

RISK FACTORS OF DETERIORATION OF LOWER URINARY TRACT SYMPTOMS IN ELDERLY MEN - COMMUNITY-BASED, PROSPECTIVE LONGITUDINAL COHORT STUDY

Hypothesis / aims of study

To evaluate risk factors of deterioration of lower urinary tract symptoms in elderly men by a community-based, prospective longitudinal cohort study.

Study design, materials and methods

In a suburban area in Korea, 1514 subjects aged ≥ 45 years were randomly selected by systematic sampling. A total of 918 elderly subjects were enrolled in this in-depth clinical study in 2004. Of these, 547 participants were followed-up for 3 years. Standard questionnaires were administered face-to-face by trained interviewers. After excluding females, 224 male participants with complete data, including transrectal ultrasonography, were included in the final analysis. Lower urinary tract symptoms were diagnosed using the International Prostate Symptom Score defined as ≥ 8 points at baseline. Symptom deterioration was defined as >8 points during 3 years.

Results

Symptom prevalence increased to 13.1%, and the mean International Prostate Symptom Score increased by 2.6 points during 3 years. After adjusting for confounders, smoking history of ≥ 50 pack-years was an independent risk factor for symptom deterioration and storage sub-symptoms, compared with non-smokers (3.1 and 5.1 odds, respectively). Physical activity had a protective effect for voiding sub-symptoms. High daily protein intake exacerbated the storage symptoms. However, alcohol intake was not associated with symptom deterioration.

Interpretation of results

To our knowledge, there have been a few study that investigated the risk factors of deterioration of LUTS in longitudinal single cohort study. In our community-based, prospective longitudinal cohort study, smoking, physical activity and protein intake were strongly associated with LUTS deterioration.

Concluding message

The symptom prevalence among elderly men living in a suburban area increased to 13.1%, and the International Prostate Symptom Score increased by 2.6 points during 3 years. Smoking history, physical activity, and protein intake were associated with symptom deterioration. However, there was no significant association with alcohol intake and symptom deterioration.

Table 1. Changes of IPSS according to the MS with aging

A. Storage IPSS			
	2004	2007	p-value*
MS (-)	4.22 \pm 4.02	5.51 \pm 3.86	0.023
MS (+)	4.20 \pm 3.85	5.49 \pm 4.01	0.010
p-value [†]	0.984		
B. Voiding IPSS			
	2004	2007	p-value*
MS (-)	6.93 \pm 6.33	7.65 \pm 6.00	0.412
MS (+)	6.19 \pm 6.13	7.90 \pm 5.62	0.022
p-value [†]	0.250		
C. Total IPSS			
	2004	2007	p-value*
MS (-)	11.15 \pm 9.34	13.16 \pm 9.33	0.133
MS (+)	10.39 \pm 8.54	13.4 \pm 8.98	0.007
p-value [†]	0.402		

*: 2004 versus 2007 IPSS in each group (paired t-test)

†: 2004 versus 2007 IPSS between MS (-) and MS (+) (2-way ANOVA test)

Table 2. Multivariate logistic regression analysis of risk factors associated with LUTS

		Moderate to severe LUTS age-adjusted Odds ratio (95% confidence interval)	p-value	Moderate to severe LUTS Odds ratio (95% confidence interval)	p-value
	No	1		1	
MS	Yes	1.005 (0.635-1.589)	0.913	1.094 (0.634-1.886)	0.748
Age	-			1.066 (1.023-1.111)	0.003
IIEF-5		0.960 (0.929-0.992)	0.014	0.956 (0.924-0.989)	0.010
Smoking		1.002 (0.999-1.004)	0.150	1.001 (0.999-1.004)	0.264
Alcohol intake		1.000 (0.998-1.002)	0.994	1.000 (0.998-1.001)	0.774
No regular exercise		1.116 (0.649-1.918)	0.691	1.331 (0.717-2.471)	0.364
Total cholesterol		0.997 (0.990-1.004)	0.304	0.997 (0.989-1.005)	0.471

Disclosures

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Informed Consent: Yes