

## NOCTURIA IN MALE ADULTS: COMPARISON BETWEEN PATIENTS WITH BPE AND THOSE WITHOUT BPE

### Hypothesis / aims of study

Nocturia is a common lower urinary symptom in men and the pathophysiology of nocturia is multifactorial. Bladder outlet obstruction (BOO) due to benign prostatic enlargement (BPE), overactive bladder, nocturnal polyuria and sleep disorders have been reported to cause nocturia. The objective of the present study is to investigate the cause of nocturia in Japanese men by frequency/volume chart.

### Study design, materials and methods

93 patients with nocturia as a main symptom are studied by a 3-day frequency/volume chart. Patients were divided into two groups: BPE+ group (total prostate volume >20ml, 73.2±9.0 years old) and BPE- group (total prostate volume <20ml, 68.9±10.2 years old). Polyuria is defined as the measured production of more than 2.8liters of urine in 24hours, and nocturnal polyuria as a nocturnal urine output greater than 33% of total urine. No ethical approval was needed in this study.

### Results

Total prostate volume in BPE+ and BPE- group was 31.7±16.9ml and 14.3±3.8ml, respectively. The maximum voided volume in each group was 324.3±174.8 (70-900) ml and 337.3±146.7 (80-850) ml, respectively. Overactive bladder syndrome, polyuria, nocturnal polyuria and sleep disorders were noted in 35.8%, 7.6%, 60.4% and 11.3%, respectively, of the BPE+ group, and in 30.0%, 7.5%, 50.0% and 0%, respectively, of the BPE- group. Lifestyle intervention was effective in 60% and 64.3% respectively, of patients in each group. Treatment with  $\alpha$ -antagonists were effective for 36.7% and 53.8% of patients in each group. Treatment with anti-cholinergics, diuretics in the daytime and desmopressin before bedtime were effective in a few patients.

### Interpretation of results

Nocturnal polyuria was the most common cause of nocturia in Japanese male patients. There was no difference in terms of the causes of nocturia between the patients with BPE and those without BPE. Most of patients with nocturnal polyuria drank excessive water especially during the nighttime, and lifestyle intervention was effective in these patients.  $\alpha$ -Antagonists were not so effective for nocturia in BPE patients.

### Concluding message

Nocturnal polyuria was the most common cause of nocturia in Japanese male patients irrespective of the presence of BPE.

**FUNDING:** none

**CLINICAL TRIAL REGISTRATION:** This clinical trial has not yet been registered in a public clinical trials registry.

**HUMAN SUBJECTS:** This study did not need ethical approval because this study is within the daily clinical practice but followed the Declaration of Helsinki informed consent was not obtained from the patients.