

URODYNAMICS IN WOMEN FROM MENOPAUSE TO OLDEST AGE: WHICH MOTIVE? WHICH DIAGNOSIS?

Hypothesis / aims of study

Lower urinary tract dysfunction is a major cause of decreased quality of life in ageing population. Despite the fact that many patients avoid discussing their problems, postmenopausal women constitute a large population who undergoes urodynamics for lower urinary tract symptoms (LUTS). Our objectives were to retrospectively analyze such a population of outpatients to discuss the changes due to ageing in the motive of referring and diagnosis.

Study design, materials and methods

The population consisted of 449 consecutive women aged ≥ 55 years who underwent urodynamics for LUTS. Patients were stratified in 3 sub-groups: 55-64y (A), 65-74y (B), and 75-93y (C). A complete urodynamic session included one free flow (FF), urethral pressure profilometry (UPP) bladder empty before cystometry and pressure-flow (PF) study (7F triple-lumen urethral catheter, filling rate 50 mL/min) in seated position, UPP bladder filled (according with the functional bladder capacity) and a second FF. Clinical evaluation comprised of history of LUTS, previous history of neurological disease, of pelvic floor status and of previous pelvic surgery. Urodynamic assessment comprised of the feasibility of each test, the results of the cystometry and profilometry. Then, proposed diagnosis were analyzed.

Results

Population: The distribution was homogeneous: A=137, B=155, C=157.

LUTS: Incontinence was the main complaint: 308(68%) with 125 urge, 111 mixed and 72 stress (table 1); mixed incontinence increased with age.

Incontinence	A (55-64 y)	B (65-74 y)	C (≥ 75 y)
Urge	41	39	45
Mixed	23	38	50
Stress	20	30	22
Nbr pts	84	107	117

Other major complaints were 73 pollakiuria, 50 dysuria or retention.

Previous history: 116 neurological disease, 42 pelvic organ prolapse and 192 previous pelvic surgery (of which 71 TVT or TOT: A = 23; B = 29; C =19).

Feasibility of the tests: Success in interpretable tests (urinated volume > 100 mL) was similar in the 3 groups with 55% FF at arrival, 59% PF and 76% FF at end of the session.

Cystometry: detrusor overactivity (DO) was found in 135 patients (30%) significantly increasing in C: 43% vs 23% A&B ($p < .001$).

In the sub-group (196 pts) without neurological disease or pelvic surgery the detrusor behavior was normal in 114 (58%). Overactivity was found in 48 (of which 23 with impaired contractility) and hypocontractility in 23; these behaviors increased significantly with aging ($p = .016$).

In the sub-group (253 pts) with neurological disease or/and pelvic surgery the detrusor behavior was normal in 129 (51%). Overactivity was found in 87 (of which 23 with impaired contractility) and hypocontractility in 34; overactivity with impaired contractility and hypocontractility increased significantly with aging ($p = .0002$).

Rhythmic rectal contractions were observed in similar percentage in age sub-groups: mean 32%.

UPP: MUCP decreased accordingly with age and was significantly lower ($p < .0001$) bladder filled vs bladder empty in the 3 groups (table 2).

MUCP cm H ₂ O	A (55-64 y)	B (65-74 y)	C (≥ 75 y)
Bladder empty	64 \pm 27	53 \pm 23	45 \pm 22
Bladder filled	57 \pm 28	45 \pm 24	36 \pm 18

Final diagnosis: Detrusor overactivity was the main diagnosis increasing significantly in C: 68/135 (50%) vs 32/135 (23%) (A) and 35/135 (23%) (B) $p < .001$ whatever the neurological status or previous pelvic surgery.

Detrusor hypocontractility (impaired detrusor contraction leading to prolonged voiding time and high residual volume) was predominant in the oldest group 35/157 (22%) vs 12/137 (.7%) (A) and 16/155 (10%) (B).

Only sphincter incompetence was predominant in B 56/155 (36%) vs A 34/137 (25%) and C 38/157 (24%).

Normal urodynamic testing was found in 19% (A) (26/137) and 12% (B&C) (respectively 19/155 and 19/157).

Interpretation of results

Urinary incontinence (UI) is the main motive for urodynamics in that post menopausal population. Mixed UI increases with aging, probably due to the association of a decreased urethral sphincter function and occurrence of detrusor overactivity. Achievement of interpretable tests underlines the role of an "uncosy" environment. The MUCP decrease with age is consistent with previous studies but the decrease observed between bladder empty and bladder filled demonstrates the lack of adaptation of the sphincter to bladder filling which could be the consequence of an impaired pelvic floor. Detrusor overactivity is the main final diagnosis, increasing with aging regardless of an history of neurological disease or of previous pelvic surgery. In addition, DO with impaired detrusor contractility increases also with aging and is an important cause of UI with high residual volume. The oldest old population (C) is distinguished

by the high occurrence of DO and sphincter incompetence while the sub-groups (A) and (B) exhibit the same percentage of each condition.

Concluding message

In that population of postmenopausal females the lack of adaptation of the sphincter to bladder filling could explain the complaint of incontinence; the role of ageing clearly appears from the increasing of complaint of urgency and occurrence of both detrusor overactivity and detrusor hypocontractility in the oldest group. Further studies have to search for a better understanding of the neural control of micturition in ageing women.

<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 involved retrospective analysis of urodynamic studies from a database.
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	No