Tamsulosin Reduces Nighttime Urine Production in Benign Prostatic Hyperplasia Patients with Nocturnal Polyuria: A Prospective Open-Label Long-Term Study Using Frequency-Volume Chart

Introduction and Objective: The effects of tamsulosin treatment on changes in frequency-volume chart (FVC) data, especially nighttime urine production, over time were assessed, and the mechanisms underlying the improvement of nocturia in benign prostatic hyperplasia (BPH) patients with nocturnal polyuria (NP) are discussed.
Materials and Methods: A total of 104 patients with lower urinary tract symptoms secondary to BPH were enrolled. After enrollment in the study, the patients were treated with tamsulosin (0.2 mg) once daily. Visits were scheduled every 4 weeks until week 12 (month 3) after study entry, and then every 12 weeks subsequently. All patients completed the International Prostate Symptom Score (IPSS), quality of life (QOL) index, and 3-day FVC, and underwent uroflowmetry at enrollment and on each visit.
Results: Eighty-two patients (mean age: 70.9 ± 7.1 years) were analyzed for 24 months after treatment. Patients were divided into two groups, NP and nonNP, based on FVC outcome. The IPSS, QOL index, and maximum flow rate improved during the 24-month period after treatment in both groups. Mean daytime urine volume significantly increased in the NP group, but no changes were detected in the nonNP group. Mean nighttime urine frequency significantly decreased in the NP group over a 24-month period, and was associated with a significant decrease in nighttime urine volume that was not found in the nonNP group. Maximum voided volume increased most months after treatment in both groups.
Conclusions: In the present study, the long-term effectiveness of tamsulosin treatment in BPH patients was demonstrated. FVC is a useful tool for the evaluation of patient characteristics to enable the determination of efficient, individualized therapy regimens tailored to the needs of each BPH patient. Our long-term prospective study using FVC demonstrated that tamsulosin could correct disturbances of the circadian regulation of urine production in BPH patients with NP. However, other medical options may be needed to improve nocturia in BPH patients without NP based on the involvement of additional factors associated with bladder dysfunction, nighttime urine production, or sleep disturbances, which may contribute to nocturia.