

Soler R<sup>1</sup>, Gomes C<sup>2</sup>, Averbeck M<sup>3</sup>, Koyama M<sup>4</sup>

1. *Astellas Pharma Brazil, Avenida Nações Unidas 14171 – 4 andar, São Paulo, Brazil*, 2. *University of São Paulo School of Medicine, Avenida Dr. Eneas de Carvalho Aguiar, 255, Sala 710F, 7º. Andar, CEP 05403-000 São Paulo – SP, Brazil*, 3. *Urology Department, Moinhos de Vento Hospital, Video Urodynamics Unit, Rua Tiradentes, 333, Porto Alegre, RS, 90560-030, Brazil*, 4. *Kamiyama Statistical Consulting, Avenida Dr. Altino Arantes, 975 casa 4, CEP 04042-034, São Paulo – SP, Brazil*

## PREVALENCE OF LUTS IN BRAZIL: AN EPIDEMIOLOGICAL STUDY

### Hypothesis / aims of study

We performed the first large population-based study to evaluate lower urinary tract symptoms (LUTS) in Brazil. The study objective was to assess the prevalence and bother of LUTS in the population aged  $\geq 40$  years in five major cities in Brazil.

### Study design, materials and methods

This study was conducted as a telephone survey between 1 September and 31 December 2015. Adults aged  $\geq 40$  years with residential phone lines (landlines) residing in the cities of Sao Paulo, Porto Alegre, Recife, Belem and Goiania were included. All participants provided informed consent. The survey included assessment of LUTS using a standardized protocol, which included the international prostate symptom score (IPSS) and, for overactive bladder (OAB), the OAB-V8 questionnaire. Participants were asked to rate how often they experienced individual LUTS during the past month (Likert scale: none [score 0],  $< 1$  in 5 times [score 1],  $< \text{half}$  the time [score 2], about half the time [score 3],  $> \text{half}$  the time [score 4], or almost always [score 5]). The degree of associated bother was also assessed (Likert scale: not at all [score 0], a little bit [score 1], somewhat [score 2], quite a bit [score 3], a great deal [score 4], a very great deal [score 5]). Two definitions were used for the presence and bother of LUTS: definition 1 (Likert score 2-5), and definition 2 (Likert score 3-5). The association between frequency of symptoms and bother intensity for each LUTS was evaluated using the Spearman's rank correlation coefficient. Chi-squared tests evaluated differences in LUTS prevalence between the sexes and age groups. Both analyses took sample plan into account.

### Results

Overall, there were 5,184 participants: 1,004 from Sao Paulo, 1,002 from Porto Alegre, 1,013 from Recife, 1,004 from Belem and 1,161 from Goiania. Among the total sample, 53% were women; 28% were aged 40–49 years, 34% were 50–59 years old, 21% were 60–69 years old, and 17% were aged  $\geq 70$  years. The most common marital status was “married or living with a partner” (60%), and the most common education level was “complete high school” (26%).

Using definition 1, the prevalence of LUTS (at least one of voiding, storage or post-micturition symptoms) was 69% in men and 82% in women (Figure 1). The corresponding values using definition 2 were 40% and 59%. LUTS prevalence increased with age (definition 1: men,  $p=0.001$ ; women,  $p<0.001$ ). In men and women, definition 1 prevalence was 60% and 75%, respectively, among those aged 40–49 years, compared with 78% and 98% in those aged  $\geq 70$  years. According to the OAB-V8 questionnaire, the prevalence of OAB was similar in women and men (24% and 25%, respectively). In contrast, urinary incontinence (definition 1 prevalence 46% and 15%), urge urinary incontinence (15% and 9%) and stress urinary incontinence (20% and 3%) were all more common in women than men.

Results from the IPSS questionnaire showed that 83% of men and 84% of women had at least mild symptoms. Moderate-to-severe symptoms were present in 21% of men and 24% of women.

Among individuals with each specific symptom, the percentage rating the associated bother as at least “quite a bit” is shown in Figure 2. The most bothersome symptoms among men were urgency with fear of leaking, urgency urinary incontinence and stress urinary incontinence. Over 70% of women reporting eight different symptoms (mostly storage symptoms) considered the associated bother to be at least “quite a bit”. There was a statistically significant association between the frequency and bother intensity of each symptom ( $p<0.001$ ). The correlation coefficients for these relationships ranged from 0.504 (nocturia in men) to 0.984 (leak during sexual activity in women).

Figure 1. Prevalence of International Continence Society-defined lower urinary tract symptoms (LUTS) subtypes (voiding [V], storage [S], post-micturition [PM], and combinations); definition 1 (Likert score 2-5) (A) and definition 2 (Likert score 3-5) (B).

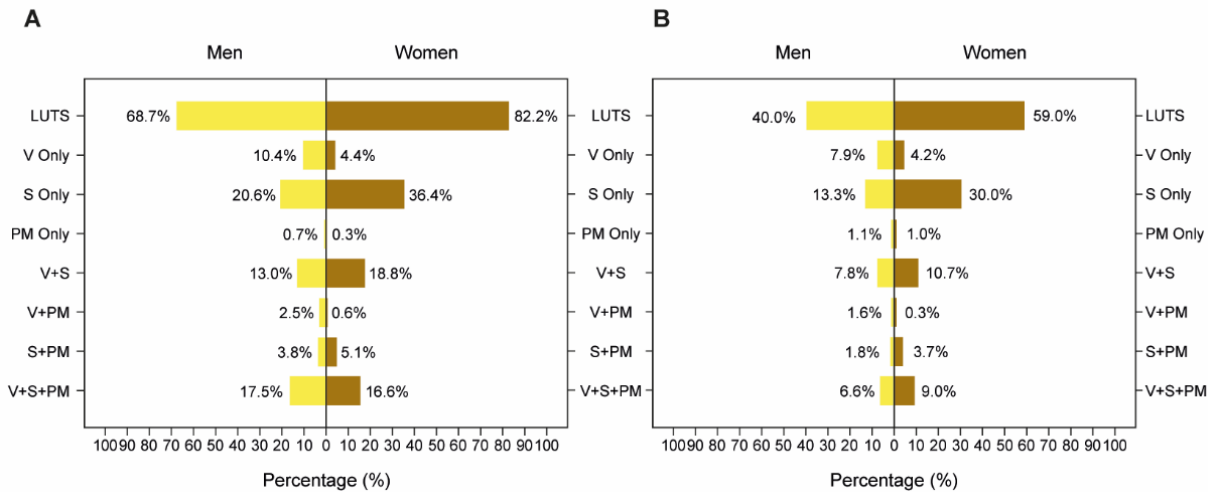
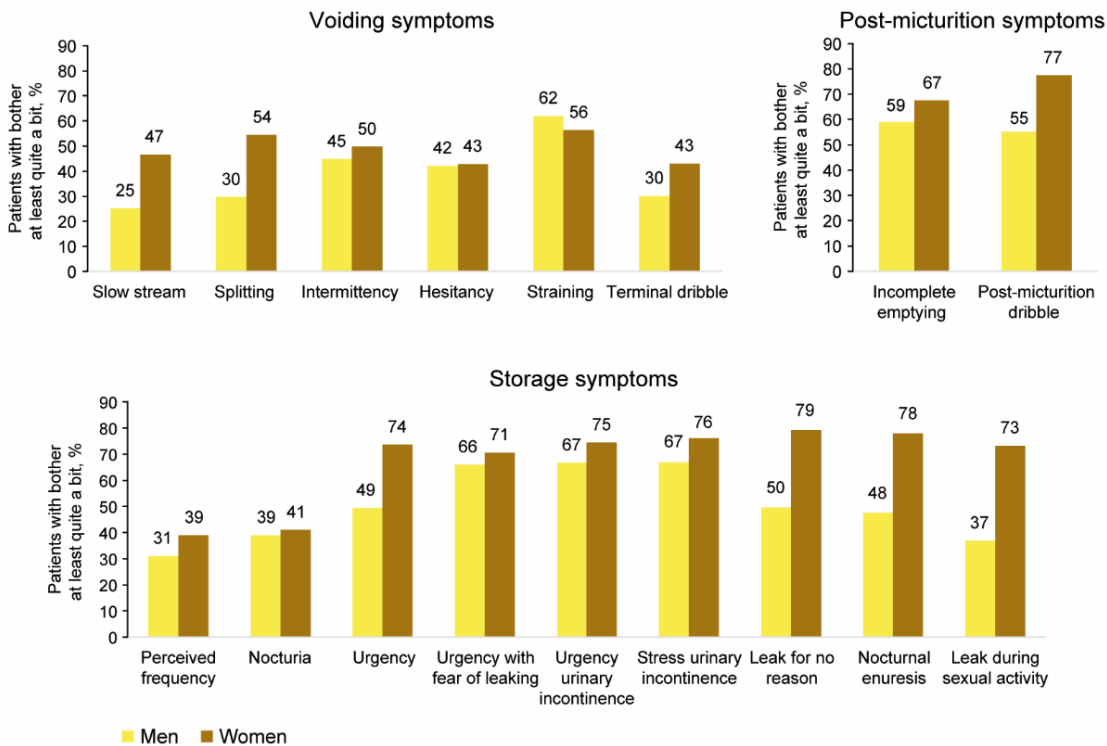


Figure 2. Prevalence of bother at least “quite a bit” associated with specific symptoms.



### Interpretation of results

This study indicates that 75% of the population aged  $\geq 40$  years in Brazil have LUTS, that symptoms are commonly bothersome, and that many individuals have multiple symptoms. Moreover, 84% of the population aged  $\geq 40$  years in Brazil have at least mild symptoms according to IPSS. These findings are consistent with results from other populations (e.g. Europe, North America).

### Concluding message

The first population-based epidemiological study of LUTS in Brazil demonstrated that these symptoms are highly prevalent and associated with substantial bother. Comprehensive assessment of LUTS and their effects may help ensure appropriate diagnosis and treatment in the general population.

### Disclosures

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