

LOWER URINARY TRACT DYSFUNCTION FOLLOWING TRAUMATIC BRAIN INJURY

Hypothesis / aims of study

Many reports have been published on urinary tract function and dysfunction after stroke (1,2). According to these studies lower urinary tract symptoms (LUTS) are present in as much as 50-87% of patients with a prevalence of urinary incontinence of about 50% (1). Less data have been produced on urinary tract function and dysfunction following traumatic brain injury (TBI). A 62% prevalence of urinary incontinence has been reported, while urinary retention can be present as well in about 10% of patients (3). Thus, aim of our study was to assess lower urinary tract function in TBI patients hospitalised in a rehabilitation centre.

Study design, materials and methods

47 consecutive patients after severe TBI (36 male; 11 female) with a Glasgow Coma Scale < 8 in the first 48 hours were included in the study. Mean age was 35,7 +/- 15,1 years. Mean time from TBI was 4,1 +/- 1,3 months. Mean period of coma, defined as time to follow commands, had been 23,7 +/- 13,1 days. Mean Glasgow outcome scale at first evaluation was 2,7 +/- 0,4. All patients underwent urologic work-up comprising history, physical examination, lower urinary tract ultrasound, urinalysis and urodynamics. Clinical and urodynamic data were collected.

Results

40/47 (85%) patients had an indwelling bladder catheter for a median of 38 (21-240) days. After catheter removal 32/47 (68%) reported LUTS, being increased daytime frequency (57,4%) and urgency (51%), the most frequent symptoms. Urinary incontinence was reported by 20/47 patients (42,6%). 5/47 patients (10,8%) were performing intermittent catheterization for complete urinary retention. It is worthy to note that mean time from TBI was 1,9 months in this 5 patients, whilst in the remaining 42 it was 4,9; this difference was statistically significant (p=0.01). 6/47 (12,7%) patients had a urinary tract infection at the moment of the first evaluation. No patient showed any pathologic findings at ultrasound examination. Urodynamic evaluation showed neurogenic detrusor overactivity in 30/47 (63,8%) patients; detrusor underactivity was present in 2/47 (4,2%), with post-void residual urine >150 ml. An acontractile detrusor was present in the 5/47 (10,8%) patients performing intermittent catheterization. A total of 37/47 patients (78,7%) showed an abnormal urodynamic observation; 5 of them (10,8%) didn't report any symptoms.

Interpretation of results

LUTS and in particular urinary incontinence are commonly observed after TBI, with a prevalence similar to that reported after stroke, according to our series. The symptoms of the bladder filling phase (in particular increased daytime frequency and urgency) are present in more than 50% of patients; urinary incontinence is present in 42,6% of patients. Neurogenic detrusor overactivity is the most common urodynamic finding, being observed in as much as 63,8% of patients. Acontractile detrusor can be present in 10,8% of patients; in our series patients with an acontractile detrusor showed a lower time from TBI, in comparison to the rest of the patients; none of them had had the TBI more than 4 months before observation. This finding could mean that this urodynamic observation, and the consequent retention of urine, is present only in the early phase after TBI. Detrusor underactivity and overactivity were observed in 5 asymptomatic patients (10,8%). This finding could indicate the execution of at least non-invasive urodynamic tests in all patients, even considering that a cognitive impairment can be present in these subjects.

Concluding message

LUTS and urinary incontinence are commonly observed after TBI. An acontractile detrusor can be observed in the first phase after TBI. Urodynamic tests are useful in this group of patients allowing to better understand the function/dysfunction of the lower urinary tract of the examined subject.

References

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FUNDING: None

HUMAN SUBJECTS: This study did not need ethical approval because It is an observational study based on common clinical practice. but followed the Declaration of Helsinki Informed consent was obtained from the patients.