

## ULTRASOUND-ESTIMATED BLADDER WEIGHT (UEBW) IS NOT RELATED TO SEVERITY OF POST-VOIDING RESIDUAL URINE IN MAN WITH LOWER URINARY TRACT SYMPTOMS (LUTS)

### Hypothesis / aims of study

Recently, UEBW was promising as a non invasive tool to evaluate bladder outlet obstruction objectively. More importantly, UEBW was able to predict infravesical obstruction when evaluated by pressure-flow studies with a diagnostic accuracy as high as 86.2%, using a cut off value of 35.0g. Previous study had reported there was a statistically significant correlation between UEBW and the AUA symptom score, post-voiding residual urine. The frequency of abnormal UEBW (35.0g or more) increased significantly with post-voiding residual urine. In our study, we evaluate the relationship of UEBW with severity of post-voiding residual urine in a man with LUTS.

### Study design, materials and methods

UEBW was determined non-invasively with portative ultrasound device; BladderScan<sup>®</sup> BVM 6500 (Diagnostic Ultrasound, Bothell, WA), which produces three-dimensional V-mode images. This device uses a focused 3.7 MHz single-element transducer steered mechanically to acquire a 120-degree cone of V-mode ultrasound data. For UEBW measurement, the required bladder volume is between 200mL and 400mL. In a total of 77 men aged 50 years or more evaluated with IPSS, uroflowmetry and UEBW. These men were divided into 2 groups (residual urine  $\leq$  100ml and residual urine > 100 ml). 52 men (aged 67.21  $\pm$  7.92, median 66.50) were in group I and 21 men (aged 68.29  $\pm$  9.34, median 68.00) were in group II.

### Results

Comparison of these two groups, maximal flow rate was 14.65  $\pm$  6.77, median 14.00 and 9.14  $\pm$  5.90, median 7.00 ml/sec; P<0.00. Average flow rate was 7.50  $\pm$  4.33, median 7.00 and 4.38  $\pm$  2.91, median 3.00 ml/sec, P<0.00. IPSS was 13.54  $\pm$  7.75 and 15.90  $\pm$  7.62; P>0.05. UEBW was 47.42  $\pm$  7.76 g; median 46.50 and 48.05  $\pm$  11.75g; median 45.00; p>0.05.

### Interpretation of results

UEBW is not related to severity of post-voiding residual urine in man with LUTS. On the contrary, uroflowmetry shows significant difference between these two groups. Possibly, the causes of post-voiding residual urine are complicated and therefore, influence the result UEBW. The result is different from some reports published previously (1,2,3).

### Concluding message

From our preliminary studies, we concluded that UEBW is not related to severity of post-voiding residual urine and pressure-flow studies is still necessary for the patients with post-voiding residual urine in order to differentiate bladder outlet obstruction from neurogenic bladder.

### References

1. Urology(1998) 51; 722-729.
2. Hinyokika Kyo(2004) 50(1): 7-14.
3. Adv Exp Med Biol(2003) 539; 311-5.

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<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>No</b>
<b><i>This study did not require ethics committee approval because</i></b>	<b>Ultrasound-estimated bladder weight was determined non-invasively and regular procedure.</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>No</b>