

## IMPROVEMENT OF NOCTURIA AND NOCTURNAL POLYURIA FOLLOWING SURGICAL TREATMENT FOR BENIGN PROSTATIC HYPERPLASIA (BPH): COMPARISON OF PHOTOSELECTIVE POTASSIUM TITANYL PHOSPHATE LASER VAPORIZATION OF PROSTATE (KTP-PVP) AND HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HOLEP)

### Hypothesis / aims of study

Recent evidence suggests that nocturnal polyuria (NP) is a common cause of nocturia. Several studies have documented the improvement in nocturia after surgical treatment for benign prostatic hyperplasia (BPH). However, the changes in NP after surgery have not been reported. We evaluated the changes in nocturia and NP following photoselective potassium titanyl phosphate laser vaporization of prostate (KTP-PVP) or Holmium laser enucleation of the prostate (HoLEP).

### Study design, materials and methods

This retrospective study included patients who had both nocturia and NP on frequency volume chart (FVC) preoperatively, and underwent KTP-PVP (n=62, group A) or HoLEP (n=96, group B) between March, 2005 and October, 2012. Nocturia is defined as  $\geq 2$  void at night, and NP is defined as nocturnal polyuria index (NPI)  $>33\%$ . The improvement of nocturia was judged by a reduction of nocturnal frequency (NF)  $\geq 50\%$ , and improvement of NP was judged by a decrease of NPI value  $\geq 6.0\%$ .

### Results

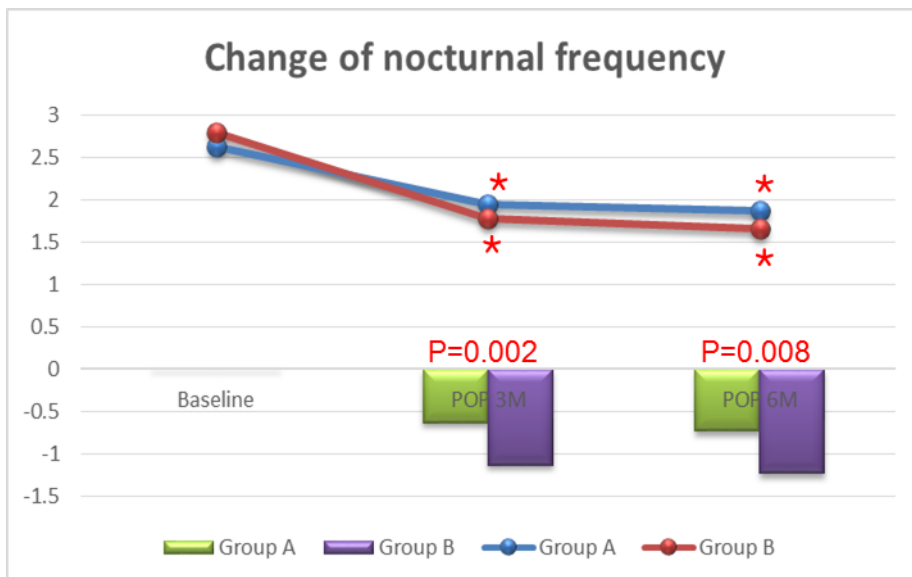
The mean age of total patients was  $70.3 \pm 6.7$  years, and mean prostate volume was  $52.5 \pm 23.1$ cc. There are no significant differences between 2 groups in preoperative NF ( $2.6 \pm 0.5$  vs.  $2.8 \pm 0.8$ ,  $p=0.064$ ) and NPI ( $43.8 \pm 7.2\%$  vs.  $44.1 \pm 7.6\%$ ,  $p=0.849$ ). At postoperative 3 months and 6 months, the reduction of NF was significantly larger in group B (3M,  $-0.6 \pm 0.8$  vs.  $-1.1 \pm 1.0$ ,  $p=0.002$ ; 6M,  $-0.7 \pm 0.9$  vs.  $-1.2 \pm 1.1$ ,  $p=0.008$ ). The Reduction of NPI value was also larger in group B (3M,  $-3.8 \pm 8.3\%$  vs.  $-7.1 \pm 9.1\%$ ,  $p=0.029$ ; 6M,  $-4.2 \pm 8.3\%$  vs.  $-7.6 \pm 7.3\%$ ,  $p=0.042$ ). The proportion of the patients who showed the improvement of nocturia were higher in group B (3M, 20.9% vs. 47.6%,  $p=0.001$ ; 6M, 32.1% vs. 49.3%,  $p=0.042$ ). The proportion of the patients who showed the improvement of NP was also significantly higher in group B (3M, 40.3% vs. 57.1%,  $p=0.045$ ; 6M, 37.7% vs. 58.0%,  $p=0.027$ ). On the multivariate analysis, the significant factors related to improvement of nocturia were surgical method (HoLEP compared to PVP, OR=4.281, 95%CI=1.723-10.637) and preoperative PSA (OR=1.173, 95%CI=1.011-1.362). The Factors related to improvement of NP were surgical method (OR=2.340, 95%CI=1.103-4.965) and preoperative NPI value (OR=1.098, 95%CI=1.030-1.171).

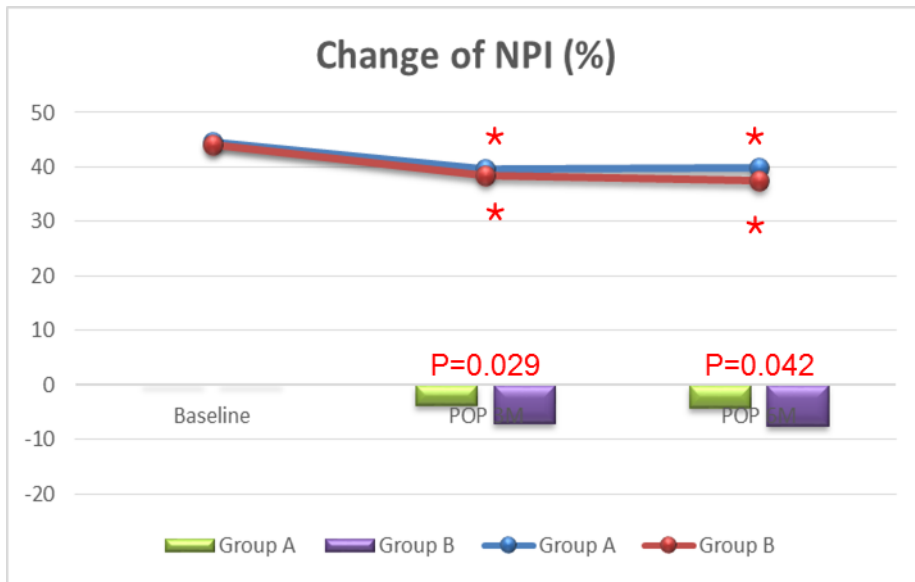
### Interpretation of results

Not only nocturnal frequency (NF) but also nocturnal polyuria index (NPI) was decreased after both surgeries for BPH. In, patients who received HoLEP showed more decrease of NF and NPI than those who underwent KTP-PVP. This difference might be caused by more elimination of adenoma following HoLEP than KTP-PVP.

### Concluding message

In this study, both nocturia and NP are improved after surgical treatment for BPH. The improvement was more remarkable in patients who underwent HoLEP, compared to KTP-PVP.





Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Institutional Review Board of Seoul National University Hospital **Helsinki:** Yes **Informed Consent:** Yes