

URINARY INCONTINENCE AFTER STROKE: ITS SIGNIFICANCE FOR PATIENT OUTCOME

Aims of Study

Urinary incontinence (UI) is a strong risk factor for poor functional outcome after stroke, but the reasons for this are still unclear. UI is a prevalent condition in the elderly general population. Few studies have differentiated between new-onset and pre-existing UI. Different types of UI may have a different course and impact on outcome. Our study aims to

- assess the prevalence and incidence, the clinical features and risk factors, and the course of micturitional disturbances in acute stroke patients, and
- relate them to the outcome at hospital discharge and at three months, in terms of survival, dependency and accommodation status.

Methods

We aim to include at least 300 patients with a first-ever or recurrent acute stroke, admitted to the Stroke Unit at Ullevaal University Hospital. Within the first 10 days, the patients are comprehensively assessed as to their comorbid conditions (including continence status) and medical risk factors, their premorbid functional and mental ability, and their actual medical, functional, cognitive and micturitional status. They have to be awake, stable/improving and able to communicate. We exclude those who are delirious, having severe aphasia, having other life-threatening illness, or being severely dependent before the stroke. We classify the clinical symptoms and signs of micturitional disturbances according to ICS' guidelines, and use validated tools for assessment of physical and mental impairment and disability: Oxford Community Stroke Project (OCSP)-classification of stroke, Barthel ADL Index (BI), Nottingham Extended ADL (NEADL)-scale, 5 meter walking test (5mWT), Mini Mental State Examination (MMSE), Screening Instrument for Neuropsychological Impairments in Stroke (SINS), Informant Questionnaire on Dementia in the Elderly (IQCODE), Trail Making Test (TMT) A + B, and Clock Drawing Test (CDT). The assessment is repeated at three months after stroke. The following data represent the results at baseline and at hospital discharge.

Results

Data collecting started in October 2002. So far, we have included 100 patients (50% men) with mean age 76 years (range 27– 97). 30% had had a previous stroke. 45 % had pre-existing micturitional disturbances (30% UI, 12% urgency/frequency and 3% severe voiding problems). New-onset UI occurred in 19 patients, and four experienced a substantial worsening of their previous UI. Only one patient had new-onset voiding problems and two had frequency/urgency. Two patients died before discharge.

The predominant clinical type of new-onset UI was the unconscious or mixed unconscious/urge type (15 of 19 patients); four had urge or mixed urge/stress UI. In patients with pre-existing UI, the urge or mixed urge/stress type was most prevalent (55%), followed by the unconscious or mixed unconscious/urge type (20%). In the whole study population, the latter UI type was not related to age, sex or previous stroke. The relative risk (RR) for having the unconscious UI type was clearly lower for the incontinent patients with good functional ability pre-stroke (RR 0.17 [95% CI 0.03, 0.87], $p=0.02$)*, higher overall functional status in the early post-stroke phase (RR 0.14 [CI 0.05, 0.42], $p<0.001$)*, no cognitive impairment (RR 0.27 [CI 0.15, 0.46], $p=0.001$)*, good attention and processing speed (RR 0.23 [CI 0.08, 0.67], $p=0.002$)*, and for those discharged home (RR 0.30 [CI 0.16, 0.57], $p<0.001$)*.

* = table analysis, Chi square/Fisher's Exact test

Conclusions

This study shows a considerably high prevalence of pre-existing UI in patients with acute stroke, and relatively few incident cases of UI. The majority of new-onset UI is of the

unconscious or mixed unconscious/urge type. This type may be a marker of poor overall functional capacity, including cognitive performance. We will include in our study a comprehensive investigation of the cerebral CT scans, and further explore executive cognitive functions such as acute and sustained attention, awareness and concentration, because we presume that these are especially important for micturition control.