

PERSISTENT URGE URINARY INCONTINENCE IN BOYS: COMPARISON BETWEEN CONSERVATIVE TREATMENT AND TRANSURETHRAL DESOBSTRUCTION.

Hypothesis / aims of study

Persistent urge urinary incontinence (UUI) in boys is bothersome causing great distress and embarrassment. Although in most cases urinary incontinence is treatable, it remains problematic in some boys despite conservative treatment. Idiopathic detrusor overactivity can be the primary cause of persistent UUI. Alternatively, a functional or anatomic infravesical obstruction may be the underlying cause of an overactive bladder. Therefore, treatment of boys with UUI can focus on treatment of the overactive bladder or on an eventual anatomic obstruction in the urethra. Since no consensus has been reached with regard to the importance of relatively mild urethral obstructions in boys presenting with UUI, treatment protocols differ. In some centers, low-threshold urethrocytoscopy (UCS) is part of the diagnostic pathway when infravesical obstruction is likely or cannot be ruled out and in other centers UCS is not standard in the diagnostic pathway of boys with persistent UUI.

The purpose of this study is to compare the results of the two different treatment strategies in boys with persistent UUI: conservative therapy or UCS with eventual urethral desobstruction.

Study design, materials and methods

Boys with persistent UUI treated in two tertiary referral centers between 2006 and 2009 were included. Persistent UUI was defined as conservative treatment for UUI for at least one year or referral for UUI to a tertiary referral center by a paediatrician or urologist. Treatment protocols differed between the two centres. In Center A, in boys with UUI in whom infravesical obstruction was likely or could not be ruled out, UCS and eventual urethral desobstruction was part of the diagnostic and treatment pathway. Infravesical obstruction was suspected in case of a weak stream, straining, a plateau shaped uroflowmetry, or urodynamically high voiding pressures. In center B, UCS was not part of the standard diagnostic and treatment pathway and most patients were treated conservatively. Conservative treatment consisted of alarm therapy, antimuscarinics, urotherapy or a combination of conservative therapies.

After informed consent, parents were asked to fill in a frequency voiding chart (FVC) for 24 hours, a Dutch translation of the 'provisional' ICIQ-CLUTS questionnaire and an additional questionnaire. These were the first screener questionnaire for lower urinary tract symptoms (LUTS) in children, and a questionnaire based on the standard local questionnaire for micturition complaints. By means of the questionnaires information on age, urinary tract infections, day- and night-time incontinence, daytime frequency, urgency, voiding postponement, straining to void, urge incontinence, feeling of incomplete emptying, bowel movements and constipation was collected.

Results

Of 221 patients with endoscopic treatment for persistent UUI in Center A, 187 (84.6%) could be traced, 166 (75.1%) consented to participate whereof 114 (51.6%) patients returned the questionnaires. Of all 91 patients treated for persistent UUI between 2006 and 2009 in Center B, 72 (79.1%) could be traced, 67 (73.6%) consented to participate, whereof 49 (53.8%) patients returned the questionnaires. Thus, a total of 163 patients were included: 114 in Center A and 49 in Center B. Mean patient age at the beginning of treatment in Center A was 8.0 ± 2.3 years (range 4-18), and 8.7 ± 2.7 years (range 4-16) for children treated in Center B, $p=0.80$. Mean age at follow-up was 12.7 years in Center A and 14.1 years ($p=0.11$) in Center B.

A significant part of the patients reported any urinary incontinence at follow up: 41 (36%) in Center A and 16 (33%) in Center B. However, there were no significant differences between both group, $p=0.67$. Voiding frequency was <4 or >7 in 21.9% of patients in Center A and in 16.3% of patients in Center B, $p=0.49$. Significant urge symptoms (\geq most of the time) were present in 23.7% of patients in Center A and in 22.4% of patients in Center B.

A total of 75 patients completed a 24-hr FVC, 58 patients in Center A and 17 patients of Center B. No significant differences were found comparing FVC's of both groups. Median values of fluid intake were: total: 1350 mL [IQR 1125-1588] and 1400 mL [1270-1775], average: 220 mL [IQR 177-237] and 222 [IQR 135-232]. Median values of voided volumes were: total: 1087 mL (IQR 900-1431) and 1100 mL (959-1468), average: 164 mL [IQR 136-202] and 170 mL [IQR 135-232]. Twenty patients (34%) in Center A reported incontinence versus two patients (12%) in Center B, $p=0.13$.

Interpretation of results

The main purpose of this paper was to compare results of conservative versus endoscopic treatment in boys with persistent UUI. Our data show that there was no significant difference with regard to LUTS, incontinence and micturition frequency between treatment groups. Remarkably, we found persistence LUTS in a high percentage of boys in both groups. Persistence of incontinence despite intensive treatment is consistent with earlier studies. [1,2]

However, it should be noted that patients were treated in different hospitals, possibly leading to bias. Although we tried to form comparable groups in both centers, baseline characteristics may have been different. The population examined was heterogeneous concerning the differences in length of conservative treatment, methods of conservative treatment and use of anti-muscarinic medication. As this was not a randomized study, we will never know what the outcome would have been if patients had been treated otherwise. Results of this study justify a prospective trial in boys with persistent UUI, with randomization between conservative treatment and endoscopic resection of eventual urethral obstruction.

Concluding message

A high percentage of boys with persistent UUI remain symptomatic, both after conservative treatment and transurethral desobstruction.

References

1. Hennis PM, van der Heijden GJ, Bosch JL, de Jong TP, de Kort LM. (2012) A systematic review on renal and bladder dysfunction after endoscopic treatment of infravesical obstruction in boys. PLoS One 7: e44663.
2. Bladder rehabilitation, the effect of a cognitive training programme on urge incontinence. Vijverberg MA, Elzinga-Plomp A, Messer AP, van Gool JD, de Jong TP. Eur Urol, 31 (1997), pp.424-429.

Disclosures

Funding: None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Ethics Committee of the UMC Utrecht, the Netherlands. **Helsinki:** Yes **Informed Consent:** Yes