

## THE ASSOCIATION BETWEEN LOWER URINARY TRACT SYMPTOMS AND DEPRESSION IN AGING WOMEN

### Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) can impact health related quality of life (HRQOL), and may be associated with several comorbidities such as depression and cardiovascular disease. However, association between LUTS and depression has been rarely investigated, especially in population-based studies.

The aim of this study was to investigate the relationship between lower urinary tract symptoms (LUTS) and depression in aging women, in population-based cohort study.

### Study design, materials and methods

Of 1,520 participants, 534 women aged  $\geq 45$  years, who underwent detailed health evaluations, including health-related questionnaires, evaluations of the medical history and various life style factors as well as clinical measurements, were included. LUTS and depression were assessed by validated questionnaires, the International Prostate Symptom Score (IPSS) and the Geriatric Depression Scale (GDS) and the relationship between LUTS and depression was investigated.

### Results

The mean age of the participants was  $64.7 \pm 6.2$ . Of the 534 women, 352 (65.9%) had moderate/severe LUTS (IPSS  $> 7$ ) and 312 (58.4%) had depression. The prevalence and severity of LUTS and depression increased significantly with age ( $p < 0.001$ ). The multivariate logistic regression analysis, controlling for age, life style factors and comorbidities, showed that women with severe depression were 1.7 times more likely to have moderate/severe LUTS than women without depression (Table 1,  $p < 0.05$ ); in addition, women with moderate/severe LUTS were 2-3 times more likely to have depression than women with no/mild LUTS (Table 2,  $p < 0.05$ ).

### Interpretation of results

The presence and severity of LUTS were strongly related to those of depression in aging women and the relationship between LUTS and depression is independent of age, life style factors and comorbidities such as smoking, alcohol, obesity, diabetes, hypertension, hyperlipidemia, cerebral vascular accident.

### Concluding message

The presence and severity of depression were independent risk factors for LUTS and vice versa in aging women. These results highlight the clinical importance of evaluation depression in patients with LUTS, and the need to consider the presence LUTS in the management of patients with depression.

Table 1. Multivariate logistic regression result for relative risk of moderate/severe LUTS by depression and comorbidity

		Moderate/severe LUTS	
		Odds ratio (95% confidence interval)	p-value
Depression	no depression	1	
	mild/moderate	1.51 (0.21-2.58)	0.212
	severe	1.70 (1.15-3.26)	0.032
Age		1.61 (0.65-4.03)	0.349
Body mass index ( $\geq 25$ kg/m <sup>2</sup> )		1.00 (0.57-1.70)	0.959
Diabetes mellitus		2.11 (0.98-4.37)	0.055
Hypertension		0.95 (0.55-1.54)	0.751
Hyperlipidemia		1.20 (0.66-2.07)	0.593
Cerebral vascular accident		1.12 (0.62-3.12)	0.251
Heart disease		5.95 (0.13-11.87)	0.852
Smoking		0.93 (0.26-2.78)	0.102
Alcohol		2.01 (0.24-2.11)	0.362
Regular exercise		1.00 (0.51-1.87)	0.701

Table 2. Multivariate logistic regression result for relative risk of depression by LUTS and comorbidity

		Depression	
		Odds ratio (95% confidence interval)	p-value
<b>LUTS</b>	<b>no/mild LUTS</b>	<b>1</b>	
	<b>moderate</b>	<b>2.01 (1.12-3.92)</b>	<b>0.025</b>
	<b>severe</b>	<b>2.73 (1.85-4.72)</b>	<b>0.012</b>
Age		2.21 (1.08-7.96)	0.035
Body mass index ( $\geq 25$ kg/m <sup>2</sup> )		1.71 (0.23-2.51)	0.121
Diabetes mellitus		1.12 (0.52-4.12)	0.752
Hypertension		2.65 (0.12-2.31)	0.218
Hyperlipidemia		0.85 (0.21-1.25)	0.351
Cerebral vascular accident		1.00 (0.52-4.12)	0.122
Heart disease		1.02 (0.76-3.82)	0.261
Smoking		1.21 (0.13-1.67)	0.127
Alcohol		2.52 (0.81-2.76)	0.751
Regular exercise		3.01 (0.24-5.94)	0.328

Disclosures

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**Informed Consent:** Yes