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THE TIME SINCE THE DIAGNOSIS OF DIABETES MIGHT BE LINKED TO LOWER URINARY TRACT SYMPTOMS.

Hypothesis / aims of study

Poor diabetes control may lead to many chronic complications including macrovascular diseases, microvascular diseases and neuropathy (1). Among varied system disturbances related to diabetic neuropathy, bladder dysfunctions/ lower urinary tract symptoms (LUTS) are a category that is not well studied. Information related to the prevalence, and associated factor of bladder dysfunctions/LUTS is limited. Multiple studies had confirmed the associations between diabetes and bladder dysfunctions/LUTS among women (2, 3). The aims of this study were to estimate the prevalence of LUTS, to identify factors associated with LUTS, and to explore the relationship between LUTS and health related quality of life (HRQL) in a sample of female type 2 diabetic patients.

Study design, materials and methods

This study is a cross-sectional study. This study was conducted at 2 metabolism and endocrinology outpatient departments in two hospitals at Taiwan. Totally, 200 female type 2 diabetic patients were recruited. Prevalence of LUTS, uroflowmetry results, factors associated with LUTS, HRQL, and the relationship between LUTS and HRQL were explored. Logistic regression is used to identify factors associated with LUTS. HRQL scores for patients with LUTS and without LUTS were compared by independent t tests.

Results

Most of the female diabetic patients were 51 to 65 years of age (n = 132, 66.0%), and were overweight or obesity (n = 144, 72.0%) (Table 1). Of the 200 patients, 143 (71.5%) experienced at least one type of LUTS. The prevalence of different LUTS ranged from 0.5% (urinary urgency) to 46.0% (nocturia) (Table 2). Uroflowmetry results showed that 36 (20.7%) patients' voiding patterns were abnormal. About 7% of the patients had a PVR volume more than 50 ml. Two factors associated with LUTS were identified. Patients whose parity was more than 2 had 2.6 times (P = .005, 95% CI = 1.3, 5.0) higher odds of experiencing LUTS than those who delivered equal or less than 2 children. Patients diagnosed with diabetes for equal or more than 2 years had 2.3 times (P = .029, 95% CI = 1.1, 4.8) higher odds of experiencing LUTS than those who were diagnosed with diabetes for less than 2 years. Patients without LUTS reported higher mean scores of HRQL (physical functioning, role limitation caused by physical health problems, role limitation caused by emotional problems, and general health) than patients with LUTS. The mean scores of HRQL were significantly different for patients with and without LUTS at 1 HRQL aspect: physical functioning.

Interpretation of results

Study results show that LUTS are common among female diabetic patients, parity and the time since the diagnosis of diabetes might be linked to LUTS, and LUTS have a negative effect on a patient's HRQL.

Concluding message

Given the improved life expectancy of female Taiwanese and the high prevalence of LUTS among this specific group, health care providers should screen for LUTS, deliver adequate management/treatment of LUTS, provide individualized intervention of LUTS, and make appropriate referrals to optimize female diabetic patients' HRQL.

Table 1. Individual Characteristics (n = 200)

Variables	n	%
Age (Range:20-70, Mean= 57.7, SD= 8.5)		
20-50	32	16.0
51-55	35	17.5
56-60	51	25.5
61-65	46	23.0
66-70	36	18.0
Body mass index (Range:18.0-44.0, Mean = 26.6, SD = 4.9)		
< 24.0 underweight or normal	56	28.0
24.0-26.9 overweight	60	30.0
27.0-29.9 mild obesity	43	21.5
≧ 30.0 moderate or severe obesity	41	20.5
Parity		
0	23	11.5
1	18	9.0
2	67	33.5
3	62	31.0
> 3	30	15.0

Time since diagnosis of diabetes		
< 2 years	26	13.0
2 years - < 5 years	56	28.0
5 years - < 10 years	69	34.5
10 years - < 15 years	19	9.5
≧ 15 years	30	15.0
Treatment(s) received		
Oral Hypoglycemic Agents (OHA)	160	80.0
Oral Hypoglycemic Agents (OHA) + Insulin	23	11.5
Insulin	4	2.0
Diet control + exercise	11	5.5
Without regular treatment	2	1.0
AC sugar (Range:70-297, Mean = 147.7, SD = 44.4)		
< 100 mg/dL	19	9.5
100-130 mg/dL	66	33.0
>130 mg/dL	115	57.5
A1C (Range:5.5-13.7, Mean = 7.9, SD = 1.6)		
< 7%	60	30.0
7.0%-8.0%	64	32.0
8.1%-9.0%	34	17.0
> 9.0%	42	21.0

Table 2. Prevalence of LUTS (n = 200)

	All (n = 200)	Age < 50 (n = 32)	Age = 50-60 (n = 86)	Age > 60 (n = 82)
LUTS	Yes, n (%)	Yes, n (%)	Yes, n (%)	Yes, n (%)
Any LUTS	143 (71.5)	24 (75.0)	57 (66.3)	62 (75.6)
Storage symptom				
Nocturia (≥ 2 episodes/night)	92 (46.0)	11 (34.4)	32 (37.2)	49 (59.8)
Urinary incontinence	72 (36.0)	16 (50.0)	31 (36.0)	25 (30.5)
Increased daytime urinary frequency	23 (11.5)	3 (9.4)	12 (14.0)	8 (9.8)
Urinary urgency	1 (0.5)	0 (0.0)	1 (1.2)	0 (0.0)
Voiding symptom				
Weak urinary stream	6 (3.0)	0 (0.0)	3 (3.5)	3 (3.7)
Intermittent stream	4 (2.0)	1 (3.1)	1 (1.2)	2 (2.4)
Hesitancy	3 (1.5)	1 (3.1)	2 (2.3)	0 (0.0)
Post-micturition symptom				
Incomplete emptying	45 (22.5)	9 (28.1)	18 (20.9)	18 (22.0)
Urinary Tract Infection	10 (5.0)	5 (15.6)	2 (2.3)	3 (3.7)

Abbreviation: LUTS, Lower Urinary Tract Symptoms.

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Disclosures

Funding: National Science Council at Taiwan. **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Taipei Medical University - Joint Institutional Review Board; Cardinal Tien Hospital - Institutional Review Board **Helsinki:** Yes **Informed Consent:** Yes