



EVALUATION OF THE LOWER URINARY TRACT FUNCTIONS IN DIABETIC PATIENTS WITH OR WITHOUT DIABETIC NEUROPATHY

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Hypothesis / Aims Of Study

Diabetes mellitus (DM) is a serious health problem all over the world with an increased prevalence and associated frequent complications. During the course of the disease it also affects lower urinary tract (LUT) in varying degrees and causes some unfavourable symptoms. These symptoms may be voiding symptoms or storage or both. These symptoms are generally occur due to diabetic neuropathy (DN) and diabetic cystopathy. The aim of this study is to investigate the relationship between the presence of DN related to DM and lower urinary tract symptoms (LUTS).

Materials and Methods

A total of 100 adult patients diagnosed as type 1 or type 2 DM between January 2013 and January 2016 and who are still under follow-up in Ege University School of Medicine, Department of Endocrinology were involved in our study. All patients' age, sex, type of DM, duration of DM, DM related comorbid diseases, previous surgeries related to diabetic complications, body mass index (BMI), fasting plasma glucose (FPG) level, serum glycosylated hemoglobin (HbA1c) value, glomerular filtration rate (GFR), serum 25-(OH) D level, presence of DN and presence of diabetic retinopathy (DR) were evaluated. Additionally; average flow rate and post void residual (PVR) were calculated and IPSS, ICIQ SF scores and OAB-q SF scores were recorded. Statistical analyses were performed with IBM SPSS Statistics 21.0.

Results

| Relation | 'p' Value | |
|--------------------|-------------------------------------|--------|
| Presence of DN | Average Flow Rate | 0,0002 |
| | ICIQ SF Total Score | 0,015 |
| | ICIQ SF Qol Score | 0,038 |
| | ICIQ SF Incontinence Severity Score | 0,031 |
| | OAB-q SF Symptom Severity Score | 0,022 |
| | OAB-q SF Qol Score | 0,003 |
| | Male Gender | PVR |
| OAB-q SF Qol Score | | 0,035 |
| Type 2 Diabetes | Average Flow Rate | 0,003 |

Results

%62 of the patients were female and %38 were male. %27 patients were diagnosed as type 1 DM while %73 patients were type 2 DM. DN was present in %59 of the patients and DR was present in %38 of the patients. %65 of the patients had a PVR < 50 ml, %19 of them had a PVR between 50-100 ml and %16 of them had a PVR > 100 ml. %71 of the patients had a DM duration ≤ 15 years and %29 of them had a DM duration > 15 years. %52 of the patients were < 55 years old and %48 of them were ≥ 55 years old. Demographic and biochemical findings were as follows; mean age 50.5±16.6, mean BMI 28.5±8.3 kg/m², mean DM duration 13.2±9.2 years, mean FPG level 172.3±73.9 mg/dl, mean HbA1c value %8.8±2.4, mean GFR 110.5±43.2 ml/min/1.73m² and mean serum 25-(OH) D level 25.4±26.4 nmol/L.

Statistical analyses showed that DN was associated with lower average flow rates (p=0,0002), higher ICIQ SF total scores (p=0,015), higher ICIQ SF incontinence severity scores (p=0,031), higher ICIQ SF Qol scores (p=0,038), higher OAB-q SF symptom severity scores (p=0,022) and lower OAB-q SF Qol scores (p=0,003). Additionally type 2 DM was shown to be associated with lower average flow rates (p=0,003) and higher PVR (p=0,047). Another significant finding was the lower OAB-q SF Qol scores (p=0,035) in male gender.

Interpretation of Results

The results obtained from this study showed that the presence of DN, patients with type 2 DM and male gender are more likely to develop any kind of LUT dysfunction.

Concluding Message

We recommend that the evaluation of LUTS should be done as a routine part of the evaluation of diabetic patients with emphasized risk factors even if they are asymptomatic.