

## PROSTATIC URETHRAL ANGLE DOES NOT AFFECT THE SEVERITY OF URINARY SYMPTOM AND PEAK FLOW RATE IN MEN WITH LUTS/BPH; A MULTICENTER, PROSPECTIVE STUDY

### Hypothesis / aims of study

Transrectal ultrasonography (TRUS) is a non-invasive modality widely used in urology on an outpatient basis to measure the volume and anatomical structure of the prostate. Several researchers have instead emphasized the positive relationship between male LUTS severity and other prostatic anatomical factors such as intravesical prostatic protrusion (IPP), transitional zone index (TZI), and prostatic urethral angulation. Herein, we evaluate the effects of prostatic anatomical factors including the total PV (TPV), transitional zone volume (TZV), IPP, and PUA on LUTS and the peak flow rate (Q<sub>max</sub>) in patients.

### Study design, materials and methods

A total of 743 patients had undergone TRUS from May 2014 to September 2014 at 4 centers in Daegu and Gyeongbuk province. Medical records were obtained from a prospectively maintained database of first-visit male patients with LUTS/BPH. During this period, 293 patients were registered in our database. Exclusion criteria for subjects included (1) bladder or prostate cancer, (2) uncontrolled diabetes mellitus, (3) neurologic disease that could influence voiding symptoms, (4) history of previous lower urinary tract surgery, (5) urogenital infections, or (6) unmeasurable PUA due to severe calcification or a large volume. The TPV, transitional zone volume (TZV), intravesical prostatic protrusion (IPP), and prostatic urethral angle (PUA) were measured by transrectal ultrasonography. LUTS were evaluated using the International Prostate Symptom Score (IPSS) questionnaires. Uroflowmetric measurements were also made. The PUA was defined as the angle formed by 2 rays of both proximal and distal prostatic urethra on the midsagittal plane image, and which was taken with the posterior wall of the prostate positioned as flat as possible to minimize the influence of pressure from the rectal probe.

### Results

In Simple linear regression, PUA ( $r^2 = 0.002$ ,  $P=0.490$ ), IPP ( $r^2 = 0.001$ ,  $P=0.781$ ) and TZV ( $r^2 = 0.007$ ,  $P=0.151$ ) were not positively correlated with IPSS. In the subgroup analysis of the IPSS, PUA, and TZV also were not significantly associated with the voiding symptom domain and storage symptom domain ( $r^2 = 0.001$ ,  $P=0.535$ ,  $r^2 = 0.013$ ,  $P=0.053$ ), ( $r^2 = 0.001$ ,  $P=0.558$ ,  $r^2 = 0.001$ ,  $P=0.808$ ). PUA significantly positively associated with Q<sub>ave</sub> but not Q<sub>max</sub> ( $r^2 = 0.017$ ,  $P=0.041$ ). IPP significantly negatively associated with Q<sub>max</sub> ( $r^2 = 0.023$ ,  $P=0.017$ ). In a multivariate linear regression analysis, PUA ( $P=0.495$ ), TPV ( $P=0.385$ ), IPP ( $P=0.130$ ) and TZV ( $P=0.561$ ) were not significantly associated with IPSS. And PUA ( $P=0.180$ ), TPV ( $P=0.723$ ), IPP ( $P=0.085$ ) and TZV ( $P=0.964$ ) were not significantly associated with Q<sub>max</sub>.

### Interpretation of results

PUA has not a significant association with symptom severity and Q<sub>max</sub> among prostatic anatomical factors analyzed in men with LUTS/BPH.

### Concluding message

But PUA and IPP were correlated with Q<sub>ave</sub> and Q<sub>max</sub>, respectively. Furthermore, the effect of PUA on urinary symptom and uroflowmetry needs to be investigated.

### References

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### Disclosures

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