

NATURAL HISTORY OF BLADDER FUNCTION: LOWER URINARY TRACT SYMPTOMS IN JAPANESE MEN AND WOMEN WITHOUT LOWER URINARY TRACT DISORDERS.

Aims of Study

In both men and women, profound structural and functional alterations in the lower urinary tract occur in association with aging, and this may be responsible for the development of lower urinary tract symptoms (LUTS) in elderly. Most of studies on LUTS in community- or hospital-based population indicate that an increase of LUTS with age is not gender specific, but whether the prevalence of LUTS differs between men and women is controversial. Pathological conditions underlying LUTS are dissimilar in men and women. Nevertheless, the bladder function seems to exhibit common age-related alterations in both sexes. The purpose of this study is to examine the influence of aging on bladder function in men and women. For examining the natural history of bladder function, it is essential to exclude the influence of pathological conditions relevant to micturition disorder, such as benign prostatic hyperplasia, stress incontinence and neurogenic bladder.

Methods

Using International Prostate Symptom Score (I-PSS) questionnaire with an additional question on urinary incontinence, LUTS were examined in all outpatients of 40 or more years old who made a first visit to our department from June 2001 to December 2002. Urinary incontinence was scored from 0 to 3: 0 (not at all); 1 (wet underwear); 2 (wet clothes); 3 (a large amount). Medical history including neurological disorders and a history of surgery was carefully taken. In addition, exclusion criteria were concurrent urinary tract infection, psychological diseases and medication with drugs that may possibly affect urinary function. In 550 of 1201 patients who completed I-PSS, any pathological condition that might cause micturition disorder could not be detected by urological examinations. The sampled patients included 305 males and 245 females, ranging from 40 to 92 years in age. Urological diagnoses of these patients included microscopic hematuria in 117, no pathological findings in 98, upper urinary tract stone in 82 and so on. We classified these patients into five age groups, 40-49, 50-59, 60-69, 70-79 and 80 or more. Statistical analysis was made using one-way analysis of variance.

Results

The percentage of the three severity categories of LUTS showed a significant age-related trend in both sexes. The ratios of patients with moderate to severe urinary symptoms in five age groups were 30, 38, 44, 52 and 58 % in men, and 24, 24, 39, 45 and 50 % in women. The total symptom score increased with age in both men ($p = 0.004$) and women ($p = 0.03$), and did not differ significantly between both sexes within each age group. For both men and women, a significant increase with age was found in the storage symptom score ($p < 0.0001$ for men; $p = 0.02$ for women), but not in the voiding symptom score ($p = 0.37$ for men; $p = 0.13$ for women). Within each age group, the storage and voiding symptom scores were not significantly different between men and women. The prevalence of urinary incontinence in both sexes tended to increase with age, but this tendency was significant only in men ($p = 0.007$), but not in women ($p = 0.36$). The prevalence of urinary incontinence in women (40 %) was about 1.7 times as high as that in men (24 %). There was a significant difference in incontinence score between men and women in 50-59 ($p = 0.01$) and 60-69 ($p = 0.007$) age groups, whereas the difference was not significant in other age groups.

Conclusions

This study was addressed to examine the lower urinary tract symptoms in the subjects who lacked any pathological signs responsible for micturition disorder. In both men and women, the total and storage symptom scores, but did not the voiding symptom score, increased in an age-dependent manner. Thus, LUTS appear to be developed in association with aging, due

to some alterations in the storage function. The structural and functional changes in the aging bladder may lead to detrusor instability and/or a decrease of bladder capacity or compliance, regardless of sex. The result also suggested that the age-related increase of voiding symptoms previously reported may be due to the increasing prevalence of bladder outlet obstruction with age, rather than to alterations of bladder contractility. The total, storage or voiding symptom score observed in the present study was not significantly different between men and women in a given age group. This implies that the age-related alterations of bladder function are not gender specific. Among young age groups, the prevalence of incontinence was significantly higher in women than in men. The incontinence score significantly increased with age in men, but not in women. As a result, the difference in incontinence score between men and women disappeared in old age groups. This characteristic is similar to that of detrusor instability demonstrated by urodynamic testing (1). It is likely that the prevalence of urinary incontinence in our study may reflect that of urge urinary incontinence.

Reference

(1) Urology 51: 206-212, 1998.