

EFFICACY AND TOLERABILITY OF CIC OR CDS COMBINED WITH TOLTERODINE IN CHILDREN WITH NEUROGENIC DETRUSOR OVERACTIVITY

Hypothesis / aims of study

To investigate the urodynamic effects and tolerability of clean intermittent catheterization(CIC) and catheterization during sleep(CDS) combined with the new antimuscarinic drug tolterodine in children with neurogenic detrusor overactivity (NDO).

Study design, materials and methods

A total of 44 patients with neurogenic detrusor overactivity were enrolled and randomly divided into experimental(n=24) and control(n=18) groups. The experimental group underwent CIC and CDS combined with tolterodine while the control group CIC and CDS combined with placebo. Using double-blind, placebo-controlled trial. All patients received a total of 0.1 mg/kg oral tolterodine tartrate (Detrusitol) daily or placebo, divided into two doses for 4 weeks each helped by their parents or guardians, and daily doses were individualized for each subject(The maximum dose not more than 2 mg/d). Urodynamic data and 3-day bladder diaries were obtained before and within 4 weeks of ongoing medication.

Results

Forty-one patients successfully completed four weeks follow-up. Volume to first detrusor contraction >10 cm H₂O pressure, the safety bladder capacity, the detrusor compliance and the volume per catheterization were more significantly increased after treatment in experimental group compared with the control group[(109±30)ml vs(84±35)ml, (251±45)ml vs (212±40)ml, (6.2±1.4)ml/cmH₂O vs (5.1±1.4)ml/cmH₂O, (209±46)ml vs (155±44)ml, (P<0.05)],while the number of incontinence episodes per24h decreased [(1.3±1.1) vs (2.7±0.9) (P<0.05)].

Interpretation of results

Tolterodine is properly bladder highly selective M receptor blockers which belongs to anticholinergic drugs. Tolterodine could effectively control the detrusor's no-inhibition of contraction wave, improve bladder compliance, reduce bladder pressure, increase bladder capacity, so it can protect the function of upper urinary tract for a long time. CIC is an important way of bladder training and emptying in patients with neurogenic bladder, which can be used to simulate the intermittent filling and emptying of the bladder. When using urodynamic study to follow up the outcomes of those NDO children, the combined using of the two treatments can inhibit detrusor instability, reduce urinary incontinence and increase bladder capacity better which significantly improve the quality of life of children and find a safe and effective treatment for neurogenic bladder children.

Concluding message

CIC and CDS combined with tolterodine in children with NDO are safe and effective, which can decrease significantly the number of incontinence episodes and improve the quality of life.

Disclosures

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