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Outcome after urotherapy in children with dysfunctional voiding on symptoms and quality-of-life.

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Background

Urotherapy can be a successful treatment for children with dysfunctional voiding (DV). The Dutch Vancouver Symptom Score for Dysfunctional Elimination Syndrome (VSSDES) and the Pediatric urinary Incontinence Quality of life (PinQ) questionnaires are valid and reliable, the responsiveness (ability of a questionnaire to detect clinically important changes over time) is unknown.

Aims of this study:

- To evaluate the results of urotherapy in children with DV
- To evaluate the responsiveness of the VSSDES and PinQ

Study design, Materials & Methods

Multicenter study, June 2014 – May 2016
Inclusion: children with DV
Exclusion: neurogenic disease, anatomic abnormalities of the urinary tract and previous urological surgery

- Patients and parents completed the VSSDES and PinQ after inclusion and after finishing urotherapy.
- Relevant data were retrospectively retrieved from patients medical files
- Outcome was defined by the definition initial success of the International Children's Continence Society (ICCS).
- A measure of the responsiveness is the area under the receiver operating characteristic curve (AUC) according to an external criterion (RAND-36-HTI).

→ AUC >0.7 is considered adequate

Results

Included: 64 children, 35 (55%) girls.
Median age: 7 years, (IQR 6-10).
Median duration of urotherapy: 18 weeks (IQR 11-31).

Seventeen were refractory to previous urotherapeutic treatment. After treatment symptoms such as daytime and nighttime incontinence, urge, and abdominal pain all improved significantly (Table 1)

The initial success of treatment was in 55 (86%) children complete or partial and in 9 (14%) no response (Table 2).

In contrast to the VSSDES, the PinQ showed good responsiveness (Table 3).

Symptoms n = 64 [a]	Before treatment n (%)	After treatment n (%)	p-value (Mcnemar test)
Daytime incontinence	54 (84.4)	28 (43.7)	< 0.001
- Partial response (50-99%)		- 18 (28.1)	
- No response (< 50%)		- 10 (15.6)	
Dry	10 (15.6)	36 (56.3)	
Nighttime incontinence	40 (62.5)	23 (35.9)	< 0.001
- Partial response (50-99%)		- 7 (10.9)	
- No response (< 50%)		- 16 (25.0)	
Dry	24 (37.5)	41 (64.1)	
Urge (n=56)	27 (48.2)	6 (10.7)	< 0.001
Abdominal pain	16 (25.0)	2 (3.1)	< 0.001

↑ Table 1. Symptoms presented as number (%) [a] Unless stated otherwise

Initial success (reduction of symptoms)	Total n=64	Refractory to previous treatment n=17	First treatment n= 47
- Complete response (100% reduction)	**30 (47)**	4 (23.5)	26 (55)
- Partial response (50-99% reduction)	**25 (39)**	9 (53)	16 (34)
- No response (<50% reduction)	**9 (14)**	4 (23.5)	5 (11)

↑ Table 2. Initial success following the three ICCS basics principles of treatment outcomes presented as number (%)

External criterion: voiding dysfunction compare to one year ago?	n (%)	Difference in score after urotherapy mean ± SD	
Children VSSDES n=50			AUC 0.50
-Much better/ a little better	41 (82)	-6.34 ± 6.99	p-value 0.98
-Same	7 (14)	-6.48 ± 5.93	
-Much worse/a little worse	2 (4)	-5.50 ± 2.12	
Parents VSSDES n=49			AUC 0.55
-Much better/ a little better	38 (78)	-6.75 ± 6.29	p-value 0.62
-Same	9 (18)	-6.83 ± 7.96	
-Much worse/a little worse	2 (4)	2.00 ± 1.41	
Children PinQ n=45			AUC 0.79
-Much better/ a little better	37 (82)	-8.33 ± 11.21	p-value 0.01
-Same	6 (13)	-.86 ± 4.28	
-Much worse/a little worse	2 (5)	5.50 ± 7.78	
Parents PinQ n=48			AUC 0.72
-Much better/ a little better	37 (77)	-6.72 ± 11.00	p-value 0.03
-Same	9 (19)	1.09 ± 12.41	
-Much worse/a little worse	2 (4)	14.50 ± 4.95	

← Table 3. The VSSDES and PinQ scores and their corresponding RAND-36-HTI response reflect the responsiveness

Conclusions

- Urotherapy is a successful treatment for children with dysfunctional voiding, even when a child had a previous treatment.
- The PinQ is able to detect clinically important change in quality of life after treatment.

Disclosures statement: no conflicts of interest to disclose

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