

## EPIDEMIOLOGICAL STUDY OF URGE URINARY INCONTINENCE AND RISK FACTORS IN CHINA

### Hypothesis / aims of study

To evaluate the prevalence and risk factors of urge urinary incontinence (UUI) in Chinese adult women.

### Study design, materials and methods

A cross-sectional study using the multi-staged random sampling method. 20,000 Chinese women aged  $\geq 20$  years were interviewed.

### Results

Of the women aged 20 -99 years, the prevalence of UUI was 2.6%, which increased with age. Age, waist circumference, constipation, chronic pelvic pain, history of gynecological diseases, and menopausal status were independent risk factors of UUI. Women aged 60 or above were 2.329 times more likely to suffer UUI as compared to women aged 20-40. Women in perimenopausal or postmenopausal status were respectively 1.766 or 2.285 times more likely to suffer UUI as compared to women in normal menstruation. However, parity and mode of delivery were not risk factors.

### Interpretation of results

The reported prevalence of UUI worldwide varies widely, according to different epidemiologic studies. This variation is mainly due to differences in the definitions, target population, questionnaire design, and selection criteria. A prospective analysis of 64,650 women aged 36-55 years in the Nurses' Health Study II from the USA shows that the incidence of urge incontinence (at least weekly) was 0.4%, being stable across age groups (2-year incidence) <sup>[1]</sup>. Everyone aged 20 years or more was invited to participate. 27,936 (80%) of 34,755 community-dwelling women answered the questionnaire. In another study, 11% had urge incontinence reported by the Norwegian. Some studies among Asians were also reported. A national survey was conducted as part of the Korean National Health Interview Survey to evaluate the prevalence of UUI in 2005. In 13,345 Korean households, 13,484 women aged 19 years or older were interviewed by census takers. The prevalence of UUI was 7.7% <sup>[2]</sup>. Our large-scale survey using a modified questionnaire to investigate the epidemiological characters of UUI in China showed that the overall prevalence of UI among Chinese women aged 20 or older was 2.6%. It was revealed that the prevalence rate among Chinese adult women increased with age, from 1.3% for women aged 20-40 years to 5.7% for those aged 60 years or older.

Most of the studies of risk factors for UUI are cross-sectional. Age is a strong risk factor for UUI. The incidence of urge UI increased steadily with age; with a 2-year incidence of 0.4% in women younger than 60 and 0.9% in women aged 70 to 79. Urge UI, for which there are limited effective treatments, increases with age reported by USA <sup>[3]</sup>. Thus research on UI prevention in older women is particularly important. Four thousand women recruited on a random basis from the Civil Registration System, in one rural and one urban county in Denmark, were asked to fill in a self-administered, validated questionnaire on lower urinary tract symptoms. Urge incontinence steadily escalated in an almost linear fashion with increasing age (OR=2.7 (95% CI: 1.6-4.5)).

From our study, age was an independent risk factor of UUI. Women aged 60 or above were 2.329 (95%CI: 1.419, 3.821) times more likely to suffer UUI as compared to women aged 20-40. Women in perimenopausal or postmenopausal status were respectively 1.766 (1.176, 2.654) or 2.285 (1.535, 3.402) times more likely to suffer UUI as compared to women in normal menstruation. Our results imply that the increasing occurrences of storage and voiding dysfunctions are closely associated with aging. However, UUI should not be considered an inevitable consequence of aging.

From our study, BMI was not related to UUI. However, waist circumference was an independent risk factor of UUI. BMI was not associated with symptoms of urge incontinence. But over-weight should be paid more attention in UUI patients. Parity and mode of delivery failed to show as risk factors of UUI in our study. This result is consistent with some, but not all, earlier studies. Moreover, we found that there is an association between chronic pelvic pain and UUI. However, it remains unclear whether UUI was the cause of chronic pelvic pain (CPP).

Our study demonstrated that UUI is not very common in Chinese women aged 20 or over. Due to the limit of sample size, we deduce that the true prevalence and risk factors of UUI in China are probably underestimated. In addition, because this is a cross-sectional study, it is difficult to interpret the relationships between some risk factors. Prospective studies with more samples are necessary in the future.

The cross-province survey of the prevalence of UUI provides us with a general profile of the disease among the general population in China. In future, we should place more emphasis on preventive measures, and pay more attention to risk factors rather than simply accepting UUI as a natural consequence of aging and being untreatable. More public education programs on the medical knowledge of UUI should be carried out among the Chinese people. Moreover, the treatment strategies need to be improved.

### Concluding message

The prevalence of UUI is 2.6% among Chinese adult women. Age is a major independent risk factor of UUI.

### References

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<i>Is this a clinical trial?</i>	Yes
<i>Is this study registered in a public clinical trials registry?</i>	No
<i>Is this a Randomised Controlled Trial (RCT)?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	Peking Union Medical College Hospital Ethics Committee, Beijing, P.R of China
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes