

## A COMMUNITY SURVEY OF LOWER URINARY TRACT SYMPTOMS AND POSTVOID RESIDUAL AMONG MALE AGED 40 AND OLDER--ARE SELF-REPORTED SYMPTOMS RELIABLE INDICES FOR PATIENT EDUCATION?

### Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) are categorized as storage (urgency, frequency, nocturia and incontinence), voiding (sensation of incomplete emptying, hesitancy, weak stream and straining) or mixed symptoms. Although many epidemiology studies were done to reveal the prevalence rate of LUTS, little study include both questionnaire and objective measurements in the community setting. In this study, we investigated the prevalence of male LUTS and the associations between LUTS and post-void residuals as measured by bladder ultrasound

### Study design, materials and methods

A total of 613 eligible subjects were recruited from the community-based integrated screening program held in Hualien County in Taiwan. All subjects underwent a battery of questionnaires aimed to investigate subjects' LUTS and self-management behavior. Demographic (age, body mass index - BMI, education, smoking, alcohol and exercise habits), past/ present medical history, were used for patient assessment. The International Prostate Symptom Score (IPSS) was administered for the assessment of LUTS. Self-management behavior includes fluid intakes, exercise and diets. After finished questionnaire, subjects were asked to empty their bladder for urine sample and check for post-void residuals. Post-void residuals were measured by bladder BVI 3000. Results were expressed as mean  $\pm$  standard deviation and statistical analysis. Pearson's product-moment correlation coefficient for estimating the association of LUTS and post-void residuals.

### Results

584 (95.1%) subjects were included in the results analysis. Their mean age was 64.5 $\pm$ 12.5 years. Average BMI was 24.85, with 27.2% overweight and 27.9% obese. The overall prevalence of storage (13%) and mixed (9%) symptoms were higher than that of voiding symptoms (11.1%). Mean score for the symptoms (S) subscale of IPSS was 2.6  $\pm$  3.3. The prevalence of storage symptoms was similar across age groups, whereas voiding and mixed symptoms increased with age. Among voiding symptoms, nocturia was the most prevalent symptoms (47.1%), followed by postvoid dripping (33.2%), urgency (26.6%) and frequency (23.7%). In related to postvoid residuals, 47 (7.8%) subjects obtained postvoid residuals more than 100cc, with limited awareness of LUTS. Finally, there was no significant correlation between IPSS score and post-void residuals volume.

### Interpretation of results

Nocturia was the most prevalent voiding symptom, following by postvoid dripping, urgency and frequency. Reported prevalence rates were higher than other published study, due to advancing age among this sample. Nocturia was the most prevalent LUTS in this study. This result is in accordance with previous LUTS surveys in Europe and Japan<sup>1,2</sup>. Yu et al<sup>3</sup> also reported a high prevalence rate of nocturia in Taiwanese people. However, poor association were found between post-void residual and LUTS. Hence, subjects with high post-void residual may have poor perception of LUTS. This raised a caution of proper patient education in the community if only based on subject self-reported symptoms.

### Concluding message

Careful attention to individual symptoms may help distinguish different types of male voiding dysfunction. With objective measurement and careful evaluation of LUTS, community nurses may prevent further urinary tract disorder and promoting bladder health.

### References

1. Irwin DE, Milson I, Hunskaar S, et al. Population-based survey of urinary incontinence, overactive bladder, and other lower urinary tract symptoms in five countries: results of the EPIC study. *Eur Urol* 2006;50:1306–14
2. Homma Y, Yamaguchi O, Hayashi K; Neurogenic Bladder Society Committee. Epidemiologic survey of lower urinary tract symptoms in Japan. *Urology* 2006;68:560–4
3. Yu HJ, Chen TH, Chie WC, et al. Prevalence and associated factors of nocturia among adult residents of the Matsu area of Taiwan. *J Formos Med Assoc* 2005;104:444–7

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| <b>Is this a clinical trial?</b>                                      | Yes   |
| <b>Is this study registered in a public clinical trials registry?</b> | No  |
| <b>What were the subjects in the study?</b>                           | HUMAN   |
| <b>Was this study approved by an ethics committee?</b>                | Yes   |
| <b>Specify Name of Ethics Committee</b>                               | Tzu-Chi College of Technology                                 |
| <b>Was the Declaration of Helsinki followed?</b>                      | Yes   |
| <b>Was informed consent obtained from the patients?</b>               | Yes   |