

RELATIONSHIP BETWEEN OVERACTIVE BLADDER SYMPTOM SEVERITY, CYSTOMETRIC BLADDER CAPACITY AND DETRUSOR OVERACTIVITY

Hypothesis / aims of study

It is widely assumed that patients with overactive bladder (OAB) have smaller than normal bladder capacities and that there is an inverse relationship between the severity of OAB and bladder capacity. The aim of this study is to test that hypothesis. Secondly, we sought to evaluate the relationship between symptom severity and the presence or absence of detrusor overactivity.

Study design, materials and methods

This is a prospective study of consecutive patients with overactive bladder. Patients were considered to have overactive bladder if they scored 3 or 4 on question 5 of the validated overactive bladder symptom score (OABSS) – “How often do you get a sudden urge or desire to urinate that makes you want to stop what you are doing and rush to the bathroom? (A score of 3 is “a few times a week”). All patients underwent the OABSS and videourodynamic studies. Cystometry was performed with room temperature radiographic contrast at non-physiologic rates via a 7 F double lumen urethral catheter. Pabd was measured via a fluid filled rectal balloon catheter. All transducers were zeroed to atmospheric pressure. Comparisons were made between the OABSS (possible score 0-28, 28 represents most severe OAB symptoms), presence or absence of involuntary detrusor contractions and cystometric bladder capacity (CMBC). Bladder capacity and detrusor overactivity were defined by the ICS Standardisation of Terminology definitions. Statistical analysis was done using Spearman nonparametric correlation utilizing GraphPad InStat® statistical software.

Results

Two hundred forty three consecutive OAB patients were recruited and completed the OABSS. Thirteen were excluded because of urinary tract infection (7) and microhematuria (6). Eighty-nine were excluded because they declined to undergo invasive studies or their symptoms didn't warrant them. Of the remaining 141, 51 were men (mean age 66) and 90 were women (mean age 66). Cystometric bladder capacities ranged from 104 to 1500 ml (mean 487+/- 237; median 461.5). The OABSS ranged from 4 to 24 (median score 14). Comparisons between OABSS and CMBC revealed no correlation between the severity of overactive bladder and cystometric bladder capacity (Spearman $r = -0.17$, $p = 0.04$). However, the presence of involuntary contractions correlates highly with OABSS ($r = 0.33$, $p < 0.0001$) and correlates inversely with cystometric bladder capacity ($r = -0.32$, $p = 0.0001$).

Interpretation of results

As expected, the severity of overactive bladder symptoms is related to the presence of involuntary detrusor contractions as determined by urodynamic studies. Further, involuntary contractions are inversely related to bladder capacity. Despite these findings, severity of OAB symptoms is unrelated to bladder capacity in contrast to commonly held assumptions. These findings suggest the possibility of two different etiologies of OAB – one a motor, the other a sensory phenomenon – that may have different pathophysiologies and different treatment paradigms.

Concluding message

In patients with overactive bladder, symptom severity does not correlate with cystometric bladder capacity, an unexpected finding contrary to the commonly held assumption that OAB severity is inversely related to bladder capacity. There is a high correlation between the presence of detrusor overactivity and OABSS and an inverse correlation with bladder capacity.

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Is this a clinical trial?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
Specify Name of Ethics Committee	Lenox Hill Hospital IRB
Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes