

MICTURITION DISORDERS AMONGST ELDERLY STROKE PATIENTS UNDERGOING REHABILITATION AND ITS EFFECT ON THE OUTCOME OF REHABILITATION

Hypothesis / aims of study

Micturition disorders are common phenomenon observed in patients after cerebrovascular events. Urinary incontinence affects 32-79 percent of people admitted to hospital after stroke whereas voiding difficulties and retention of urine can occur up to 29 percent of patients. On the other hand, presence of urinary incontinence is a predictor for stroke outcome. It was associated with higher mortality, poorer function recovery as well as higher institutionization rate after hospital discharge.

Urinary incontinence had been associated with frontal lobe, anterior edge of paraventricular white matter, internal capsule and large lesions of putamen or thalamus. A recent paper pointed out the importance of parietal involvement when combined with frontal lobe and basal ganglion injury in leading to urinary incontinence with impaired awareness. Extensive white matter change was also found to be a risk factor. There was also study revealing that the size of the cerebral lesions appeared to be a more important correlate.

Both incontinence and stroke are common in older people. The coexistence of stroke and micturition disorder significantly affects the quality of life and independence of older people. The proper recognition of the problem of micturition disorders in stroke patients and its appropriate management will improve the care and quality of life of stroke survivors.

Objectives

This study has the following objectives:

1. To investigate the prevalence of micturition disorders (defined as presence of urinary incontinence, use of indwelling catheter or presence of significant amount residual urine more than 199 ml) in elderly patients with recent stroke newly admitted to rehabilitative facilities.
2. To correlate the types and sites of cerebral lesions in stroke patients with occurrence of micturition problems.
3. To examine the relationship of types of micturition disorders with the rehabilitation outcome and discharge status of patients

Study design, materials and methods

The present study is a prospective observational study commenced in November 2008. Subjects were recruited from participating rehabilitation facilities in Hong Kong.

Elderly stroke patients aged 60 years and older admitted to the rehabilitative facilities were recruited into the study.

Data Collection

The following information are collected from the study subjects: age and gender, urinary continence status before the present stroke episode, voiding pattern including self micturition, incontinence episodes, bladder sensation, post-void residual urine assessed by bladder scan were recorded by nurses, patients' significant co-morbidities - past history of stroke, hypertension, diabetes mellitus, dementia, parkinsonism, benign prostatic hypertrophy and urological or gynecological operations; Presence of concurrent urinary tract infection, current medication, Glasgow Coma Scale, cognitive function by Abbreviated Mental Test or Mini Mental State Examination, Communication problem such as dysarthria or aphasia, nature and site of intracranial lesion according to CAT scan or MRI, Modified Barthel Index (100) upon admission and discharge, Discharge date and destination including death or transfer to institutions

Results

A total of 1159 subjects were recruited from 13 rehabilitative facilities in Hong Kong. There were 514 male and 645 female patients, mean age being 75.3 and 78.4 year old respectively. Upon admission to the rehabilitative facilities, 520 patients (44.9%) were incontinent of urine and 206 patients (17.8%) were inserted an indwelling catheter because of urinary retention. Among the continent subjects, 5 patients had an amount of residual urine more than 200 ml. Hence the overall prevalence of micturition disorder was 63.1%. Micturition disorders were found to be more common in patients suffering from cerebral haemorrhage, cerebral infarcts and multiple lesions. Patients with cortical stroke have more micturition disorders (71%) compared with other stroke locations. Patients with more severe functional impairments as measured by Modified Barthel Index have higher prevalence of micturition disorders (75% in those with MBI less than 34). There was higher prevalence of micturition disorders amongst older stroke survivors (64% in 90+ years old, vs 40.5% in those age between 60-69). Impaired conscious level, cognitive impairment and impaired communication were also risk factors for new bladder problems. Patients with micturition disorders were significant predictors for prolonged hospital stay, poor functional recovery, requirement for nursing home institution and mortality (4.8% vs 1.2%)

Interpretation of results

Micturition disorders are prevalent amongst Chinese stroke survivors undergoing rehabilitation. It is highly associated with cerebral haemorrhage, major infarcts, multiple strokes, cortical strokes, impaired conscious level, cognitive impairment and speech disorders. Micturition disorders are also associated with adverse outcome of stroke rehabilitation including prolonged hospital stay, admission to nursing home and functional recovery.

Concluding message

Micturition disorder is very common among stroke patients. Identification of risk factors for micturition disorders as well as proper treatment may significantly improve the outcome of stroke patients.

<i>Specify source of funding or grant</i>	Hong Kong Geriatric Society
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Hospital Authority Kowloon East Ethics Committee
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes