

CAN URODYNAMIC STUDIES OBJECTIVELY REPRODUCE THE COMPLAINT OF URINARY INCONTINENCE IN FEMALE PATIENTS?

Hypothesis / aims of study

Urodynamics have become established as the gold standard for detailed assessment of lower urinary symptoms. Some clinical studies concluded that patients' complaints are sensitive and specific in the diagnosis of various types of urinary incontinence (UI). The aim of this study is to determine the correlation between patients' complaint of different types of urinary incontinence and the objective observation of urinary leakage during urodynamics (UDS).

Study design, materials and methods

A retrospective analysis was performed on a prospectively collected data of adult female patients (16 years and over) who had urodynamics at our institute between 1993 and 2004. Those with neurogenic disorders or incomplete data were excluded. The patients' complaint of UI was checked against the type of incontinence observed during UDS. Methods, definitions and units conform to the standards recommended by the International Continence Society.

The sensitivity, specificity, positive and negative predictive values of UDS were measured and compared for different types on incontinence.

Results

During the study period, 8972 adult females underwent routine or video UDS. 1240 were excluded as 465 had neurogenic disorders and 775 had incomplete data. Of the remaining 7732 patients, 6615 had routine UDS and 1117 had video UDS. The mean age of patients included was 52.4 years (median of 51) ranging from 16 to 91 years.

Based on patients' complaints, 4054 had mixed urinary incontinence (MUI), 2402 had pure stress urinary incontinence (SUI), 893 had pure urgency urinary incontinence (UUI) and 383 had neither SUI nor UUI. The patients' complaints and the actual findings during UDS are summarized in table 1.

Patients' complaint	Observed incontinence during UDS				
	USI: stress incontinence (%)	Urodynamic incontinence	DOI: Detrusor overactivity incontinence (%)	USI and DOI (%)	No incontinence (%)
SUI: 31%	1484 (62)		136 (6)	148 (6%)	634 (26)
UUI: 12%	66 (7)		210 (24)	22 (3)	595 (66%)
MUI: 52%	1762 (44)		574 (14)	523 (13)	1195 (29)
No SUI or UUI: 5%	26 (7)		37 (10)	10 (3)	310 (80)
Total: 7732	3338 (43)		957 (12)	703 (9)	2734 (36)

Table 1: the distribution of patients' complaint against the incontinence observed during UDS

Table 2 shows the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of UDS in confirming the presence and the type of UI.

UDS diagnosis	Sensitivity %	Specificity %	PPV %	NPV %
USI	68	90	97	31
DOI	26	88	80	40
USI/DOI	13	95	74	50

Table 2: how good is UDS in defining the type of UI

Interpretation of results

It appears that UDS can reproduce the patients' complaint of SUI better than UUI and MUI as previously reported (1). However, there is still good percentage of patients who complain of stress, urgency or mixed urinary incontinence but UDS did not provide objective evidence for it (26, 66 and 29% respectively). In general, a third of patients who complained of UI had no incontinence during UDS.

This discrepancy between symptoms and UDS findings could be due to poor sensitivity of the test, the patients' inability to explain their symptoms. For example, some patients may not be able to distinguish between urinary incontinence and vaginal discharge or vaginal pooling. Also the intermittency of those symptoms could explain the results. Patients with UUI once a month, it is unlikely to show on a 20 minutes test. It is more difficult to do so if the patient's symptoms only occur in specific situations such as when riding a horse or swimming. The environment of the test could have an effect on the reproducibility of symptoms.

These study findings have implication on managing patients. There is argument that if the patient has history of pure stress incontinence, UDS are not indicated before routine incontinence surgery (2). If we follow the above guidance, 12% might have surgery for what appears to be pure SUI but the patient actually has DOI with or without USI. It has been shown before that concomitant DOI has negative effect on surgical outcome for stress incontinence.

Interestingly, there was an objective evidence of SUI, MUI and especially DOI during UDS in 20% of those who denied those types of UI as a symptom. This shows that there are still some patients who refrain from admitting to incontinence even when they are asked about it specifically.

Concluding message

UDS cannot always reproduce patients' symptoms of UI. Ambulatory urodynamic studies, though not fully sensitive, might have a role when routine or video UDS fail to reproduce the patient symptoms. There are still some patients who refrain from admitting to incontinence.

References

1- Eur Urol 2003 Jan; 43(1):63-69.

2- www.nice.org.uk: urinary incontinence guidelines, Oct 2006

<i>Specify source of funding or grant</i>	None
<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>	No
<i>This study did not require ethics committee approval because</i>	It was a retrospective analysis of clinical data. No intervention, related to the study, was undertaken and no contact was made with the patients
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No