

## CLINICAL SIGNIFICANCE OF PROSTATIC-URETHRAL ANGULATION ON THE TREATMENT OUTCOME OF PATIENTS WITH SYMPTOMATIC BENIGN PROSTATIC HYPERPLASIA TREATED WITH TAMSULOSIN HYDROCHLORIDE

### Hypothesis / aims of study

To evaluate the impact of the prostatic-urethral angulation (PUA) on the treatment efficacy of selective alpha-1A receptor blocker in male patients with lower urinary tract symptoms secondary to benign prostatic hyperplasia (LUTS/BPH).

### Study design, materials and methods

A total of 80 patients with LUTS/BPH and with mean age 53.3±6.3 (range 47-70) were included in our prospective comparative study. The patients were classified into 2 groups as a consecutive cases 40 in each one depending on the PUA either ≤ 35° (group A) or >35° (group B). PUA and different prostatic parameters were measured using transrectal ultrasound. Prostate-specific antigen (PSA), the International Prostate Symptom Score and quality of life score (IPSS/QoL score), maximum flow rate (Qmax), and postvoid residual (PVR) volume were compared between the groups. The clinical significance of PUA was evaluated after 8 weeks of medical treatment with tamsulosin hydrochloride 0.4 mg daily.

### Results

Baseline evaluation (pre-treatment) for both groups were comparable to each other with no clinically significant difference regarding age, PSA, IPSS/QoL score, Qmax and PVR volume (P-value >0.05). Comparison of parameters after 8 weeks showed that tamsulosin hydrochloride improved the total IPSS and all subscores (P<0.001), QoL (P=0.001), Qmax (P=0.002), and PVR (P=0.04) in group A (Table 1).

### Interpretation of results

PUA is a new measurement that could be a causal factor for BPH. The prostatic urethra is a bent tube and by applying the concept of fluid dynamics to the micturition process in the prostatic urethra, some energy loss could occur during this process and hence decreasing the velocity of urine. Looking at the present data of little response to medical treatment among those patients with higher PUA >35°, we suggest that patients with higher PUA may offered another line of treatment and to make another choice after explaining the expected results with the patients.

### Concluding message

Tamsulosin hydrochloride appears to be less effective in improving IPSS/QoL score, Qmax and PVR in patients with lager PUA. The PUA might be a predictor for the treatment efficacy of α-blockers and more studies are warranted in the future before the final conclusion.

**Table 1: Intragroup and intergroup comparisons of subjective (IPSS score) and objective (uroflometry) parameters after 2 months of treatment with tamsulosin hydrochloride**

| Subjective/<br>objective<br>parameters | Group A<br>(Mean ± SD) |                    |              | Group B<br>(Mean ± SD) |                    |             | Post-<br>treatment<br>P-value |
|--|------------------------|--------------------|--------------|------------------------|--------------------|-------------|-------------------------------|
|  | Baseline               | After<br>treatment | P-<br>value  | Baseline               | After<br>treatment | P-<br>value |                               |
| <b>Total IPSS score :</b>              | 17.95 ± 3.61           | 11.85 ± 2.43       | <b>0.000</b> | 15.54 ± 3.53           | 14.34 ± 3.71       | 0.9         | <b>0.001</b>                  |
| - Voiding symptoms                     | 7.84 ± 2.2             | 5.93 ± 2.12        | <b>0.001</b> | 6.88 ± 1.72            | 6.10 ± 1.43        | 0.27        | <b>0.03</b>                   |
| - Storage symptoms                     | 8.48 ± 2.33            | 5.95 ± 1.89        | <b>0.001</b> | 7.35 ± 1.64            | 5.53 ± 1.79        | 0.03        | <b>0.01</b>                   |
| - QoL score                            | 3.17 ± 1.79            | 1.97 ± 1.82        | <b>0.001</b> | 3.37 ± 0.96            | 3.12 ± 1.20        | 0.42        | <b>0.006</b>                  |
| <b>Uroflometry:</b>                    |                        |                    |              |                        |                    |             |                               |
| Qmax (ml/s)                            | 9.75 ± 1.34            | 12.95 ± 1.72       | <b>0.002</b> | 10.37 ± 1.43           | 11.10 ± 1.56       | 0.06        | <b>0.05</b>                   |
| PVR (ml)                               | 69.66 ± 10.49          | 58.98 ± 12.64      | <b>0.04</b>  | 66.12 ± 11.76          | 61.12 ± 12.63      | 0.32        | <b>0.002</b>                  |

### Disclosures

**Funding:** NONE **Clinical Trial:** Yes **Registration Number:** Ethical Committee Board - Tanta Faculty of Medicine **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Ethical Committee Board - Tanta Faculty of Medicine **Helsinki:** Yes **Informed Consent:** Yes