

## **BOTULINUM TOXIN TYPE A FOR REFRACTORY DETRUSOR OVERACTIVITY IN PATIENTS WITH SPINAL CORD INJURIES IN ASIA: PRELIMINARY RESULTS**

### Hypothesis / aims of study

We review the efficacy of injecting botulinum toxin type A into the detrusor muscle for patients with spinal cord injuries with refractory detrusor overactivity (DO).

### Study design, materials and methods

In a prospective trial, we recruited 8 patients with spinal cord injuries and on clean intermittent catheterisation (CISC) over a 16-month period. All patients were incontinent despite maximal anti-cholinergic therapy. Those with myasthenia gravis, pregnancy and active infection were excluded. Pre-treatment assessment included voiding diary, video urodynamic study, upper tract evaluation and plain abdominal radiograph. Each patient received 300 units of botulinum toxin type A (Botox<sup>®</sup>, Allergan Inc., Irvine, California) delivered via cystoscopic needle. Post-treatment assessment included voiding diaries and video-urodynamic studies scheduled at 6, 26 and 39 weeks after injection. The study was approved by the institution's Ethics Committee.

### Results

Seven patients had completed 6 weeks of follow-up and 2 had completed the study. We report our preliminary results at 6 weeks post-injection. Complete continence was achieved in 4 (57.1%) and significant decrease in leakage in 2 (28.6%). Six (85.7%) reported improvement in continence and all able to withdraw completely from anti-cholinergic medication. There was no change in the remaining patient. The mean number of leakages measured over a 24-hour period declined from  $3.1 \pm 1.9$  to  $1.2 \pm 1.8$  ( $p < 0.1$ ). The mean maximal catheterisable volume increased from  $346.8 \pm 183.4$  ml to  $478.5 \pm 244.7$  ml ( $p < 0.05$ ). As for urodynamic parameters, DO was completely abolished in 2 (28.6%). Mean volume of infusion at which DO first occurs increased from  $130.0 \pm 56.0$  ml to  $211.1 \pm 137.3$  ml ( $p < 0.1$ ). The maximal detrusor pressure declined from  $63.4 \pm 29.5$  cm water pressure to  $32.3 \pm 25.3$  ( $p < 0.05$ ). Mean cystometric capacity increased from  $187.8 \pm 69.2$  ml to  $305.7 \pm 136.4$  ml ( $p < 0.05$ ). No major complications were encountered and only 1 had lower urinary tract infection, which was easily treated with antibiotics.

### Interpretation of results

Botulinum toxin type A injected into the detrusor can result in continence although the underlying detrusor overactivity is not completely abolished. Continence can be achieved through a decrease in the magnitude of the detrusor overactivity.

### Concluding message

Botulinum toxin type A injected into the detrusor is safe and effective in achieving continence for refractory DO in patients with spinal cord injuries

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