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Keppenne V[1], Gaspard Y[1], Mathantu B[1], Sanjurjo S[1], de Leval J [1]
1. C H U Sart Tilman

DETRUSOR INJECTION OF BOTULINUM A TOXIN FOR IDIOPATHIC OVERACTIVE BLADDER SYNDROME: CLINICAL AND URODYNAMIC EVALUATION

Hypothesis / aims of study
The aim of this prospective study was to analyze objective and subjective results following detrusor injection of botulinum A toxin (BTxA) in patients presenting refractory idiopathic bladder overactivity (OAB). This study also sought to determine the duration of BTxA therapeutic benefit and the delay between 2 BTxA injections.

Study design, materials and methods
Fifteen consecutive patients suffering from OAB, unsuccessfully treated by anticholinergic therapy and physiotherapy and/or neuromodulation, were initially assessed with a voiding diary, cystoscopy and urodynamics studies. All patients experienced at least 1 episode of urinary urge incontinence per day. Patients were administered 100 or 250 units of BTxA (Botox® and Dysport®, respectively) diluted in 10 mL of normal saline into the detrusor muscle at 10 injection sites, excluding the trigone. Injections were carried out under general or spinal anesthesia. Follow-up evaluation included repeat urodynamics studies (uroflowmetry and cystometry), clinical evaluation and voiding diary at 6 weeks and 6 months after treatment. Clinical success was achieved when a patient was completely dry without urgency. Improvement was defined by reduction of OAB symptoms. Methods, definitions, and units conform to the standards recommended by the ICS.

Results
All patients were female patients with a mean age of 64.5 years (21-78). Duration of the symptoms before treatment was 65.1 months (19-170). Subjectively, 11 patients (73 %) were very satisfied and 4 were not satisfied with the treatment. Objectively, 5 patients were completely dry (clinical success group), while 8 patients experienced a reduction of OAB symptoms and 2 patients exhibited no change in symptoms. Results from urodynamic studies showed that mean volume at first involuntary detrusor contraction (IDC) was 2O2.9 mL before BTxA injection, 301 mL at 6 weeks, and 178 mL at 6 months. In the clinical success group, mean volume at IDC was 98.3 mL before BTxA injection, 183.3 mL at 6 weeks and 138 mL at 6 months. Mean maximum cystometric capacity (MCC) was 260.8 mL before BTxA injection, 341 mL at 6 weeks, and 186.9 mL at 6 months. In the clinical success group, MMC was 241.5 mL before BTxA injection, 277.5 mL at 6 weeks and 244 mL at 6 months. Mean maximum detrusor pressure during bladder contraction (MDP) was 45 cm H_2O before BTxA injection, 39.2 cm H_2O at 6 weeks and 53 cm H_2O at 6 months. In the clinical success group, MDP was 58 cm H2O before BTxA injection, 27 cm H2O at 6 weeks and 44.25 cm H2O at 6 months.
The investigation of BtxA efficacy duration showed a deterioration of urodynamics parameters at 6 months. Subjectively, 6 patients also described recurrence of OAB symptoms at 6 months, 1 patient at 7 months and 2 patients at 3 months. Two other patients were still very satisfied at 6 months. Only 4 patients were reinjected between 6 and 8 months. Four other patients are waiting for a second injection (more than 6 months after the first injection).

Interpretation of results
We observed interesting results with a high rate of subjective success (73%) and a complete clinical success rate of 33%. Urodynamics evaluation mainly showed an increase of the mean volume at IDC, which was doubled in the clinical success group. This group also experienced an important decrease in MDP. Surprisingly this group presented a smaller MMC before treatment as compared with the global population. The duration of efficacy of BTxA seems to be at least 6 months, with similarly clinical and urodynamic evolution.

Concluding message

BTxA appears to be effective to treat idiopathic refractory OAB, with subjective and objective improvement, and with mostly a minimum of 6 months efficacy duration.