

DO INTRAVESICAL PROSTATIC PROTRUSIONS AFFECT THE CLINICAL OUTCOMES OF DUTASTERIDE IN PATIENTS WITH LOWER URINARY TRACT SYMPTOMS SUGGESTIVE OF BENIGN PROSTATIC ENLARGEMENT?

Hypothesis / aims of study

Recent articles have demonstrated that intravesical prostatic protrusion (IPP) can identify bladder outlet obstruction (BOO) in patients with lower urinary tract symptoms suggestive of benign prostatic enlargement (LUTS/BPE). As IPP increases, the degree of BOO also increase. A cut off value of 10mm of IPP has been reported as a good predictive value to define BOO. Moreover, IPP exceeding 10mm seems to more frequently respond poorly to medical treatment with tamsulosin among patients with LUTS/BPE [1]. The aim of this study is to assess the difference of prostate morphology (including the IPP) as measured by abdominal ultrasonography (AUS) on the clinical outcomes of dutasteride over a six month period.

Study design, materials and methods

Ninety-two patients who have received treatment with alpha-1 blockers for over three months were enrolled in this study. The total prostate volume (PV) was more than 30 ml in all patients. We assessed the international prostate symptom score (IPSS), the quality of life (QoL) score, maximum urine flow rate (Qmax) as determined by uroflowmetry, voided volume (VV), post void residual urine volume (PVR), PSA, PV and IPP. PV was calculated using the formula height (H) * width (W) * length (L) * 0.52, as measured by AUS. The IPP, as measured from a sagittal view, was defined by the distance from the tip of the prostatic protrusion into the vesical lumen to the bladder neck.

We divided the patients into two groups according to IPP: Group A \leq 10 mm (n = 34) and Group B $>$ 10 mm (n = 58). All patients received a treatment of 0.5 mg of dutasteride once daily for six months. They were evaluated at the end of this period. Clinical outcomes between these two groups were compared in IPSS, QoL score, Qmax, VV, PVR, PSA, PV, H, W, L and IPP.

Results

The patients had a mean age of 74.0 years (ranged from 55 - 91 years).

The mean PV was 60.9 ml (group A: 46.7 ml, group B: 69.2 ml, $P < 0.01$) and the mean IPP was 1.22 cm (group A: 0.58 cm, group B: 1.60 cm, $P < 0.01$). There were significant differences between the two groups.

The mean H was 4.26 cm (group A: 3.85 cm, group B: 4.50 cm, $P < 0.01$) the mean W was 5.39 cm (group A: 5.24 cm, group B: 5.49 cm, $P = 0.12$) and the mean L was 4.80 cm (group A: 4.33 cm, group B: 5.07 cm, $P < 0.01$).

The mean IPSS was 13.4 (group A: 13.8, group B 13.2), the mean QoL score was 3.4 (group A: 3.5, group B: 3.3), the mean Qmax was 8.6 ml/s (group A: 9.3 ml/s, group B: 8.2 ml/s), the mean VV was 149.8 ml (group A: 166.6 ml, group B: 139.9 ml), the mean PVR was 71.4 ml (group A: 67.3 ml, group B: 73.9 ml) and the mean PSA value was 4.57 ng/ml (group A: 3.85 ng/ml, group B: 4.99 ng/ml). There were no significant differences between the two groups.

After six months of dutasteride treatment, the mean PV decreased 20.2% (group A: 26.0%, group B: 16.8%, $P = 0.03$), the mean IPSS decreased 1.3 (group A: 0.7, group B 1.6, $P = 0.47$), the mean QoL score decreased 0.3 (group A: 0.1, group B: 0.4, $P = 0.27$), the mean Qmax increased 1.13 ml/s (group A: 1.14 ml/s, group B: 1.13 ml/s, $P = 1.00$), the mean VV decreased 3.3 ml (group A: 9.7 ml, group B: -0.5 ml, $P = 0.56$), the mean PVR decreased 5.9 ml (group A: 12.9 ml, group B: 1.8 ml, $P = 0.66$) and the mean PSA value decreased 43.1% (group A: 35.1%, group B: 47.8%, $P = 0.08$). There were no significant differences between the two groups. The mean IPP increased 0.19 cm in group A and decreased 0.01 cm in group B ($P = 0.02$). Whereas, the mean H decreased 5.7% (group A: 7.0%, group B: 4.9%, $P = 0.43$), the mean W decreased 10.0% (group A: 12.6%, group B: 8.5%, $P = 0.07$), the mean L decreased 6.8% (group A: 10.1%, group B: 4.9%, $P = 0.06$). There were no significant differences between the two groups, but in H, W and L, group A showed a better response to medical treatment with dutasteride. Comparing the IPP, H, W and L, IPP showed a poor response to the treatment with dutasteride.

Interpretation of results

BOO is caused not only by total prostatic volume but also by configuration and/or deformity (mainly IPP) of the prostate [1]. A cut off value of 10 mm of IPP has been reported to offer good sensitivity in defining of BOO [2]. In a recent retrospective study on the role of IPP as a predictive factor for response to treatment, only IPP was shown to be significantly related to whether IPSS and Qmax were both improved [3].

This study shows that the higher the IPP value, the lower the response of the PV decrease rate (H, W and L, respectively) to medical treatment with dutasteride in large prostate patients. In addition, IPP was not lowered through treatment with dutasteride. Furthermore, there were no significant differences in the subjective symptoms (such as the IPSS and QoL scores) or in the objective findings (such as the Qmax, VV, PVR and PSA) by medical treatment using dutasteride.

Concluding message

The presence of IPP in patients LUTS/BPE shows a lowered response of PV (including H, W and L, respectively) after six months of medical treatment with dutasteride. Dutasteride may be more effective in patients absent of IPP or with mild IPP. A larger patient sample study is needed to identify the clinical implications of IPP in LUTS/BPE management.

References

1. Urology. 2013;81:859-863
2. BJU Int. 2003;91:371-374
3. Korean J Urol. 2012;53:92-97

Disclosures

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