

A 3-day voiding diary is a useful tool in evaluation of severe primary nocturnal enuresis in children

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Aims of study

We aim to investigate the feasibility and clinical significance of a 3-day voiding diary (VD) for assessing severe primary nocturnal enuresis (PNE) in children.

Methods

This multicenter prospective study was conducted on 141 children (aged 6–15 years) diagnosed with severe enuresis (≥ 4 nights/week) according to the International Children’s Continence Society (ICCS) criteria, from January to December 2023. Participants were divided into non-monosymptomatic enuresis (NMNE) and monosymptomatic enuresis (MNE) groups based on the presence or absence of daytime lower urinary tract symptoms. Each child completed a 2-week VD, from which 3-day VD data (Friday, Saturday, and Sunday) were extracted. VD parameters between the 2-week and 3-day VD were compared.

Results

A total of 128 children completed the 2-week VD (87 MNE, 41 NMNE). Among the 87 MNE patients, 51 were male and 36 were female, with a mean age of 9.20 ± 2.193 years (range: 6-14 years). The 41 NMNE patients included 21 males and 20 females, with a mean age of 9.95 ± 2.674 years (range: 6-15 years). No statistically significant differences were observed between the 2-week and 3-day VD in the following parameters (Table 1 and Table 2).

Table 1. Comparison of 2-week and 3-day VD parameters in children with MNE (n=87)

VD parameters	2w	3d	t	P
Daytime				
Average voiding frequency	4.8±1.1	4.8±1.0	0.532	0.596
Average voided volume/EBC	0.7±0.1	0.7±0.1	-0.781	0.437
Average MVV	268.4±82.2	271.3±82.0	1.371	0.174
Average MVV/EBC	0.9±0.2	0.9±0.2	1.724	0.088
Night				
Average TVV	325.1±97.0	322.4±97.2	-1.260	0.211
Average TVV/EBC	1.1±0.3	1.1±0.3	-1.322	0.190

Abbreviation: EBC, Expected bladder capacity; MVV, Maximum voided volume; TVV, Total nocturnal voided volume.

Table 2. Comparison of 2-week and 3-day VD parameters in children with NMNE (n=41)

VD parameters	2w	3d	t	P
Daytime				
Average UI frequency	0.8±0.6	0.6±0.7	-1.369	0.186
Average voided frequency	6.7±2.4	6.5±2.3	-0.679	0.505
Average voided volume/EBC	0.7±0.1	0.7±0.1	-0.575	0.572
Average MVV	248.1±78.0	252.3±82.4	1.063	0.300
Average MVV/EBC	0.9±0.2	0.9±0.2	1.007	0.326
Night				
Average TVV	311.1±86.5	309.6±84.4	-0.305	0.763
Average TVV/EBC	1.1±0.3	1.1±0.3	-0.379	0.709

Abbreviation: UI, urinary incontinence

Meanwhile, positive correlations were found between the 3-day and 2-week VD data for average voided volume (AVV) in both MNE ($r = 0.876$, $P < 0.05$) and NMNE groups ($r = 0.801$, $P < 0.05$).

Conclusion

A 3-day VD might replace the 2-week VD for evaluating both severe MNE and NMNE in children and guide personalized clinical management.