

COMPARISON OF INTRADETRUSOR INJECTIONS OF BOTULINUM TOXIN A IN ADULT PATIENTS WITH SPINA BIFIDA AND IN PATIENTS WITH SPINAL CORD INJURY : A MULTICENTER STUDY

Hypothesis / aims of study

Botulinum toxin injections have become the gold standard treatment of neurogenic detrusor overactivity (NDO) refractory to anticholinergic therapy. Spina bifida is a common cause of neurogenic bladder but patients with spinal dysraphism were not included in the large randomized trials that have evaluated the safety and efficacy of intradetrusor injections of botulinum toxin in NDO. Only a few studies have aimed to assess the outcomes of botulinum toxin injections in spina bifida patients and all of them were conducted in children. The aim of the present study was to evaluate the outcomes of intradetrusor botulinum toxin injections in adult patients with spina bifida and to compare them to those observed in patients with spinal cord injury (SCI).

Study design, materials and methods

All adult patients with spina bifida treated with intradetrusor injections of botulinum toxin between 2007 and 2014 in two centers were included retrospectively. All SCI patients treated with intradetrusor injections of botulinum toxin during the same period were also included as a control group. All patients had a voiding diary and urodynamics before and 6 weeks after injection. The success of toxin injection was defined as resolution of urgency, urinary incontinence and detrusor overactivity.

Results

Twenty-five spina bifida patients and 81 patients with SCI were included for analysis. There were more women in spina group (57.7% vs. 18.3%; $p < 0.0001$) and patients were younger than in the spinal cord injured group (27.9 years vs. 38.9 years; $p = 0.0002$). The success rates (52% vs. 63%, $p = 0.34$) and resolution of urinary incontinence (68% vs. 71%; $p = 0.44$) were comparable between the 2 groups. There was no significant difference in the decrease in the maximum bladder pressure (-7.7 cm H₂O vs. -17.1 cm H₂O, $p = 0.33$). Ten spina bifida patients and 16 SCI patients had a low compliance bladder (compliance <20 ml / cm H₂O ; 40% vs. 19%, $p = 0.04$). In this subgroup of low compliance bladder success rate was lower in spina bifida patients (20% vs. 69%, $p = 0.02$).

Interpretation of results

When considering all patients, the efficacy of botulinum toxin in adult patients with spina bifida is comparable to the one observed in spinal cord injuries. However the efficacy of botulinum toxin is much lower for spina bifida patients with low compliance bladder in comparison to low compliance bladder of patients with SCI suggesting significant differences in poor compliance bladder of spinal cord injured and spina bifida patients.

Concluding message

The efficacy of botulinum toxin is much lower for spina bifida patients with poor compliance bladder in comparison to poor compliance bladder of patients with SCI.

Disclosures

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