#398 Efficacy and safety of desmopressin in treating nocturia in children younger than 8 years

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Introduction

Evidence regarding the efficacy and safety of desmopressin for treating nocturia in young children remains limited. Currently, it is only recommended for use in children over seven years old. Our aim was to evaluate the efficacy and safety of desmopressin in treating nocturia in young children.

Materials & methods

This study focused on children under 8 years old who were experiencing nocturnal enuresis and receiving desmopressin treatment at our hospital from January 2017 to September 2023. Initially, all children received a 60 μg melt form of desmopressin at bedtime. Close follow-up was conducted to monitor adverse effects and evaluate outcomes. Patients with poor results had their dose gradually increased, up to 240 μg. An urodynamic study was performed before and after therapy. Outcome evaluation was conducted using the Global Response Assessment (GRA). The rate of adverse events was also recorded.

Table 1. Baseline Patient Characteristics by GRA Score

	Full responders (GRA=3, N=27)	Partial- and non-responders (GRA≤ 2, N=13)	p-value
Age (years)	6.5 ± 0.8	6.5 ± 0.7	0.990
Gender (male, N, %)	19, 70.4%	7, 53.8%	0.480
Wet nights per week before treatment (days)	5.8 ± 1.8	6.1 ± 1.4	0.649
Follow-up (weeks)	84.7 ± 66.3	49.5 ± 34.1	0.235
Measured/expected CBC (%)	71.1 ± 18.9	64.5 ± 19.4	0.311
Small bladder capacity (N, %)	9, 33.3%	6, 46.2%	0.498
Post-void residual (ml)	9.8 ± 8.9	8.4 ± 13.4	0.721

Table 2. Baseline and Follow-Up Results for Young Children with Nocturia Treated with Desmopressin

	Baseline	1st follow-up	Most rescent follow-up	p-value
Follow-up (weeks)		6.5 ± 2.6	80.5 ± 43.9	
Wet nights per week (days)	5.9 ± 1.7	4.3 ± 2.6	1.8 ± 1.8	0
Measured/expected CBC (%)	68.9 ± 19	N/A	62.6 ± 25.8	0.003
Post-void residual (ml)	9.4 ± 10.2	N/A	7.3 ± 9.4	0.035
Increasing dose (%)		72.5%	45%	
Combine other medications (%)		67.5%	57.5%	
GRA		1.53 ± 1.32	2.58 ± 0.68	0

Table 3. Baseline and Follow-Up Results for Young Children with Nocturia Treated with Desmopressin, Categorized by Response Level

	GRA=3, N=27				p-value
	Baseline	1st follow-up	Most rescent follow-up	p-value	
Wet nights per week (days)	5.8 ± 1.8	3.8 ± 2.9	1.2 ± 1.4	0	0.229
Measured/expected CBC (%)	71.1 ± 18.9	N/A	63.8 ± 27.3	0.015	0.443
Post-void residual (ml)	9.8 ± 8.9	N/A	7.6 ± 7.7	0.09	0.925
Increasing dose (%)		66.7%	29.6%		
Combine other medications (%)		66.7%	40.7%		
GRA	0	1.6 ± 1.4	3	0	
	GRA≤ 2, N=13				**p-value**
	Baseline	1st follow-up	Most recent follow-up	p-value	
Wet nights per week (days)	6.1 ± 1.4	5.4 ± 1.7	3.2 ± 2.4	0.002	0.229
Measured/expected CBC (%)	64.5 ± 19.4	N/A	60.1 ± 23.3	0.092	0.443
Post-void residual (ml)	8.4 ± 13.4	N/A	6.4 ± 13.3	0.203	0.925
Increasing dose (%)		84.6%	76.9%		
Combine other medications (%)		69.2%	92.3%		
GRA	0	1.2 ± 0.3	1.7 ± 0.5	0	

Results

A total of 40 children participated in this study, with a mean age of 6.5±0.8 years and a mean follow-up period of 89±40.7 weeks. Twenty-seven children were classified as full responders (GRA=3), and 13 as partial responders (GRA≤2). Baseline patient characteristics were similar between the two groups (Table 1). At follow-up, significant improvements in all endpoints were observed from the early stage onward after desmopressin treatment compared to before treatment (Table 2). In subgroup analysis according to different GRA scores, desmopressin significantly reduced nocturia episodes in both groups. There were no differences in measured parameters between the groups (Table 3). No adverse events were noted during the study.

Conclusions

Our results highlight the safety and efficacy of desmopressin in reducing nocturia episodes in young children without adverse effects. However, given their young age, children may not accurately report the efficacy and adverse events. Further well-designed randomized controlled trials are needed to confirm these results.