

RELATIONSHIP BETWEEN LIFESTYLE DISEASES AND THE FREQUENCY OF MEDICAL THERAPIES FOR LOWER URINARY TRACT SYMPTOMS: ANALYSIS OF 60,000 AGING MALES AND FEMALES

Hypothesis / aims of study

Because lifestyle factors and comorbidities can influence lower urinary tract symptoms (LUTS) by gender and aging, we investigated the associations between lifestyle diseases and the frequency of medical therapies for LUTS in a large series of patients.

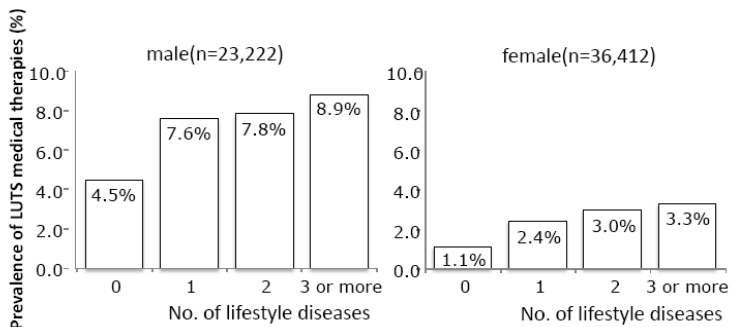
Study design, materials and methods

We obtained the data of 2-day to 7-day prescription monitoring by general physicians from the IMS Japan Health data set during the 12-month period ending in December 2012. We limited our data set to patients ≥ 65 yrs old (males and females) with/without one or more lifestyle diseases (i.e., hypertension, dyslipidemia, diabetes, cerebrovascular disease, and cardiovascular disease). Patients prescribed the daily use of one or more medications classified as an $\alpha 1$ -blocker, a 5-alpha reductase inhibitor (5-ARI), or antimuscarinic drug were defined as LUTS patients. A Cochran-Armitage or multivariate logistic regression method was used for the statistical analyses.

Results

The data of a total of 23,222 males (75.8 ± 6.9 yrs) and 36,412 females (77.3 ± 7.4 yrs) were examined. The rates of lifestyle diseases in this population were as follows: hypertension, 42%; dyslipidemia, 20%; diabetes, 9%; and cerebro- or cardiovascular disease, 10%. The percentages of patients receiving LUTS medical therapies were 6% for the males and 4% for the females. The prevalence of LUTS medical therapies among the patients with lifestyle diseases ($n=31,748$ patients) was significantly higher than that among the patients without lifestyle diseases ($n=27,886$), and it increased with the increase in the number of lifestyle diseases (figure). Hypertension was independently associated with an increased risk of LUTS medical therapy in both the males and females (OR=1.41 and 2.17, respectively; $p < 0.0001$). Dyslipidemia was also an independent risk factor in both the males and females (OR=1.40 and 1.35, respectively; $p < 0.001$). In the patients without lifestyle diseases, the prevalence of LUTS medical therapies did not increase with age.

Fig. Prevalence of LUTS medical therapies among the patients with or without lifestyle diseases



Interpretation of results

Increasing evidence has pointed to a relationship between lower urinary tract symptoms (LUTS) and the presence of metabolic syndrome (MetS). This relationship has been supported by recent epidemiologic findings [1, 2]. In Japan, however, the relationship between LUTS and the presence of MetS is open to question. In one Japanese study, MetS was shown to have a significant negative association with the total overactive bladder symptom score (OABSS) [3]. There is a possibility that the negative relationship is due to racial differences, and the decrease in obesity with age in Asia. The prevalence of extreme obesity (BMI > 30) is markedly lower in Asia than in US and Europe. Even if the prevalence of obesity is relatively low in Japan, those of lifestyle-related diseases are as high as in US and Europe. Lifestyle diseases are likely to influence to the development of LUTS and normal aging might not have a major influence on it.

Concluding message

The results indicate that lifestyle diseases play an important role in the development of LUTS in both genders.

References

1. Rohrmann S, Smit E, Giovannucci E, Platz EA. Association between markers of the metabolic syndrome and lower urinary tract symptoms in the Third National Health and Nutrition Examination Survey (NHANES III). *Int J Obes (Lond)* 29: 310-316, 2005.
2. Kupelian V, McVary KT, Kaplan SA, Hall SA, Link CL, Aiyer LP, Mollon P, Tamimi N, Rosen RC, McKinlay JB. Association of lower urinary tract symptoms and the metabolic syndrome: results from the Boston Area Community Health Survey. *J Urol* 182: 616-624, 2009.

- Ohgaki K, Horiuchi K, Kondo Y. Association between metabolic syndrome and male overactive bladder in a Japanese population based on three different sets of criteria for metabolic syndrome and the Overactive Bladder Symptom Score. *Urology* 79: 1372-1378, 2012.

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** this study aggregated data from an anonymity databases, and our institutional review board decided that the approval was not needed. **Helsinki:** Yes **Informed Consent:** Yes