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BOTULOTOXIN A IN THE TREATMENT OF CHILDREN WITH NEUROGENIC BLADDER: OUR FIRST EXPERIENCE.

Hypothesis / aims of study

A novel alternative treatment in neurogenic bladder that is refractory to anticholinergics and remain in a small-capacity, high-pressure state is the injection of botulinum toxin into the detrusor. Initial promising results in adults have initiated its use in children. So far, studies of the clinical effect of botulinum toxin in children have been open trials, and there is a lack of prospective controlled trials. Moreover there is a single study, urethral sphincter botulinum-A toxin injection has been shown to be effective in decreasing urethral resistance and improve voiding. The evidence is still too low to recommend its routine use in decreasing outlet resistance, but it could be considered as an alternative in refractory cases

Study design, materials and methods

We have used botulotoxin A in the treatment of neurogenic bladder in children after 5 years old. We have treated 13 boys with neurogenic bladder that hade small capacity and uneffective micturation in combination with upper urinary tract malformation – doubleside megaurether or vesicourethral reflux in all of them. 9 of them before our treatment used intermitted bladder catheterization, 4 – wear the urethral catheter permanently during the last 3 years. Obstructive micturation with low rate about 4-7 ml\sec. and large residual volume (40-80% from effective bladder volume) characterized these patients. Urodynamic investigation showed decreasing of bladder capacity to 50 ml with high bladder pressure about 110 mm H2O.

Injection of botulotoxin A to detrusor and to the urethral sphincter together were done in 7 boys, and only to the detrusor in 4 patients. Indications for the injection of botulotoxin to the sphincter were decreasing flow less 5ml\sec. in combination with large residual urine more than 70% from effective micturation volume without any organic purposes for outlet bladder obstruction.

We inject 8-12 units point wise into the detrusor all over the bladder and to the sphincter on the 3, 6, 9 and 12 o'clock of dial plate.

Summary dose was not more 150 units: 80-100 units of them were injected to the detrusor, 30-50 units to the sphincter.

Results

All patients have restored the self micturation through 3-7 days after the treatment and significantly improved flow to 10-15 ml\sec. without residual urine volume less 30ml. At the same time changing of bladder volume in the early postoperative period little degree (only to 10-20%). Investigation through the 3 month later show significant increasing of bladder volume to 55-80% in all patients. Moreover in 5 patients who were investigated through the 12 month this trend gone on and their bladder volume increased to 67-82%. Cistometry shows stable low bladder pressure in them.

Interpretation of results

Children with neuropathic bladder have demonstrated better results of lower urinary tract dysfunction restoration after the botulotoxin injection than we can see it in elder patients.

Concluding message

There are no any data for prognoses of long term follow up of these children. However, the injection of botulinum toxin in neurogenic bladders appears to be an effective treatment alternative.

Disclosures

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