

## PERIMENOPAUSAL CONTINENT WOMEN COULD REVEAL LOWER URINARY TRACT SYMPTOMS BY MEANS OF A SIMPLE TOOL LIKE THE BLADDER DIARY

### Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) are commonly reported in women and their increase in prevalence is significantly observed after the menopause. It is known that perimenopausal transition could be associated with genitourinary anatomical changes due to ovarian hormonal impaired production. Bladder diary (3-day frequency-volume chart) could be a simple tool able to investigate the pattern of bladder voiding in women. The aim of our study was to investigate LUTS in continent perimenopausal women in order to suggest programs of preventive pelvic floor muscle training.

### Study design, materials and methods

We selected 74 women aged 45 to 55 years who were referred to the general practitioner for symptoms non-involving sexual, urinary and gynaecological conditions. Exclusion criteria were: previous vertebral bones fractures or significant arthritis; neurological and psychiatric diseases (MMSE<24); urological, gynaecological, and anorectal disorders (including urinary or faecal incontinence, obstructed defecation syndrome, pelvic organ prolapse, previous caesarean section and pelvic surgery); fever or suspicion of infection; hormonal replacement therapy. Every woman was accurately instructed to fill out the bladder diary for 3 consecutive days.

### Results

All women involved in the study gave back the bladder diary. Nine women were excluded from the study: 5 women because the diary revealed urinary incontinence previously unknown and 4 women because the diary was incomplete and/or not correctly done. The mean age of 65 eligible women included in the study was 50.5 years, the mean body mass index (BMI) was 24.33, and the mean number of vaginal deliveries was 1.3 (range 0-4).

Table 1 - Urinary frequency, total volume of urine/24h, average voided volume of micturitions and urgency episodes as mean values of the 3-day bladder diary

	Mean (SD)	Range	Median (percentile value: 5-95)
Daytime urinary frequency	7.01 (1.95)	4-12	6.67 (4.33-10.33)
Daytime total urinary voided volume	1607.64 (632.52)	643.3-3880	1533.33 (844.66-2798)
Average voided volume	253.48 (78.44)	106.61-410	230.55 (118.71-374.09)

Table 2 - Urinary daytime frequency

Frequency	Subjects	%
<7 micturition/24 h	38	58%
≥8 micturition/24h	27	42%

Table 3 - Total voided volume/24h

Total voided volume	Subjects	%
500-2800 mL	60	92%
>2800 mL	5	8%

Table 4 - Urgency episodes/24 h

Urgency episodes	Subjects	%
0	28	43%
1 (not in each day of the diary)	13	20%
1 (in every day of the diary)	4	6%
> 1	20	31%

Table 5 - Relationships between frequency and voided volume

	Urinary frequency/24h	
	<7	≥8
Voided volume 500-2800 mL	38 (58%)	22 (34%)
Voided volume >2800 mL	0 (0%)	5 (8%)

Table 6 - Relationship between daytime urinary frequency and urgency

	Urgency			
	0 episodes	1 (not every day)	1 (Every day)	>1
Frequency <7	19 (29%)	9 (14%)	3 (4%)	7 (11%)
Frequency ≥8	9 (14%)	4 (6%)	1 (2%)	13 (20%)

Table 7 - Relationships between voided volume and urgency

	Urgency			
	0 episodes	1 (not every day)	1 (every day)	More than 1 episodes/24h
Voided volume 500-2800 mL	28 (43%)	12 (18%)	4 (6%)	16 (25%)
Voided volume >2800 mL	0 (0%)	1 (2%)	0 (0%)	4 (6%)

Interpretation of results

The results of our study showed that only 29% of women did not report LUTS at the bladder diary and in this group the urinary daytime frequency and the voided volume/24h are considered in the normal range. On the other hand, the 71% of the women reported one or more LUTS. Interestingly, 8% of women of this group showed all symptoms that might be related to early or mild dry overactive bladder (OAB).

Concluding message

While urinary incontinence is used to be the leading symptom complained by women referred to an urogynecological unit, other LUTS could interestingly be revealed with the bladder diary in perimenopausal women without urinary incontinence. We think that early interception of LUTS could represent a new method of screening in perimenopausal asymptomatic women. Bladder diary could be an interesting tool to assess voiding habits not only in symptomatic women but also in perimenopausal women without OAB and urinary incontinence. Perimenopause could be a strategic phase of women lifetime in which we might be able to identify subjects with initial LUTS. Furthermore, an early approach in these women by means of simple lifestyle interventions and pelvic floor muscle training is aimed to counteract a possible initial phase of the OAB syndrome and urinary incontinence.

Disclosures

**Funding:** NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** Study subjects are asymptomatic patients referring to general practitioners and the study design was conceived of a pilot study not interfering with clinical management of women. **Helsinki:** Yes **Informed Consent:** Yes