

## ANTEPARTUM URINARY INCONTINENCE: A COMPARISON BETWEEN NULLIPAROUS AND MULTIPAROUS HONG KONG CHINESE WOMEN

### Hypothesis / aims of study

To compare the prevalence and quality of life (QoL) impact of antepartum urinary incontinence between nulliparous and multiparous Hong Kong Chinese women.

### Study design, materials and methods

This is a prospective questionnaire survey conducted at a university teaching hospital. Clinical research ethics approval was obtained from the authors' institution. The main outcome measures of this study are the prevalence of antepartum urinary incontinence and the QoL impact to the subjects. Two sets of questionnaires were given to the subjects in order to assess urinary incontinence in the antenatal period, which included: validated Chinese versions of Urogenital Distress Inventory Short Form (UDI-6), and Incontinence Impact Questionnaire Short Form (IIQ-7). Both questionnaires are incontinence-specific psychometric instruments. The UDI-6 is a six-item questionnaire that assesses the life impact of urinary symptoms: Frequent urination, urge incontinence, stress incontinence, urinary leakage, voiding difficulty, and dysuria. It has a Likert-style scale: Not at all, slightly, moderately, and greatly [1]. The IIQ-7 is a seven-item questionnaire designed to assess different domains of QoL impairment. The domains evaluated are: Travelling far from home, social activities, emotional health, entertainment activities, household chores, feelings of frustration, and physical recreation [1]. Descriptive statistics were used to summarise subject demographics and the prevalence of antepartum urinary incontinence. Mann-Whitney U test was used for continuous variables, and Chi squared test for categorical variables. A value of  $p < 0.05$  was considered statistically significant. The statistical analyses were performed using Statistical Package for the Social Sciences (SPSS Inc., Illinois, USA) for Windows version 13.

### Results

Among the 1000 subjects approached, 598 (344 nulliparous and 254 multiparous women) agreed to participate in the study, and the response rate was 59.8%. It was observed that multiparous women were older (32 years [IQR 29, 35] vs. 27 years [IQR 24, 31],  $p < 0.01$ ) and heavier (67.2 kg [IQR 61.0, 74.1] vs. 64.4 kg [58.9, 70.4],  $p < 0.01$ ) than nulliparous women. Among the 254 multiparous patients, 202 (33.8%) were para 1, 45 (7.5%) were para 2, 6 (1%) were para 3, and 1 (0.2%) was para 4.

325 (94.5%) nulliparous women and 236 (92.9%) multiparous women reported at least one antenatal urinary symptom. Urinary symptoms were common during pregnancy, with the commonest symptom being urinary frequency, with overall prevalence of 84.1% (95%CI 81.2-87). The overall prevalence of other symptoms are: Urge incontinence 25.8% (95%CI 22.3-29.3), stress incontinence 38.8% (95%CI 34.9-42.7), urinary leakage 40.6% (95%CI 36.7-44.2), voiding difficulty 22.4% (19.1-25.7), and dysuria 49.8% (45.8-53.8). Multiparous women had a higher prevalence of stress incontinence (48.7% vs. 31.7%,  $p < 0.0001$ ), but a lower prevalence of dysuria than nulliparous women (46.1% vs. 52.6%,  $p < 0.03$ ). When the multiparous women's parity was stratified, increase in parity did not seem to affect the prevalence of stress incontinence (Chi squared test,  $p = 0.32$ ).

Impaired QoL indicated by the results of IIQ-7 was reported by 164 nulliparous women (50.5%) and 118 multiparous women (50.0%) with antenatal urinary symptoms. The frequency of the different domains of QoL impairment and the stratification according to patient-graded severity are presented in Table 1. The most frequently reported domain of impairment was physical recreation. However, there was no difference between nulliparous and multiparous women.

### Interpretation of results

The results show that antenatal urinary symptoms are common among pregnant women, with the commonest symptom being urinary frequency. Although nulliparous women suffered less stress incontinence than multiparous women, the prevalence of stress incontinence was still high among them. Half of the subjects felt that the urinary symptoms affected their QoL, and both nulliparous and multiparous women were equally affected.

### Concluding message

Antepartum urinary incontinence is common among Hong Kong Chinese women, and leads to impairment of QoL. Nulliparous women also suffer from stress incontinence.

### References

1. Neurourology and Urodynamics 1995;14:131-9.

**Table 1. Impairment of quality of life among the pregnant women with urinary symptoms using IIQ-7.**

Questions in IIQ-7	Severity of Symptom						Overall (n=598)	p*
	Slightly		Moderately		Greatly			
	Nullip <sup>1</sup>	Multip <sup>2</sup>	Nullip <sup>1</sup>	Multip <sup>2</sup>	Nullip <sup>1</sup>	Multip <sup>2</sup>		
Q1: Household chores ability								
No. (%)	54 (15.7)	35 (13.8)	22 (6.4)	11 (4.3)	0 (0)	4 (1.6)	126 (21.1)	0.07

95% CI	11.7 – 19.5	9.6 – 18.0	3.8 – 9.0	1.8 – 6.8	0	0.1 – 3.1	17.8 – 24.4	
Q2: Physical recreation								
No. (%)	78 (22.7)	52 (20.5)	25 (7.3)	13 (5.1)	2 (0.6)	3 (1.2)	173 (28.9)	0.51
95% CI	18.3 – 27.1	15.5 – 25.5	4.6 – 10.1	2.4 – 7.8	0 – 1.4	0 – 2.5	25.3 – 32.5	
Q3: Entertainment activities								
No. (%)	65 (18.9)	35 (13.8)	19 (5.5)	12 (4.7)	1 (0.3)	3 (1.2)	135 (22.6)	0.20
95% CI	14.8 – 23.0	9.6 – 18.0	3.1 – 7.9	2.1 – 7.3	0 – 0.9	0 – 2.5	19.3 – 26.0	
Q4: Travel ability								
No. (%)	81 (23.5)	43 (16.9)	22 (6.4)	13 (5.1)	4 (1.2)	5 (2.0)	168 (28.1)	0.16
95% CI	19.0 – 28.0	12.3 – 21.5	3.8 – 9.0	2.4 – 7.8	0.1 – 2.4	0.3 – 3.7	24.5 – 31.7	
Q5: Social ability								
No. (%)	65 (18.9)	36 (14.2)	17 (4.9)	9 (3.5)	2 (0.6)	6 (2.4)	135 (22.6)	0.09
95% CI	14.8 – 23.0	9.9 – 18.5	2.6 – 7.2	1.2 – 5.8	0 – 1.4	0.5 – 4.3	19.3 – 26.0	
Q6: Emotional health								
No. (%)	69 (20.1)	52 (20.5)	8 (2.3)	10 (3.9)	3 (0.9)	5 (2.0)	147 (24.6)	0.43
95% CI	15.9 – 24.3	15.5 – 25.5	0.7 – 3.9	1.5 – 6.3	0 – 1.9	0.3 – 3.7	21.2 – 28.1	
Q7: Feeling frustrated								
No. (%)	44 (12.8)	44 (17.3)	11 (3.2)	2 (0.8)	2 (0.6)	4 (1.6)	107 (17.9)	0.06
95% CI	9.3 – 16.3	12.7 – 22.0	1.34 – 5.1	0 – 1.9	0 – 1.4	0.1 – 3.1	14.8 – 21.0	

<sup>1</sup> Total number of nulliparous women was 344.

<sup>2</sup> Total number of multiparous women was 254.

\* Chi squared test comparing severity of symptoms between nulliparous and multiparous women.

**FUNDING: NONE**

**DISCLOSURES: NONE**

**HUMAN SUBJECTS:** This study was approved by the Joint CUHK-New Territories Cluster Clinical Research Ethics Committee and followed the Declaration of Helsinki Informed consent was obtained from the patients.