

MP56-05 Voiding Pattern of Nontoilet-Trained Filipino Children with Recurrent Urinary Tract Infection and Without Urinary Tract Infection

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Introduction and Objectives:

Knowing the voiding patterns of patients with recurrent urinary tract infection (UTI) may help clinicians in understanding the etiology and presentation of voiding dysfunction and help in treating these patients. Therefore, identification of children who were at risk of recurrent UTI is an important issue. Thus the objectives of this study were to describe and to compare the voiding pattern of nontoilet-trained patients with recurrent UTI and without UTI.

Methods:

A total of 110 Filipino children divided into two groups of 55 each were included. R-UTI group defined consisted of patients aged between 2 months to 3.99 years old presenting with recurrent UTI. No-UTI group consisted of children aged 2 months to 3.99 years old without urinary symptoms and without history of urinary tract infection. Parents completed a 72-hour bladder chart at home. All participants underwent a 4-hour voiding observation. Bladder wall thickness, post-void residual (PVR), number of void, average voided volume, and voiding pattern were recorded. Results were analyzed using independent t-test, chi square test and Fischer test.

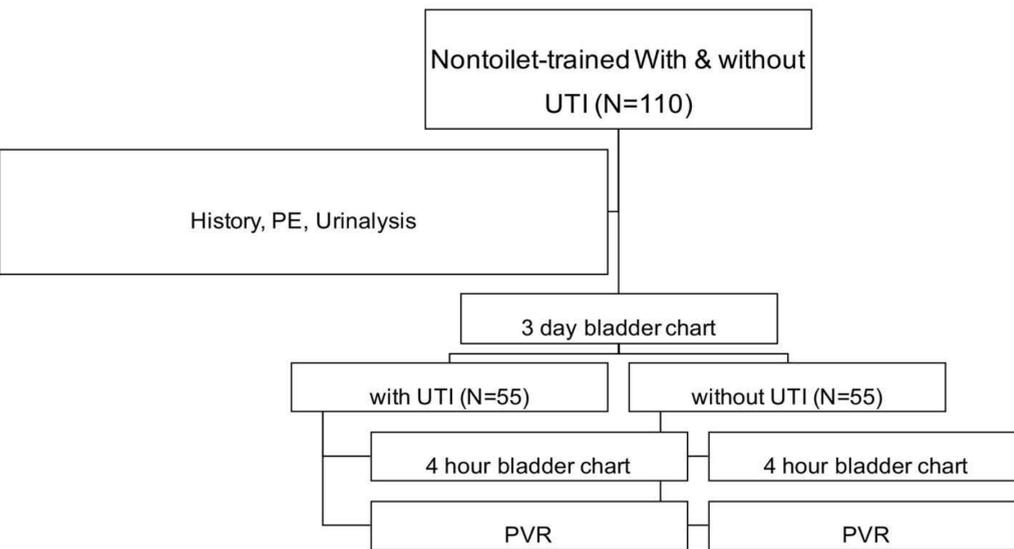


Figure 1 - Algorithm of Methodology of Patients

Results:

The mean age of the R-UTI group was 1.19 + 0.65 and the No-UTI group 1.16 + 068. There were 30 females each in R-UTI group and No-UTI group and 25 males each in R-UTI group and No-UTI group.

CHARACTERISTICS	NON-TOILET TRAINED		
	R-UTI (n=55) N%	No-UTI (n=55) N%	P VALUE
DEMOGRAPHICS			
Age (in years), mean	1.19 ± 0.65	1.16 ± 0.68	0.7982
Age categories			
<1 year old	15 (27)	15 (27)	1.000
1 - <2 years old	25 (45)	25 (45)	
2 - <3 years old	13 (24)	13 (24)	
3 - <4 years old	2 (4)	2 (4)	
Sex			
Female	30 (55)	30 (55)	1.000
Male	25 (45)	25 (45)	
Estimated Bladder Capacity	78.90 ± 21.06	75.94 ± 33.83	0.5824

Table 1 - Demographics Profile of Patients

The mean number of void for R-UTI group was 3.35x/4 hour and No-UTI group was 3.15x/4 hour which were comparable. The mean voided volume was significantly higher in the R-UTI group vs No-UTI group (57.55±29.47 mL vs 29.10 + 20.13 mL, p<0.00001). The mean maximum voided volume was also significantly higher in the

CHARACTERISTICS	NON-TOILET TRAINED		
	W/ UTI (n= 55) N%	W/O UTI (n=55) N%	P VALUE
CLINICAL PROFILE			
Constipation^a			
With	4 (7)	1 (2)	0.170
Without	51 (93)	54 (98)	
Number of times voided, mean	3.35 ± 2.19	3.15 ± 1.54	0.5808
Average voided volume, mean^c	57.55 ± 29.47	29.10 ± 20.13	<0.00001*
Maximum voided volume, mean^c	82.42 ± 44.38	39.60 ± 29.60	<0.00001*

Table 2 – Constipation, Voiding Pattern of Nontoilet-Trained Patients

Mean bladder thickness was comparable between the two groups (3.23+ 0.97 cm R-UTI vs 3.08 + 0.82 cm No-UTI). Mean bladder capacity was significantly higher in the R-UTI group than the No-UTI group (60.82 + 27.65 mL vs 33.58 + 21.66 mL p<0.0001).

CHARACTERISTICS	NON-TOILET TRAINED		
	W/ UTI (n= 55) N%	W/O UTI (n=55) N%	P VALUE
CLINICAL PROFILE			
Bladder thickness, mean ^c	3.23 ± 0.97	3.08 ± 0.82	0.3785
Bladder capacity, mean^c	60.82 ± 27.65	33.58 ± 21.66	<0.0001*
PVR, mean^c	7.88 ± 7.48	4.92 ± 3.19	0.0082*
PVR interpretation^a			
Significant	12 (22)	5 (9)	0.065
Not significant	43 (78)	50 (91)	
PVR % EBC, mean ^c	10.19 ± 9.41	7.75 ± 6.14	0.1106

Table 3 – Bladder Profile of Nontoilet-Trained Patients

ROC curve analysis showed that the optimal cutoff values for Post-void residual volume (PVR) to differentiate R-UTI and No-UTI infants was 5 mL. PVR was significantly higher, 7.88 + 7.48 mL of R-UTI group and 4.92 + 3.19 mL in No-UTI group.

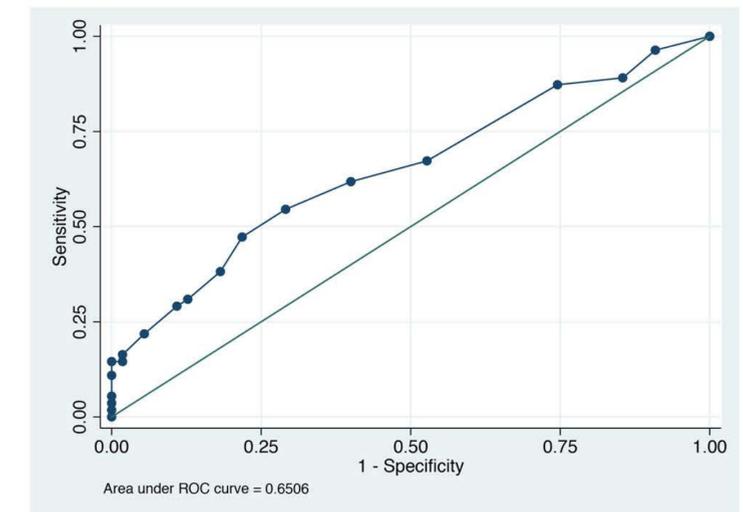


Figure 2 – ROC Curve Analysis of Average PVR

Conclusion:

Non-toilet trained children with recurrent UTI were associated with higher rates of voided volume, maximum voided volume and bladder capacity and post-void residual urine. Elevated PVR in 4-hour voiding observation could be defined as > 5mL in nontoilet-trained Filipino children.