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CHARACTERIZING NORMAL URODYNAMIC PARAMETERS IN OLDER WOMEN: A NEEDLE IN A HAYSTACK?

Hypothesis / aims of study

Defining normal urodynamic parameters in young healthy women controls has been done (1). However, such definition in older women remains an unachieved goal and will challenge the development of reliable obstruction nomograms until the norm can be defined in this age group. Most older women have some elements of lower urinary tract symptomatology (2) which precludes calling them "normal". Urodynamic changes in older women with SUI have recently been reported (3), but those are not "normal" patients either. In this study we reviewed our large urodynamic database for older women who underwent urodynamic studies (UDS) for a variety of presenting symptoms and were found to have a normal study, including on repeat testing, as another approach to circumvent this critical limitation in our current knowledge.

Study design, materials and methods

Following IRB approval, UDS tracings of non-neurogenic women > 40 years and older who were studied for various lower genito-urinary symptoms (LUTS) and found to have a normal study were reviewed. Demographic data, indications for UDS, and UDS parameters were extracted by a neutral reviewer with UDS expertise. UDS was conducted according to an established protocol using a 6F dual-lumen catheter (ICS guidelines) with a Laborie Aquarius XLT ™ and interpreted with a pre-existing template to standardize the reading. The fill-void study was frequently repeated during the same UDS session to confirm normal findings.

Results

From 2000-2012, 43 middle-aged women, without abnormal UDS finding, were retrospectively reviewed from a prospective database of over 2200 studies. The majority were Caucasian, with mean age 63 (range 42-85), mean BMI 24.5 (20-37), mean parity 2 (0-4), and 67% were post-menopausal. Main UDS findings are reported in Table 1.

Table 1: Urodynamic data

	Group 1 (incontinence)	**Group 2 (Pelvic organ prolapse)**	**Group 3 (all others)**	**All groups combined first void**	**All groups combined second void**
	n = 16	n = 13	n = 14	n = 43	n = 29
Age	64 ± 11	61 ± 8	65 ± 14	63(42-85)	
NIF	n = 9	n = 11	n = 9		
Qmax (mL/sec)	22.3± 11.2	18.7± 9.1	20.4± 7.2		
VV(mL)	274 ± 170	273 ± 175	284 ± 177		
PVR(mL)	29.4±36.9	60.5±48.0	61±128		
PFS	n = 16	n = 13	n = 14		
MCC(mL)	330±69	355±122	375±196	352±135	345±114
Qmax (mL/sec)	22.2± 5.9	16.6± 4.2	20.5± 10.3	19.9± 7.4	18 ± 7
PdetQmax (cmH2O)	22.5± 6.9	20.5± 11.6	20.2± 7.5	21.2± 8.5	19.9± 9.5
VV(mL)	365 ± 75	417 ± 161	406 ± 203	394 ± 149	358 ± 137
PVR(mL)	6.4 ± 15.3	3.7 ± 9.0	11.1 ± 32.5	7 ± 21	8 ± 26

NIF: Non-invasive flow, MCC: maximum cystometric capacity, Qmax:maximum flow rate, PdetQmax: detrusor pressure at Qmax, VV: voided volume, and PVR: post volume residual .

Interpretation of results

Finding normative UDs data in older women is like finding a needle in a haystack. We were fortunate to have a prospective UDS database with coding assigned to normative data from which to extract this much needed information. There are no other sources to define normalcy in this age group. The strength of this data derives from consistent findings between the 1st and 2nd fill-void study on the same patients, reaffirming their coding as normal.

Concluding message

UDS parameters from a cohort of middle- aged women with normal findings are now available as reference values when interpreting urodynamic studies for women in this age group, or for a better design of an age-matched bladder outlet obstruction nomogram.

References

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Disclosures

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