

## PREDICTIVE FACTORS FOR EFFECTIVE THERAPEUTIC RESPONSE TO ALPHA-BLOCKER THERAPY IN MALE PATIENTS WITH NOCTURIA

### Hypothesis / aims of study

Lower urinary tract symptoms (LUTS) in men refer to dysfunction in voiding, storage or both. Nocturia, in particular, has been shown adversely impact on quality of life and associated with an increased risk of morbidity and even mortality in elderly. In this study, we evaluate the efficacy of adrenoceptor antagonist ( $\alpha$ -blocker) in reducing nocturia episodes and identify factors predicting a successful outcome for nocturia in men with LUTS.

### Study design, materials and methods

A total of 348 men with LUTS were enrolled in this study. All participants were treated with a daily dose of  $\alpha$ -blocker for 1 month. Subjects were then divided into 2 groups based on their number of reduction (NOR) in nocturia episodes after treatment: NOR <1 (non-responder) and NOR  $\geq$  1 (responder). Patients were evaluated at baseline and at the end of 1-month period using uroflowmetry, post-voiding residual (PVR), voided volume (VV), voiding efficiency (VE= VV/ [VV+PVR]), the International Prostate Symptom Score (IPSS), nocturia episodes and global response assessment (GRE).

### Results

In 348 men, there were 156 patients (44.8%) reported NOR  $\geq$  1 after taking 1-month daily dose of  $\alpha$ -blocker. Baseline characteristics between non-responder and responder were summarized in Table 1. Those who responded well to  $\alpha$ -blockade therapy have lower Qmax, worse storage symptoms and more nocturia episodes at baseline. VE in all patients were significantly improved at 1-month period. Those with greater NOR in nocturia episodes have lower VE at baseline (Table 2).

### Interpretation of results

Nocturia was previously thought to be a storage symptom, however derived from this study, by improving VE, there can be a significant reduction in nocturia episodes. This could imply the fact that the causes of nocturia in men with LUTS is rather heterogenous and complex.

### Concluding message

In this study, we have shown treatment of adrenoceptor antagonist can reduce nocturia episodes in men with LUTS. Worse storage symptoms, greater number of nocturia episodes, lower Qmax and poor VE at baseline could have better predicitive value for favourable outcome.

Table.1 Comparative baseline characteristics between non-responder and responder

Parameters	Non-responder (NOR <1; n=192)	Responder (NOR $\geq$ 1; n=156)	P-value
Qmax	11.6 $\pm$ 6.78	9.83 $\pm$ 5.15	0.01
VV	220 $\pm$ 140	198 $\pm$ 132	0.15
PVR	50.7 $\pm$ 57.5	51.3 $\pm$ 57.7	0.93
IPSS T	14.3 $\pm$ 7.17	16.7 $\pm$ 7.51	0.00
IPSS S	5.14 $\pm$ 3.11	6.44 $\pm$ 3.26	0.00
IPSS E	9.13 $\pm$ 5.43	10.3 $\pm$ 5.81	0.06
TPV	44.6 $\pm$ 25.8	48.8 $\pm$ 25.0	0.13
Nocturia episodes	2.93 $\pm$ 1.33	4.01 $\pm$ 0.98	0.00

Qmax= maximal flow rate; VV= voided volume; PVR= post-voiding residual; IPSS T= total International Prostate Symptom Score; IPSS-S= International Prostate Symptom Score- storage; IPSS-E: International Prostate Symptom Score- empty; TPV= total prostate volume; NOR= number of reduction

Table.2 Voiding efficiency at baseline and 1-month treatment period between non-responder and responder groups

	Non-responder (NOR <1; n=192)	Responder (NOR $\geq$ 1; n=156)	Responder (NOR $\geq$ 2; n=55)	p-value
VE at baseline	0.80 $\pm$ 0.20	0.80 $\pm$ 0.20	0.72 $\pm$ 0.25	0.03
VE at 1-month	0.84 $\pm$ 0.17	0.84 $\pm$ 0.17	0.81 $\pm$ 0.20	0.30
p-value	0.00	0.00	0.00	

VE= voiding efficiency; NOR= number of reduction

### Disclosures

**Funding:** none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Research Ethics Committee, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation **Helsinki:** Yes **Informed Consent:** No