

INCOMPLETE BLADDER EMPTYING IS ASSOCIATED WITH FEBRILE URINARY TRACT INFECTION IN NON-TOILET TRAINED CHILDREN

Hypothesis / aims of study

Using four-hour voiding observation (4H-observation) to investigate the bladder function in pre-toilet trained children with and without febrile urinary tract infections (f-UTI).

Study design, materials and methods

We enrolled children with f-UTI (group 1) from pediatric nephrology and urology clinics, and children without f-UTI (group 2) from infant-care center for 4H-observation. Group 1 Children underwent 4H-observation at least one month after treatment of UTI. The voided volume and post-void residual urine (PVR) were measured by weighing the diaper and suprapubic ultrasound, respectively. Parameters including gender, fluids intake, voiding frequency, voided volume and PVR were recorded and compared between groups. Interrupted voidings was defined as defined as 2 or 3 voidings within 10 minutes. Voiding efficiency was defined as voided volume/(voided volume + PVR)

Results

Mean age Group 1 (n=64) and Group 2 (n=56) were 10.6±7.5 vs. 10.2±5.1 months, respectively (p=0.70). Group 1 children had significantly higher voiding frequency (3.0±1.2 vs. 2.6±0.9 times, p=0.04), average PVR (14.5±14.2 vs. 8.9±8.8 ml, p<0.01) and lower voiding efficiency (71.2±20.5 vs. 80.2±18.5%, p=0.01) than Group 2 children.

Interpretation of results

ROC curve analysis showed the optimal cut-off value for PVR and voiding efficiency to differentiate Group 1 and 2 children were 10 ml and 80%, respectively. Group 1 children had significantly more repeat elevated PVR (>10ml) and repeat low voiding efficiency (<80%) than Group 2 children (44.8% vs. 22.4%, p=0.03; 62.0% vs. 28.6%, p<0.01, respectively).

Concluding message

Children with febrile urinary tract infections are associated with more bladder dysfunctions when compared with normal control.

References

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Disclosures

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