

## AGE-RELATED DIFFERENCES OF BLADDER SENSATIONS IN OAB PATIENTS

### Hypothesis / aims of study

The incidence of Overactive bladder syndrome (OAB) increases with increasing age. There are several hypotheses of the causes of the increasing incidence of OAB in the elderly. It has been suggested that degenerative changes of the neurological control system of the bladder of healthy individuals occur during aging [1]. In addition, urodynamic changes have been proven to occur during aging [2]. The aim of the current study is to examine differences in perceived bladder sensations in elderly OAB patients compared to younger OAB patients in everyday life, using sensation-related bladder diaries (SR-BDs).

### Study design, materials and methods

In this prospective, longitudinal study, patients with idiopathic OAB were recruited at our outpatient clinic. The diagnosis was made by a urologist, using the ICS criteria for OAB ( $\geq 8$  micturitions and  $\geq 1$  urgency episode per 24 hours). All subjects filled in sensation-related bladder diaries (SR-BD), internet based, for 6 days. In the SR-BD, perceived bladder sensations including the degree of urge (0-3) and bladder fullness are recorded. In order to prevent pharmacological influences on the results, anticholinergic medication was stopped 21 days prior to the start of the study. Urinary tract infection and a post-void residual urine volume of  $\geq 100$  ml were exclusion criteria.

We stratified patients into 2 age groups: patients  $< 60$  years old and patients  $\geq 60$  years old. The normality was tested with a Shapiro-Wilk test and therefore a Mann-Whitney U test to examine differences between both age groups. A repeated measurements MANOVA was used to test if there were any differences in measurements between urgency categories. An independent T-test was used to compare mean values.

### Results

In total 68 patients were included, 27 patients were  $< 60$  years old and 41 patients were  $\geq 60$  years old. In total, 3673 voids were assessed. Older patients voided with higher mean voiding volumes (200 vs. 182 ml/void;  $p=0.034$ ) than younger patients with a lower mean urinary frequency per litre diuresis (5.3 vs. 6.4/L;  $p=0.034$ ). The mean bladder fullness sensation per volume was significantly lower for older patients (38.7 vs. 50.9%/100ml;  $p=0.016$ ). The mean degree of urge per voided volume was not different between the two groups (1.3 vs. 1.5/100ml;  $p=0.352$ ). The MANOVA showed for both older and younger patients, separately, a significant difference (difference of all comparisons between urge/urgency categories  $p<0.001$ ) between urge/urgency groups for mean bladder fullness sensation and mean voided volume. For both groups, a linear correlation was found between the degree of urge (0, 1, 2 or 3) and mean bladder fullness sensation or mean voided volume.

### Interpretation of results

We found that elderly OAB patients void with larger volumes and lower perceived bladder fullness compared to younger patients at the same degree of urge. Hence, bladder sensations appear to be reduced in older OAB patients. Further investigations are needed to confirm our results.

### Concluding message

There is an age-related effect on bladder sensations in OAB patients, with reduced sensations in older patients.

### References

1. Yoshida M. Perspectives on overactive bladder in the elderly population. *World J Urol* (2009) 27:729–737.
2. Madersbacher S, Pycha A, Schatzl G, et al. The aging lower urinary tract: a comparative urodynamic study of men and women. *Urology* (1998);51:206–12.

### Disclosures

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