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## A SURVEY OF OVERACTIVE BLADDER IN THE MIDDLE-AGED AND OLD PEOPLE IN MAINLAND CHINA

### Hypothesis / aims of study

It has been reported that the prevalence rate of overactive bladder (OAB) was from 3% to 43% [1], and 16.6% in Europeans aged over 40 years [2]. However, the prevalence of OAB of old people in mainland China is still unclear. In present study, 10160 middle-aged and elderly residents who are living in mainland China were investigated randomly by a questionnaire of overactive bladder symptom score (OABSS). Our aim was to evaluate the prevalence, associated risk factors of OAB. The result shows that the prevalence of OAB is much lower in middle-aged compared to elderly residents in mainland China as well as compared to those of western countries.

### Study design, materials and methods

A randomized, community-based, cross-sectional study were performed on 10160 residents aged over 40 years old in urban of mainland China, using a stratified system sampling approach, from June 2010 to February 2011. A questionnaire including age, sex, body weight, height, the OABSS, diabetes mellitus (DM) was filled by the investigator on site. Body weight and height were used to calculate body mass index (BMI). As suggested by the World Health Organization [3], subjects with BMIs of 25–29.9 were classified as overweight, and those with BMIs of 30 or more were classified as obese. The diagnosis of OAB is according to the guideline from ICS and its severity depending on OABSS. OAB<sub>dry</sub> was defined as 'OAB without urgency incontinence', and OAB<sub>wet</sub> as 'OAB with urgency incontinence'. The fasting plasma glucose (FPG) and 2 hours plasma glucose level after giving oral glucose (2hPG) were recorded simultaneously to diagnose DM. Exclusion criteria: 1. Pregnant; 2. Elderly people with poor health conditions, or have difficulty in communication; 3. History of operation on prostate, urethra or bladder; 4. Suffering from nervous system diseases that might affect urinating; 5. History of bladder or prostate tumor and drug administration that might affect urinating.

Chi-square test was used to determine the differences of prevalence between genders, age groups, and people with and without DM. A program of SPSS 16.0 was used for statistical analysis.  $P < 0.05$  was considered to be statistical significant.

### Results

A total of 10160 (57.9±9.7 Y) were investigated and finally 9880 (96.5%) were qualified to enter the final statistical analysis, consisting of 32.1% male (3169) and 67.9% female (6711). Male to female ratio was 1 to 2.1. The overall prevalence of OAB was 2.1% (212/9880), with OAB<sub>dry</sub> 1.0%, and OAB<sub>wet</sub> 1.1%. Male subjects were more likely suffered from OAB than female, with 2.8% (87/3169) vs. 1.9% (125/6711). The prevalence of OAB in both male and female increased with the age ( $P < 0.05$ ) (Figure 1). The prevalence of the subjects with DM is significantly higher than those without DM ( $P < 0.05$ ). The subjects with BMIs of 30 or more are more likely to have OAB (3.1% vs 1.8%,  $P < 0.05$ ). The prevalence of OAB and its related factors were shown in Table 1.

### Interpretation of results

It has been reported that the prevalence rate of overactive bladder gradually increases with age. In present study, we found that the prevalence of OAB in middle-aged and elderly Chinese males and females is much lower than that of western countries. It is probably related to different life styles, racial differences, and geographical differences, and obviously it needs further research.

### Concluding message

In middle-aged and elderly people in mainland China, the prevalence of OAB increases with the age which is much lower than that of western countries, the prevalence of male is higher than female. The diabetics and obese people are more likely to have OAB.

Figure 1. The changing tendency of the total prevalence of OAB and the prevalence of men and women against age.

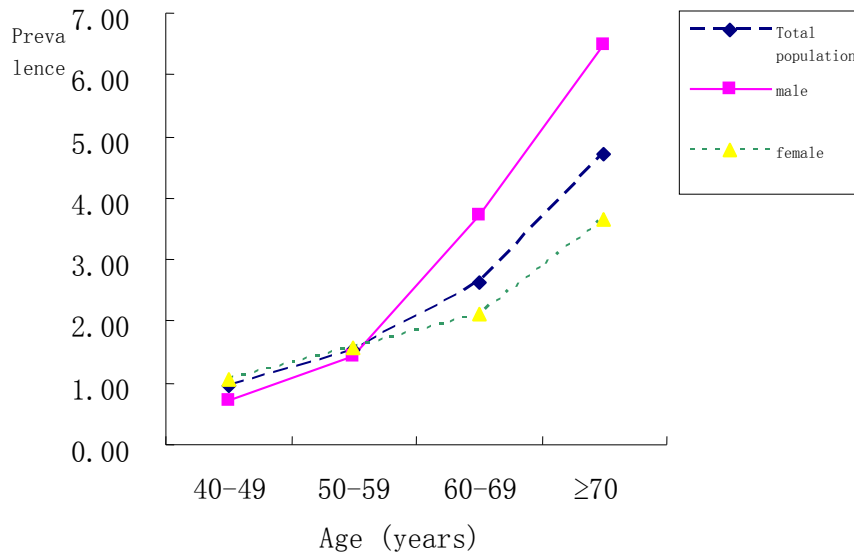


Table 1. The prevalence of OAB and its related factors.

Group	n	Numbers of OAB	Prevalence (%)		P
<b>Gender</b>					
Male	3169	87	2.8	7.988	0.005
Female	6711	125	1.9		
<b>Age(years)</b>					
40-49	2302	22	1	66.524	< 0.001
50-59	3386	52	1.5		
60-69	2881	76	2.6		
≥70	1311	62	4.7		
<b>DM</b>					
Yes	1383	45	3.3	9.403	0.002
No	8497	167	2		
<b>BMI</b>					
BMI<25	4063	74	1.8	7.768	0.021
25≤BMI<30	4456	96	2.2		
BMI≥30	1361	42	3.1		
Total	9880	212	2.1		

#### References

1. Hashim H, Abrams P. Overactive bladder: an update. *Curr Opin Urol*,2007.17(4): 231-236.
2. Milsom I, Abrams P, Cardozo L, Roberts RG, Thüroff J, Wein AJ, et al. How widespread are the symptoms of an overactive bladder and how are they managed? A population-based prevalence study. *BJU Int* 2001, 87(9): 760–766.
3. World Health Organization. Physical status: the use and interpretation of anthropometry. Report of a WHO Expert Committee. (WHO Technical Report Series no. 854). Geneva, Switzerland: World Health Organization, 1995.

#### Disclosures

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