

Nocturnal polyuria in males with LUTS: prevalence and role of the IPSS and uroflowmetry in the outpatient evaluation. An observational, prospective double-centre study.

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INTRODUCTION, AIM OF THE STUDY

Nocturnal Polyuria (NP) is common in males with nocturia and/or lower urinary tract symptoms (LUTS) [1]. Nowadays frequency volume chart (FVC) is the best tool for the assessment of NP in the outpatient setting. Aim of the study was to evaluate the prevalence of NP, as well as the relation between NP, International Prostate Symptom Score (IPSS) and uroflowmetry (UF) data in males with LUTS.

MATERIALS AND METHODS

From September 2016 to November 2017, a consecutive series of 461 patients with LUTS were enrolled into a prospective study involving two Urological Departments. For each patient were collected the following data: detailed medical history, UF, sonographic assessment of Post Void Residual urine volume (PVR), a self-administered IPSS and a 3 days-FVC, indicating "bedtime" and "waking time". Based on 3 days-FVC, frequency (24 hours, day-time, night-time), total voided volume (24 hours, day-time, night-time), and Nocturnal Polyuria index (NPi) were assessed. NP was defined as a NPi > 33% [3]. Severe NP was defined as NPi > 50%. Analyses were performed considering: (i) total IPSS score; (ii) IPSS frequency score (domain 2); (iii) IPSS nocturia score (domain 7); (iiii) IPSS bother score (domain 8); (iiiii) peak flow (Qmax) at the UF; (iiiii) PVR measured after UF. For the statistical analysis we used Kruskal-Wallis test.

Table 1: prevalence of nocturnal polyuria in different age groups.

| Age (years) | NPi > 33% | NPi > 50% |
|--------------------|--------------------|-------------------|
| <65 (n=34) | 22 (64,71%) | 1 (2,94%) |
| 65-74 (n=66) | 32 (48,48%) | 4 (6,06%) |
| ≥ 75 (n=62) | 35 (56,45%) | 11 (17,74%) |
| Tot (n=162) | 89 (54,94%) | 16 (9,88%) |

Table 2: median IPSS answers, peak flow and PVR, stratified according to NPi. IQR=interquartile range. *Kruskal-Wallis test

| | NPi ≤ 33% | 33 < NPi ≤ 50% | NPi > 50% | P |
|-----------------|--------------------------|--------------------------|--------------------------|-----------|
| N° pts | 73 | 73 | 16 | |
| | (median and IQR) | | | |
| IPSS 2 | 1.00 [0.00 – 2.00] | 1.00 [0.00 – 3.00] | 1.50 [1.00 – 3.00] | >.05 * |
| IPSS 7 | 1.00 [1.00 – 2.00] | 2.00 [1.00 – 3.00] | 2.50 [2.00 – 4.00] | <.01 * |
| IPSS 8 | 2.00 [1.00 – 3.00] | 2.00 [0.00 – 3.00] | 3.00 [1.50 – 4.00] | >.05 * |
| IPSS tot | 6.00 [3.00 – 10.00] | 9.00 [5.00 – 14.00] | 8.50 [5.00 – 18.25] | <.05 * |
| Qmax | 13.60 [9.50 – 17.20] | 12.00 [8.30 – 16.30] | 13.75 [9.58 – 16.18] | >.05 * |
| PVR | 36.00 [12.00 – 70.00] | 37.00 [19.00 – 77.00] | 26.50 [17.25 – 41.75] | >.05 * |

RESULTS

162 patients completed both IPSS and 3-days FVC (mean age 70,95 ± 8.04 years). Table 1 shows the prevalence of nocturnal polyuria in different age groups: 89 (54,9%) patients had a NPi>33%, 16 (9,88%) of them had NPi>50%, based on the 3-days FVC. Average NPi was 34,40% ± 11,20. Prevalence was higher among young patients (64,71% in patients with an age less than 65 years). Table 2 shows median IPSS score in each domain considered, Qmax and PVR, stratified according to NPi. Median IPSS domain 7 and total IPSS scores showed statistical difference in the three groups (p 0.001 and < 0.01 respectively). No significant difference was found analyzing median Qmax and PVR.

INTERPRETATION OF RESULTS

Our data showed a high NP prevalence (> 50%) among males complaining LUTS. In only a minor part of the patients NP was severe (<10%). NP influenced outcomes of median IPSS domain 7 and total IPSS score but not findings of IPSS domain related to quality of life and frequency. UF data (Qmax and PVR) did not change according to NPi. Therefore, NP did not impact the micturition and the bladder emptying.

CONCLUSIONS

NP was extremely common among males with LUTS. IPSS questionnaire added few information about NP and his role in the specific assessment of NP in an outpatient setting remained uncertain. IPSS questionnaire allowed to assess nocturia episodes (Domain 7) but did not detect NP. Only the use of 3-days FVC may lead to a correct diagnosis. NP did not affect outcomes of UF and PVR.

REFERENCES

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