take into account both cognitive and physical impairments.

Introduction:

Cerebrovascular disease is an important cause of morbidity in the elderly, resulting not only in physical disability, but also significant cognitive impairment. Most studies of stroke outcome have focused on physical consequences, few have examined intellectual deficits (Tatemichi et al 1994).

The extent of neurological stroke and cognitive syndrome deficit is critical in evaluating new treatments, prognosis and rehabilitation of stroke patients (Caplan, 2002). However, the lack of positive therapeutic findings with neuroprotective agents in stroke patients may be due to the negligence of cognitive assessment as an

outcome measure (Mohr, 1999). Currently employed stroke scales are almost concerned with long tract signs, incoordination and attention while incorporating very limited ratings of higher cortical functioning (D'olhaberriague et al, 1996 and Edwards et. al, 1995).

Subcortical infarcts and neuro-cognitive impairment are now well described often under the title of so called strategic infarct or vascular dementia (Madureira, 1999). An alternative approach to characterizing the cognitive consequences of stroke would be to examine a broad range of specific neuropsychological deficits, independent of the diagnosis of