

## **BOTULINUM TOXIN TYPE A FOR LOWER URINARY TRACT DYSFUNCTION: EFFICACY, SAFETY AND ADHERENCE TO TREATMENT**

### Hypothesis / aims of study

The purpose of our study was to evaluate the efficacy and safety of onabotulinum toxin type A for the treatment of idiopathic overactive bladder (iOAB), neurogenic overactive bladder (nOAB) and painful bladder syndrome (PBS). We also evaluated treatment discontinuation rates and the reasons.

### Study design, materials and methods

Between January 2013 and June 2015, 120 treatments were performed in 95 patients. The treatment area was located at the outpatient clinic, and we used a rigid cystoscope to perform the procedure under topical intravesical anaesthesia. The injection pattern in patients with iOAB was 10 detrusor injections, in patients with nOAB 20 detrusor injections and in patients with BPS 3 injections in the trigone.

Before treatment, detailed anamnesis and physical examination, urinalysis and urine culture, ultrasound, urodynamics (videourodynamics for nOAB patients) were performed, and the ICIQ-SF was given to iOAB and nOAB patients, and the visual analogue pain scale (VAS) to BPS patients.

Followup: one visit two weeks after treatment and again after 3 months for the evaluation of efficacy (with ICIQ-SF, VAS and global response to treatment scale) and of complications. Patients asked for reevaluation when they felt that the effect of the toxin diminished or disappeared.

### Results

We performed 120 treatments in 95 patients. iOAB was the most frequent indication (71.6%), followed by BPS (14.7%) and nOAB (13.7%). Mean age was 65 years. Global response rate was 65.2%: in the iOAB group 69.8% patients had a favourable response, in the nOAB group 68.7% and in BPS group 30.7%.

Haematuria appeared in 21.4% of patients, urinary tract infection in 28.6%, urinary retention (requiring intermittent self-catheterization) in 6.25% and general symptoms in 8.9%. All complications were managed without admission.

Dropout rate was 39.8%, and 65% of them due to lack of effect.

The procedure was well tolerated when performed at the outpatient clinic with topical intravesical anaesthesia (mean intraoperative VAS 3.57/10).

### Interpretation of results

There is no agreed consensus regarding the definition of "persistent" or "refractory" UUI, but patients who tend to fall into this category usually comprise of those who report inadequate symptom control after at least 2 first-line therapies. These should include 2 anticholinergic medications or 1 anticholinergic and mirabegron and at least 1 course of supervised behavioral therapy, physical therapy or biofeedback. Third-line treatment may also be recommended when bothersome adverse events or intolerance to medication occur. Botulinum toxin is a minimally-invasive procedure with good response rates in patients with overactive bladder.

Recent studies showed that BoNT-A inhibited sensory neuropeptide in rats, suggesting that botulinum toxin had a potential clinical benefit in the treatment of neurogenic inflammation in BPS. Moreover, inhibition of neuroplasticity of the sensory fibers in the suburothelial space by intravesical BoNT-A could target pain and sensory urgency in IC/BPS patients. Its use in patients with bladder pain syndrome is at the moment off-label, and it can be offered in patients without response to conventional treatment and before more invasive procedures.

### Concluding message

Intradetrusor injection of botulinum toxin is an easy and safe procedure, with minor and easy-to-manage complications. It shows very good results in idiopathic and neurogenic overactive bladder, and it can be considered in patients with BPS who are refractory to second-line treatments.

### Disclosures

**Funding:** None **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** IRB of the University Hospital of the Canary Islands' Complex **Helsinki:** Yes **Informed Consent:** Yes