32

Kim T H[1], Han D H[1], Lee H M[1], Choi H Y[1], Lee K[1]
1. *Samsung Medical Center, Sungkyunkwan University School of Medicine*

THE PREVALENCE AND IMPACT ON HEALTH-RELATED QUALITY OF LOWER URINARY TRACT SYMPTOMS IN KOREAN MEN AGED 40 YEARS OR OLDER: A POPULATION-BASED SURVEY

Hypothesis / aims of study
The aim of our study was to examine the population-based prevalence of lower urinary tract symptoms (LUTS) among men aged ≥ 40 years in Korea. We also evaluated the impact of LUTS on health-related quality of life (HRQoL) in a population sample.

Study design, materials and methods
A population-based, cross-sectional door-to-door survey was conducted on a geographically stratified random sample of men aged ≥ 40 years in Korea. Interviews were conducted using questionnaire which originally developed for the EPIC study [1,2] and had been used in Korean EPIC study [3]. All respondents were asked about the presence of individual LUTS using 2002 International Continence Society definitions, and symptom bother items from the International Prostate Symptom Score (IPSS). For comparison, we also defined nocturia as two or more nocturnal micturitions per night. A case-control analysis was performed to assess the impact of LUTS on HRQoL. Cases were individuals with at least one LUTS and controls were individuals without LUTS within the cohort age category. Both cases and controls were asked questions about generic QoL (the EuroQoL-five-dimensions, EQ-5D), work productivity (the Work Productivity and Activity Impairment questionnaire, WAPI), depressive symptoms (the Center for Epidemiological Studies Depression Scale, CES-D), and sexuality QoL (sexual health questionnaire).

Results
The responses from 1842 subjects were analyzed. The overall prevalence of LUTS was 83.4% and storage LUTS (70.1%) was more prevalent than voiding (60.4%) or post-micturition LUTS (38.3%). When using the definition of nocturia as two or more nocturnal micturition per night, voiding symptoms became most prevalent (storage: 39.7%, voiding: 60.4%, post-micturition: 38.3%) (Table1). On the IPSS, 72.6% reported the severity of their urinary symptoms as moderate (IPSS 8-19), 20.9% severe (IPSS 20-35), and 6.5% as none or mild (IPSS 0-7). Of 1842 respondents, 1536 (83.4%) LUTS cases reported significantly lower level of overall health and work productivity, higher level of major depressive symptoms, and worse sexual health compared with 306 (16.6%) controls (Table2).

Interpretation of results
The overall prevalence of LUTS on Korean men aged ≥ 40 years was 83.4% and the prevalence of LUTS increased with age (Table1). More than 90% of our population described the severity of their urinary symptoms as moderate or severe on IPSS. Our study have illustrated that LUTS were associated with worse HRQoL.

Concluding message
LUTS are highly prevalent among Korean middle-aged men and have a substantial impact on the many aspects of quality of life including work productivity, mood, and sexual life.

Table 1. Prevalence of LUTS by age

	40-49 years	50-59 year	≥ 60 years	Total
	N (%)	N (%)	N (%)	N (%)
ST or VD or PM (nocturia ≥1)	588 (78.3)	516 (84.7)	432 (89.6)	1536 (83.4)
ST or VD or PM (nocturia ≥2)	483 (64.3)	415 (68.1)	363 (75.3)	1261 (68.5)
ST only (nocturia ≥1)	473 (63.0)	426 (70.0)	393 (81.5)	1292 (70.1)
ST only (nocturia ≥2)	251 (33.4)	230 (37.8)	251 (52.1)	732 (39.7)
VD only	425 (56.6)	367 (60.3)	320 (66.4)	1112 (60.4)
PM only	270 (36.0)	233 (38.3)	202 (41.9)	705 (38.3)
ST + VD (nocturia ≥1)	317 (42.2)	283 (46.5)	284 (58.9)	884 (48.0)
ST + VD (nocturia ≥2)	210 (28.0)	194 (31.9)	215 (44.6)	619 (33.6)
ST + PM (nocturia ≥1)	217 (28.9)	196 (32.2)	183 (38.0)	596 (32.4)
ST + PM (nocturia ≥2)	157 (20.9)	145 (23.8)	150 (31.1)	452 (24.5)
VD + PM	244 (32.5)	216 (35.5)	189 (39.2)	649 (35.2)
ST + VD + PM (nocturia ≥1)	198 (26.4)	185 (30.4)	173 (35.9)	556 (30.2)
ST + VD + PM (nocturia ≥2)	148 (19.7)	140 (23.0)	144 (29.9)	432 (23.5)

LUTS = lower urinary tract symptoms; ST = storage symptom; VD = voiding symptom; PM = post-micturition symptom

Table 2.Participants-reported outcomes

Variable (n, sample)	Cases	Controls	*p* Value
Mean (SD) EQ-5D index score (1842)	0.89 (0.16)	0.95 (0.10)	< 0.001
Mean (SD) EQ-VAS score (1842)	74.9 (18.8)	78.0 (21.9)	< 0.001
Mean (SD) WPAI			
% work time missed due to health (995)	1.4 (5.3)	0.6 (4.2)	0.004
% impairment while working due to health (1231)	14.5 (26.6)	9.3 (23.7)	< 0.001
% overall work impairment due to health (972)	14.1 (26.0)	8.3 (22.5)	< 0.001
% activity impairment due to health (1667)	15.9 (25.4)	9.5 (22.7)	< 0.001
Any work impairment (1036), n (%)	326 (39.2)	50 (24.5)	< 0.001
CES-D scale ≥ 21 (1842), n (%)	177 (11.5)	9 (2.9)	< 0.001
Currently sexually active (1835), n (%)	837 (54.6)	206 (68.0)	< 0.001
Decreased sexual activity (1835), n (%)			
'Somewhat' to 'A great deal'	727 (47.5)	55 (18.2)	< 0.001
Decreased enjoyment of sexual activity (1043), n (%)			
'Somewhat' to 'A great deal'	334 (39.9)	30 (14.6)	< 0.001
Erectile dysfunction (1043), n (%)			
'Moderately impotent' to 'Completely impotent'	75 (9.0)	2 (1.0)	< 0.001

EQ-5D = the EuroQoL-five-dimensions; VAS=visual analogue scale; WAPI = work productivity and active impairment; CES-D = center for epidemiological studies depression scale; SD = standard deviation

References

1. Irwin DE, Milsom 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. Coyne KS, Sexton CC, Irwin DE, Kopp ZS, Kelleher CJ, Milsom I. The impact of overactive bladder, incontinence and other lower urinary tract symptoms on quality of life, work productivity, sexuality and emotional well-being in men and women: results from the EPIC study. BJU Int 2008;101:1388-95.
3. Lee YS, Lee KS, Jung JH, et al. Prevalence of overactive bladder, urinary incontinence, and lower urinary tract symptoms: results of Korean EPIC study. World J Urol 2011;29:185-90.

Disclosures

Funding: This study was funded by Korean Urological Association. **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Institutional Review Board of Samsung Medical Center (2010-02-026) **Helsinki:** Yes **Informed Consent:** Yes