

CORRELATIVE STUDY ON THE EFFECT OF EVIPROSTAT BETWEEN THE CLINICAL PARAMETERS AND OXIDATIVE STRESS (URINARY 8-OHDG) IN THE TREATMENT OF THE LOWER URINARY TRACT SYMPTOMS ASSOCIATED WITH BPH (BPH/LUTS) AND ON URINARY 8-OHDG CONTENT IN RABBIT BOO MODEL

Hypothesis / aims of study

Eviprostat a widely used phytotherapeutic agent for BPH in Japan and Europe, which consists of plant extracts from *Chimaphila umbellata*, *Populus tremula*, *Pulsatilla pratensis*, *Equisetum arvense* and wheat-germ oil¹⁾. A recent study showed that this drug has an anti-oxidative effect such as superoxide anion-scavenging activity in vitro²⁾. Therefore, we investigated the correlation of the effect of Eviprostat between clinical parameters and oxidative stress in patients with the lower urinary tract symptoms associated with BPH (LUTS/BPH). The effect of this drug on the oxidative stress in rabbits with bladder outlet obstruction (BOO) was subsequently examined.

Study design, materials and methods

Nine patients with LUTS/BPH (aged 49 to 76; mean age 61.3 years old) were enrolled in this study. All patients received Eviprostat (108 mg, t.i.d.) for four weeks. Before and after treatment with Eviprostat, patients were examined for the international prostate symptom score (I-PSS), quality of life (QOL) score, and urodynamic parameters (voiding volume, Qmax, post-void residual). The changes of urine 8-hydroxy-2'-deoxyguanosine (8-OHdG), a urinary biomarker for oxidative DNA damage³⁾, were also assessed to compare with the changes in clinical parameters. In an animal study, rabbits underwent partial outlet obstruction or sham operation. Eviprostat (54mg/kg/day) was treated to the BOO rabbits for 3 weeks. After 3 weeks of obstruction, the content of urine 8-OHdG was measured.

Results

The mean total I-PSS and the QOL score had tendency to decrease. No significant change was noted in terms of urodynamic parameters (voiding volume, Qmax, post-void residual). The oxidative stress was significantly decreased, elucidated by decreases of urine 8-OHdG. Compared with sham operated rabbits, BOO rabbits showed a marked augmentation of urine 8-OHdG content, which was reversed by Eviprostat treatment.

Interpretation of results

These results suggest that oxidative stress participates in the progressive deterioration of bladder function secondary to BPH in men and BOO animal model. The ameliorative effects of Eviprostat on the oxidative stress and clinical symptoms indicate the relationship between these parameters.

Concluding message

The short-term treatment with Eviprostat decreased oxidative stress, and this effect may contribute to the improvement of clinical symptoms in LUTS/BPH.

References

- 1) *Int. Urol. Nephrol.* 27, 61-6.
- 2) *Phytomedicine* (in press)
- 3) *Transplant Proc.* 38, 2014-5.

FUNDING: None

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

HUMAN SUBJECTS: This study was approved by the Kinki University School of Medicine and followed the Declaration of Helsinki Informed consent was obtained from the patients.