also measured in those patients able to void. Two patients with neurogenic bladders were also followed with cystometrograms and leak point pressures (LPP).
Results: Sixteen of the 20 patients (80%) exhibited improved bladder symptomatology and/or emptying. Dosage of doxazosin ranged from 0.5 mg to 8 mg (mean 2.26 mg) and duration of ongoing therapy ranged from 2 weeks to 16 months (mean 3.5 mos). None of the patients exhibited untoward side effects necessitating discontinuation of treatment. Ten of the 11 patients in whom PVR was measured demonstrated a mean 84% reduction in PVR during treatment (range 35-100%). Six patients had pre- and post-treatment peak flow rates for comparison and demonstrated an average 5-fold increase in their maximum flow rate. Only one patient with a previous ureteral bladder augmentation demonstrated a persistent large PVR (6.5% reduction) despite improved flow on uroflowmetry (10-fold increase). In 5 children with a history of posterior urethral valves, new or increased hydronephrosis was seen in 3 patients (2 bilateral, 1 solitary kidney) while chronic hydronephrosis was present in the remaining 2 patients (1 solitary kidney). After alpha blocker therapy, hydronephrosis resolved in 2 patients, improved in 2 patients, and remained unchanged in 1 patient. Finally, the 2 patients with neurogenic bladders demonstrated a mean 56% decrease in their LPP with alpha-blocker therapy.
Conclusions: Selective alpha-blocker therapy seems well tolerated in children and appears effective in a variety of pediatric voiding disorders on short-term follow-up. In our early experience, patients with valve bladders appear to particularly benefit from selective alpha blocker therapy. Not only is bladder emptying improved, but hydronephrosis due to elevated bladder pressures has also substantially improved in most patients. Future investigation is necessary to determine if selective alpha blocker therapy may provide long term benefit in patients with PUV as well as other pediatric voiding dysfunctions.

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TRANSCUTANEOUS NEUROMODULATION IN NON-NEUROPATHIC BLADDER SPHINCTER DYSFUNCTION IN CHILDREN: PRELIMINARY RESULTS.

Aims of study

In adults, neuromodulation has found its place in the treatment of functional voiding dysfunction. Due to the invasiveness of the treatment it has until today rarely been used in children. With transcutaneous neurostimulation available this treatment modality can also be used in children.

In order to investigate the clinical effects of transcutaneous neuromodulation on detrusor overactivity in children with non-neuropathic bladder sphincter dysfunction a prospective study was conducted.

Material and methods

Between 1st May 1998 and 28 February 1999, 40 children (15 girls, 25 boys) with proven detrusorinstability, underwent neuromodulation. Most children have been under anticholinergic therapy for more than 3 months. Children in whom anticholinergics had no effect, neurostimulation was used as single therapy, in those children in whom anticholinergics had partial effect, they were continued during neurostimulation.

Stimulation of 2 Hertz is applied during 2 hours every day. Surface electrodes are put at the level of the sacral root S3. In children not responding to the 2 Hertz stimulation, 80 Hertz was applied during the whole night. After one month of trial stimulation, those children who respond continue the treatment for 6 months. Every 2 months they are evaluated.

Results

Of the total group of 40 children 27 were considered responder after 1 month of trial therapy. On their voiding diaries, increase in bladdercapacity, decrease of urge, decrease of incontinence or better sensibility were noted. Of the 13 non-responders, 11 were boys. Motivation problems were often encountered among these boys.
The results can be evaluated in 23 children (11 girls, 12 boys), who underwent stimulation minimally during 3 months.
In all patients a better bladder sensibility is observed which leads to better control of incontinence. They feel urge better and can respond more adequate by going to the toilet.
In those patients who suffer incontinence during night (23) there is decrease in nighttime incontinence in 6.
In the responding patients significant increase in functional bladder capacity was seen in 15, urge decreased in 14, and daytime wetting decreased in 8 (out of 16 suffering daytime incontinence). Most patients respond well to the 2 Hertz stimulation. Only 4 patients changed to 80 Hertz stimulation.
Adverse effects were not observed.
Only 4 patients have terminated stimulation after 6 months of therapy and have a minimal follow-up of 3 months to evaluate. In 3 out of them results are definitive. One patient relapsed after termination. Another 4 patients continue stimulation after 6 months. They were the first patients to start therapy and therefore are the hardcore group. In those we taper therapy and let patients stimulate every other day.

Conclusion

Although preliminary, the results of this study show that transcutaneous neuromodulation can improve symptoms of detrusor overactivity. In 67.5 % response on stimulation is seen. We have to wait for the long-term results before starting it as first choice therapy. Especially in children it is an attractive therapeutic option, seen the non-invasiveness and the absence of adverse effects.

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Urodynamic pattern in asymtomatic infant siblings to children with vesicoureteral reflux

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The significance of bladder dysfunction in infants with various urinary tract disorders is uncertain due to the lack of knowledge about the urodynamic pattern in healthy infants. The aim of the present study was to evaluate the urodynamics in sibling infants screened for vesicoureteral reflux (VUR) by combining cystometry and perineal electromyography (EMG) with voiding cystourethrography (VCU) thereby obtaining information about infants without as well as with VUR.

Material A total of 37 infants were enrolled. They were asymtomatic siblings of children with VUR referred for investigation of hereditary reflux. 31 infants, 12 males (median age 0.7 months) and 19 females (median age1.2 months), were without reflux at the investigation and those are the children included in the study.