

## SCREENING FOR LOWER URINARY TRACT SYMPTOMS (LUTS) IN DIABETIC MEN: QUESTIONNAIRE-BASED PREVALENCE AND ASSOCIATIONS WITH HEALTH, SEXUAL FUNCTION AND QUALITY OF LIFE ASPECTS

### Hypothesis / aims of study

Lower urinary tract dysfunction is thought to be prevalent amongst diabetics, its most common form being diabetic cystopathy, which is thought to be due to the peripheral autonomic neuropathy associated with diabetes. Urodynamic investigations have shown that prevalence of diabetic cystopathy ranges between 32-38% of all diabetics, being considerably higher in type II patients, where it has been reported to be in the range of 43-87% in some studies. A lower percentage of patients have been described to suffer from detrusor overactivity. Duration of diabetes is reversely correlated with the presence of urodynamic LUT dysfunction. However, a recent community-based survey in the USA (Boston Area Community Health Survey) could not identify diabetes as a risk factor for LUTS. In contrast, diabetes is a well-known risk factor for the development of erectile dysfunction.

Few studies to date have investigated the prevalence and bother associated with LUTS in male diabetic patients. The aims of this study were to assess the prevalence of LUTS amongst Greek diabetic men and to evaluate their relationship with general health, sexual function and quality of life factors.

### Study design, materials and methods

A total 557 consecutive patients from 3 different diabetes outpatient clinics participated in this study. Demographic (age, body mass index - BMI, education, smoking, alcohol and exercise habits), clinical (disease duration and presence of diabetic complications) and laboratory data (HbA1c and creatinine levels) were used for patients' assessment. The International Prostate Symptom Score (IPSS) was administered for the assessment of LUTS, SF-36 (Greek version 1.1) for the evaluation of Health-Related Quality of Life (HRQoL), the International Index of Erectile Function (IIEF) for men's sexual function, and the General Health Questionnaire (GHQ-28) for the crude assessment of psychopathology.

Results were expressed as mean  $\pm$  standard deviation and statistical analysis included the Student's t-test for comparing two groups or subscales, Pearson's product-moment correlation coefficient for estimating the association of quantitative measures and analysis of variance for estimating the joint effect of more than one variables on a dependent variable

### Results

Sufficient data were available in 474 (85.1%) of the participants and were included in the results analysis. Their mean age was 52.7 years and 112 (23.6%) of them had Diabetes type I. Mean duration of disease was  $11.3 \pm 8.05$  years.

According to the AUA Index Severity categories (0-7 mild, 8-19 moderate, and 20-35 severe), 89.9% of the men had mild or no LUTS at all, 9.1% had moderate, while 1.1% had severe symptoms. Mean score for the symptoms (S) subscale of IPSS was  $2.7 \pm 4.3$ ; mean score for the storage symptoms subscale was higher compared to the voiding symptoms subscale score ( $1.69 \pm 2.40$  versus  $1.03 \pm 2.58$ ,  $t(473)=5.71$ ,  $p<0.001$ ). The disease-specific quality of life item (IPSS/L) had a mean score of  $1.29 \pm 1.03$ , while according to the respective categories (0-1 none or mild, 2-4 moderate, 5-6 severe) 31.6% of the patients reported moderate and 0.7% severe dissatisfaction from their current micturition conditions. Both IPSS/S and IPSS/L were mildly correlated with age (Pearson's  $r=0.260$  and  $0.196$  respectively), with IIEF ( $-0.267$  and  $-0.200$ ), with GHQ-28 ( $0.226$  and  $0.179$ ) and specifically with the Somatization and Anxiety/Insomnia subscales, as well with the Physical Component Summary of SF-36 ( $-0.308$  and  $-0.193$ ). All reported correlations were significant at the 0.01 level. Men with diabetes type II had significantly worse IPSS/S and /L scores ( $t(380)=6.15$ ,  $p<0.001$ ) but when the effect of age was accounted for, this difference was not significant ( $F(1,468)=0.18$ ,  $p=0.671$ ). IPSS's associations with diabetic complications or other epidemiological parameters were negligible.

### Interpretation of results

Despite the high prevalence of urodynamic LUT dysfunction previously reported in diabetic patients, this study records a low prevalence of LUTS in diabetic men, depicting a possible discrepancy in the perception of LUT dysfunction in these patients. Results compliment the failure of community-based surveys to identify diabetes as a risk factor for LUTS. The high prevalence of diabetic cystopathy, which is characterized by reduced bladder sensation may be a possible explanation for these findings

### Concluding message

Prevalence of LUTS in a sample of Greek diabetic men, as screened by means of IPSS, was relatively low. Weak correlations were found with age and aspects of general, psychosocial and sexual well-being. It is postulated that self-reported assessment of urinary function underestimates the presence of LUT dysfunction in diabetes, due to its insidious onset and progression.

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<b>What were the subjects in the study?</b>	<b>HUMAN</b>
<b>Was this study approved by an ethics committee?</b>	<b>Yes</b>
<b>Specify Name of Ethics Committee</b>	<b>Papageorgiou Hospital Ethics Committee</b>
<b>Was the Declaration of Helsinki followed?</b>	<b>Yes</b>
<b>Was informed consent obtained from the patients?</b>	<b>Yes</b>