

## VARIABILITY IN POST-VOID RESIDUAL URINE OF PRESCHOOL CHILDREN

### Hypothesis / aims of study

To report the variability in post-void residual urine (PVR) of healthy preschool children.

### Study design, materials and methods

The kindergarten children went to the toilets and had uroflowmetry tests when he or she had normal desire to void. The post-void residual urine (PVR) was assessed by real-time ultrasound within 5 minutes after voiding if the voided volume (VV) was more than 50ml. The PVR was estimated by the equation of height \* width \* depth \* 0.52 ml. Bladder capacity (BC) is defined as "VV+PVR", and expressed as percentage of expected bladder capacity (EBC), i.e. (age +1)\*30 ml. Variability in consecutive micturitions (VV >50 ml) were assessed with Pearson's correlation method.

### Results

A total of 188 children (87 boys and 101 girls) with 355 uroflowmetry curves and PVR were eligible for analysis. Mean and median PVR were 14.7±23.6ml, 7.5ml, respectively. The Pearson's correlation coefficient between BC and PVR was 0.52 (P<0.001). Pearson's correlation coefficient for PVR between consecutive micturitions (VV >50ml) ranged from r = 0.36 to r = 0.62 (all p<0.001).

### Interpretation of results

Great variability of post-void residual urine was noted in the healthy preschool children. Our results suggested that preschool children did not always empty the bladder completely on each micturition. Although there is statistically significant correlations of PVR between voids, the Pearson's correlation coefficient only ranged from r = 0.36 to r = 0.62. Repeated check of PVR was indicated in children with abnormally high PVR.

### Concluding message

Bladder capacity significantly affected the PVR. Significant intra-individual variations of PVR were observed. To judge if PVR is within normal limit, bladder capacity should be considered. Children with bladder fullness in excess of their bladder capacity may have abnormally high PVR.

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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>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Ehic Committee at Buddhist Tzuchi General Hospital, Taipei Branch</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>Yes</b>