

RADIONUCLIDE VOIDING PATTERNS IN CHILDREN WITH PRIMARY MONOSYMPTOMATIC AND NON-MONOSYMPTOMATIC NOCTURNAL ENURESIS

Aims of Study

Primary monosymptomatic nocturnal enuresis (PMNE) defines as having never achieved full night-time continence while primary non-monosymptomatic nocturnal enuresis (PNMNE) characterized with additional daytime micturating problems, such as urgency, postponement, frequency and sometime daytime wetting. The aim of this study was to evaluate bladder function by means of indirect radionuclide cystography (IRNC) in children with PMNE and PNMNE and to investigate whether IRNC can separate children with two different forms of nocturnal enuresis.

Methods

The study enrolled 85 children with nocturnal enuresis, 61 boys and 24 girls aged between 6-11 years of whom 43 suffered from PMNE and 42 from PNMNE. Control group was made of 50 age matched healthy children, 6-12 years old, without any symptoms of lower urinary tract dysfunction. The dynamics of the bladder emptying were studied after intravenous injection of 37 MBq/10kg/b.w. DTPA in the posterior view collecting ninety 2-seconds frames during voiding (1,2). The parameters evaluated were: functional bladder capacity (FBC), residual urine (RU), voiding time (VT), average flow rate (AFR), peak flow rate (PFR) and ejection fraction (EF).

Results

Table 1 presents bladder function parameters obtained by means of IRNCG in children with PMNE and PNMNE in respect the control values.

Table 1. Bladder function by means of IRNC in children with PMNE and PNMNE.

Groups	N ^o	VT (s)	RU (%)	FBC (%)	AFR (ml/s)	PFR (ml/s)	EF (%)
CG	50	18±2	5±2	99±6	17±3	23±3	96±1
PMNE	43	19±3	6±2	101±7	16±2	23±2	95±1
PNMNE	42	19±3	12±8 ^{a,b}	81±20 ^{a,b}	12±3 ^{a,b}	18±2 ^{a,b}	89±5 ^{a,b}

vs. CG: ^ap<0.001; vs. PMNE: ^bp<0.001

Bladder function parameters obtained in children with PMNE did not differ significantly from the values found in healthy children. However markedly reduction of FBC, AFR, PFR and EF as well as significantly higher value for RU were detected in children with PNMNE, even in respect to children with PMNE.

Conclusions

In summary, our results show that IRNC allows the differentiation between wetting children into distinct subgroups. While children with pure monosymptomatic nocturnal enuresis found to have normal voiding pattern, children with nocturnal enuresis and additional day-time symptoms found markedly disturbed bladder function parameters. Indirect radionuclide cystography was found as a simple, noninvasive method, performed in physiological manner which allows a reliable separation of voiding patterns in patients with PMNE and PNMNE and can be used as a screening method in differentiation between two different forms of bedwetters.

References

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