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THE IMPROVEMENT OF NOCTURIA AFTER TREATMENT MOSTLY AFFECTS THE IMPROVEMENT OF QUALITY OF LIFE.

Hypothesis / aims of study
The quality of life (Qol) item of International Prostate Symptom Scores (IPSS) is an independent and important item because this reflects subjective bothersomeness from lower urinary tract symptom (LUTS) related to benign prostatic hyperplasia (BPH). In this study, we evaluated the factors affecting pretreatment Qol scores or change of the Qol scores following treatment of LUTS/BPH.

Study design, materials and methods
This pooled data analysis collected pretreatment and post-treatment IPSS data and LUTS/BPH related profiles from five selected clinical studies. To search studies that evaluate effect of treatment for LUTS/BPH, list of studies using alpha blocker that were primary treatment of LUTS/BPH were requested to pharmaceutical companies. One pharmaceutical company responded, and 30 trials were screened. Disagreement of providing data by the investigator, lack of sufficient IPSS data, unsuitable study design or participant for analysis were the reason of exclusion. Collected data from included 5 studies contains demographic details (age, height and weight), past medical history, baseline IPSS score and baseline BPH profile (PSA, prostate volume, Qmax and PVR at Uroflowmetry) and posttreatment IPSS score, Qmax and PVR following 3 months medication for LUTS/BPH.

Results
Mean age of 444 male patients was 62.5 ± 8.5 years. Mean IPSS total score and Qol score at baseline were 18.6 ± 6.7 and 4.0 ± 0.9 points. After 3 months medication, mean AUA-SI total score and Qol score were significantly decreased to 11.7 ± 6.4 ($p < 0.001$) and 2.9 ± 1.2 ($p < 0.001$). On linear regression multivariate analysis, all IPSS items except item 3 were independent factors that influence on baseline Qol scores. However, maximum flow rate, post-void residual urine volume, level of prostate specific antigen and prostate volume were not independent factors that determine Qol scores. Among the seven IPSS item, IPSS item 7 (nocturia) had the strongest effect on Qol score ($B = 0.179$, $p < 0.001$). On multivariate analysis, the improvement of IPSS item 2, 4, 5 and 7 scores were independent factors that influence on the improvement of Qol scores, but IPSS item 1, 3, 6 and other variables were not. The improvement of IPSS 7 ($B = 0.171$, $95\%CI = 0.079 – 0.263$, $p<0.001$) showed strongest correlation with the improvement of Qol score. Even though the total IPSS were decresed by 5 or more points, Qol scores were not improved in 33.3% of patients when nocturia was not improved. In contrast, 95% of patients showed improvement of Qol scores when nocturia was decreased by 2 or more.

Interpretation of results
IPSS item 7 (nocturia) had the most influence on pretreatment Qol or change of Qol after treatment. All of strorage symptom item (IPSS 2,4 and 7) score had an independent influence on Qol or Qol change, however, some of voiding symptom item did not.

Concluding message
Storage symptoms, especially nocturia (AUA-SI item 7), have a greater influence on LUTS related QoL than voiding symptoms. Improvement of Qol scores also correlated better with the improvement of storage symptom than the improvement of voiding symptoms.

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