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Title: THE PREVALENCE OF OVERACTIVE BLADDER IN KOREA

Aims of Study:

Overactive bladder (OAB) is a disorder that encompasses frequency, urgency and/or urge incontinence. Most epidemiologic studies have focused on urinary incontinence and previous estimates of OAB prevalence vary ranging from 1.2 to 10% in the USA and 12-22% in various European countries. The variation may be due to how overactive bladder is defined. In Asian countries the prevalence studies of OAB are few. We assessed the prevalence of OAB in Korea.

Methods:

We developed OAB screening questionnaire (16 questions) of which reliability and validity tests were performed. A total of 2,005 adults (1,005 women and 1,000 men) among 14,559 participants 40 years or older completed the telephone interview. The study participants were randomly selected with sampling errors within 2.2%. The questionnaire consists of detailed questions concerning frequency, urgency, urge incontinence, nocturia, coping strategy, fluid restriction, impact on quality of life and sexual function, and knowledge about OAB in last 4 weeks. We define OAB as frequency and urgency and/or urge incontinence, and OAB-1 as either singly or in combination of frequency, urgency and urge incontinence. The OAB symptoms were defined as frequency > 8 micturitions/24hours, urgency \geq 2 times/week, urge incontinence \geq 2/week and nocturia \geq 2/night. The statistical analyses were done by the chi square test, Fisher's exact test and Spearman rank correlation.

Results:

The age distribution was: 40-49 years, 25.0%; 50-59 years, 24.9%; 60-69 years, 24.8%; and \geq 70 years, 25.2%. The prevalence of frequency, urgency and urge incontinence were 17.4% (male 17.0%, female 17.7%, $p > 0.05$), 19.1% (male 15.8%, female 22.4%, $p < 0.05$) and 8.2% (male 5.7%, female 10.8%, $p < 0.05$). The prevalence of 3 symptoms increased with age especially high in both male and female \geq 70 years. If urge incontinence is defined as incontinence daily, the prevalence decreased to 3.3%. The prevalence of frequency and urgency simultaneously was 7.1% (male 6.3%, female 7.9%, $p < 0.05$) and increasing with age especially high in male and female \geq 70 years (10.3%, 12.3%). The prevalence of OAB-1 was 30.5% (male 27.0%, female 34.0%, $p < 0.05$). There was a close relationship between OAB and nocturia, 14.1% of respondents with OAB had nocturia but only 3.5% of them without OAB had nocturia ($p < 0.05$). Among respondents who have urge incontinence 48.5% changes underwear and 6.1% uses pads or diapers. The urge incontinence was the most common reason for restricting fluid intake among 3 OAB

symptoms ($r=0.26$, $p<0.01$). 70.7% of respondents with OAB were dissatisfied with their symptoms and only 9.2% with OAB responded that their symptoms affected ability to perform daily tasks,. The sexual life was interfered in 29.3% of respondents who have OAB. The main reasons the respondents with OAB didn't seek treatment were "OAB is an aging process" (36.2%), "it is not a serious problem" (26.2%), "don't know OAB is a treatable disease" (9.2%). By logistic analysis body weight, height and parity were not, but heart disease, hypertension, diabetes mellitus, stroke, spinal cord disease, prostate disease and arthritis were closely related to OAB.

Conclusions:

The prevalence of OAB in Korea was variable according to the definition. In strict criteria it was 7.1% but in broader definition it increased up to 30.5% of general population. The prevalence of OAB was higher in women than in men and increased with advancing age. The symptoms of OAB adversely affected on sexual life and about one third of respondents with OAB were not dissatisfied with their symptoms. Education and information about OAB to the public should be further promoted.

Table 1. The prevalence of overactive bladder symptoms

	Male (%)	Female (%)	Total (%)
Frequency	170/1000 (17.0)	178/1005 (17.7)	348/2005 (17.4)
Urgency	158/1000 (15.8)	225/1005 (22.4)	383/2005 (19.1)
Urge incontinence	57/1000 (5.7)	108/1005 (10.8)	165/2005 (8.2)

Table 2. The prevalence of overactive bladder according to age and sex

Age (Years)	Male (%)		Female (%)		Total (%)	
	OAB	OAB-1	OAB	OAB-1	OAB	OAB-1
40 - 49	12/248(4.8)	51/248(20.6)	14/254(5.5)	79/254(31.1)	26/502(5.2)	130/502(25.9)
50 - 59	12/247(4.8)	61/247(24.7)	18/252(7.1)	68/252(27.0)	30/499(6.0)	129/499(25.9)
60 - 69	13/252(5.2)	65/252(25.8)	16/246(6.5)	94/246(38.2)	29/508(5.7)	159/508(31.3)
70 - 79	19/225 (8.4)	75/225(33.3)	29/232(12.5)	96/232(41.4)	48/457(10.5)	171/457(37.4)
≥ 80	7/28(25.0)	18/28(64.3)	2/21(9.5)	5/21(23.8)	9/49(18.4)	23/49(46.9)
Total	63/1000(6.3)	270/1000(27.0)	79/1005(7.9)	342/1005(34.0)	142/2005(7.1)	612/2005(30.5)

OAB : frequency and urgency simultaneously

OAB-1: either singly or in combination of frequency, urgency and urge incontinence

References:

1. The prevalence of overactive bladder. Presented at the 14th Congress of the European Association of Gynecology and Obstetrics, September 1999, Grenada, Spain.
2. Definition of overactive bladder and epidemiology of urinary incontinence. Urology 50(Supp 6A):4-14, 1997.