

Metabolic syndrome and smoking are associated with an increased risk of nocturia in male patients with benign prostatic enlargement

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Aim

The aim of our study was to evaluate the relationship between smoking, metabolic syndrome and nocturia in patients with lower urinary tract symptoms (LUTS) and benign prostatic enlargement (BPE).

Materials & Methods

A consecutive series of patients with LUTS-BPE enrolled, from 2009 onward. Excluded patients on medical treatment for LUTS.

Evaluated parameters:

- IPSS (International Prostate Symptom Score) including vIPSS and sIPSS
- PV assessed by transrectal ultrasound (TRUS)
- BMI (Body mass index), waist circumference and blood pressure.
- PSA, fasting glucose, triglyceride and high-density lipoprotein.

Metabolic syndrome (MetS) defined according to Adult Treatment Panel_A III (ATP III) Moderate/severe nocturia was defined as nocturia episodes ≥ 2 .

Results

492 patients enrolled

Moderate/severe nocturia was reported in 212/492 (43.1%).

MetS: 147/492 (29,9%) patients

- 89/147 (60,5%) presented moderate/severe nocturia (p=0.001).

Smoking addiction: 105/492 (21.3%) patients

- 54/105 (51.4%) presented moderate/severe nocturia (p=0.034).

	Overall	Nocturia <2	Nocturia ≥ 2	P
Age, yr	67.3 \pm 7.9 (68; 61/74)	65.7 \pm 8 (66; 60/71)	69.5 \pm 7.2 (70; 65/75)	0.001
PSA, ng/ml	7.8 \pm 4.7 (6.5; 4.7/9.7)	7.8 \pm 4.5 (6.5; 4.8/9.6)	7.9 \pm 5 (6.4; 4.5/9.8)	0.182
BMI, kg/m ²	27.1 \pm 3.6 (26.5; 24.7/29.2)	26.8 \pm 4.5 (26.4; 24.5/29)	27.3 \pm 3.8 (27; 24.9/29.4)	0.147
PV, ml	58 \pm 29.6 (50.9; 37/72)	53.9 \pm 26.4 (46.5; 36/65.8)	63.2 \pm 32.6 (58; 39.7/78.2)	0.002
Glycemia, mg/dl	99.8 \pm 29 (93; 83/107)	98.5 \pm 28.2 (93; 82/105.2)	101.4 \pm 29.9 (95; 83/109)	0.191
Trygliceridemia, mg/dl	141.6 \pm 79 (127; 90/172)	147.8 \pm 91.9 (129; 90/179)	133.4 \pm 56.9 (121; 89/164)	0.422
HDL, mg/dl	49.6 \pm 12.7 (48; 41/56)	49.8 \pm 12.5 (48; 41/57)	49.3 \pm 12.9 (48; 40/55.7)	0.429
IPSS	9.83 \pm 6.7 (9; 4.75/14)	7.24 \pm 5.2 (7; 3/11)	13.2 \pm 7 (12; 7/19)	0.000
vIPSS	5.37 \pm 4.4 (5; 2/8)	4.4 \pm 3.8 (4; 1/7)	6.65 \pm 4.9 (6; 3/10)	0.000
sIPSS	4.49 \pm 3.4 (4; 2/7)	2.8 \pm 2.4 (3; 1/4)	6.6 \pm 3.3 (7; 4/9)	0.000
Nocturia	1.49 \pm 1.3 (1; 0/2)	0.55 \pm 0.5 (1; 0/1)	2.7 \pm 0.9 (2; 2/3)	0.000

Multivariable analysis for predicting moderate/severe nocturia

	Moderate/severe nocturia	p
Age	1.067 (1.036-1.098)	0.001
PV	1.011 (1.003-1.019)	0.006
MetS	2.509 (1.571-4.007)	0.001
Smoking status	1.861 (1.088-3.185)	0.023

Data are presented as Odds Ratio (95% Confidence Interval)

Conclusion

MetS and smoking doubled the risk of moderate/severe nocturia in LUTS/BPE-men. Assessment of patients smoking and metabolic status is suggested in patients with LUTS/BPE and possible implications for treatment should be considered.