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® 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 ≤ 100ml and residual urine > 100 ml). 52 men (aged 67.21 ± 7.92, median 66.50) were in group I and 21 men (aged 68.29 ± 9.34, median 68.00) were in group II.

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

| Specify source of funding or grant | None. |
| Is this a clinical trial? | No |
| What were the subjects in the study? | HUMAN |
| This study did not require ethics committee approval because | Ultrasound-estimated bladder weight was determined non-invasively and regular procedure. |
| Was the Declaration of Helsinki followed? | Yes |
| Was informed consent obtained from the patients? | No |