

## EFFICACY OF BOTULINUM TOXIN A FOR TREATING IDIOPATHIC BLADDER OVERACTIVITY: PATIENT REPORTED OUTCOMES

### Hypothesis / aims of study

Intravesical injection of Botulinum toxin-A (BoNT-A) has been introduced as an alternative treatment for patients with overactive bladder (OAB) refractory to anticholinergic therapy. The evaluation of the effectiveness of this treatment as well as other therapies for OAB is sometimes difficult. Objective measures such as urodynamic assessment have little and weak relation with OAB symptoms. By contrast, patient reported outcomes seem to be a better option taking into account that the diagnosis of OAB is based on symptoms. Since the 2002 (ICS definition), urgency is the only symptom needed to diagnose overactive bladder, but usually it is associated with an increase in urinary frequency and nocturia. Urge incontinence can also be present in patients with bladder overactivity.

The aim of this study was to assess the positive effect of the treatment with botulinum toxin-A from the patient's perspective using the bladder control self-assessment questionnaire (B-SAQ)(1). We also evaluated the level of satisfaction with the treatment and the willingness to continue with it.

### Study design, materials and methods

A prospective cohort study was undertaken to assess the effect of treatment with botulinum toxin-A in patients with overactive bladder. The study group was selected from patients with bladder overactivity treated in the Functional Urology Unit of our Public Health Hospital. The inclusion criteria were: patients with refractory OAB (those not responding to maximal doses of oral anticholinergic therapy) or patients that reported intolerable side effects with anticholinergic use. The exclusion criteria were: patients with a recognised neurological disorder or medical complications such as bladder stones, urinary infection or obstruction.

Overactive bladder was diagnosed according to the ICS 2002 definition. The severity of urinary symptoms and the bother they caused were evaluated using the validated Spanish version of the bladder control self-assessment questionnaire (2). This questionnaire was scored with a 4 point (0-3) Likert scale to each question: 0 (not at all), 1 (a little), 2 (moderately) and 3 (a great deal). The individual symptom and bother scores were added to obtain an overall symptom and bother score.

The intravesical injection of BoNT-A was delivered via cystoscopic guidance. Each patient received 250 units of Botulinum toxin-A (Dysport, Ipsen) which was diluted in 10 ml of normal saline solution. Ten injections of 1 ml each were introduced into detrusor muscle sparing the trigone. The treatment was performed under local anaesthesia or sedation.

The follow-up visit took place six months after treatment. Patients were asked to answer the B-SAQ questionnaire again. During this visit, the level of satisfaction with the treatment and the willingness to continue with it were also evaluated using specific questions (13 and 14) of the validated overactive bladder satisfaction (OAB-S) questionnaire (3).

The description of the continuous variables was done by the mean followed by the standard deviation (SD) or range. The categorical variables were described using proportions. The statistical analyses used for mean comparison was the T-test paired.

### Results

Fifty five patients were enrolled, 2 of them were men and 53 were women. Mean age was 65.9 years (range: 42-83). Urgency was present in all cases, increased daytime frequency and nocturia in 96.4%, and urinary incontinence in 85.5%. Botulinum toxin-A was injected under local anaesthesia in 51 patients while sedation was needed in the remaining 4. All patients attended the six months follow up visit forming the study group. The mean overall B-SAQ score for both, symptoms ( $3.94 \pm 3.81$  vs.  $9.27 \pm 2.65$ ;  $p=0.000$ ) and bother ( $4.07 \pm 4.09$  vs.  $9.32 \pm 2.96$ ;  $p=0.000$ ) was significantly lower in the six months follow-up visit in comparison with basal (before treatment) scores, indicating a global improvement after treatment. The mean score of each question and the comparison between basal and post treatment are showed in table 1. All the symptoms and bother scores decreased significantly in the six months follow-up visit indicating an improvement in all of them after treatment.

The proportion of patients with a better score in OAB symptoms six months after treatment was also calculated. Urgency was the symptom that improved in a greater proportion of patients (70.9%), followed by frequency (67.3%), urinary incontinence (61.8%) and nocturia (60%).

The overall satisfaction with OAB treatment was distributed as follows: very satisfied, 40%; somewhat satisfied, 23.6%; neither dissatisfied nor satisfied, 18.2%; somewhat dissatisfied, 12.7%; and very dissatisfied 5.5%. When we asked the willingness to continue with the treatment, up to 77% answered definitely yes.

**Table 1** Mean score of each B-SAQ questionnaire item and comparison between basal (before treatment) and six months post treatment.

	Symptom score (mean $\pm$ SD)			Bother score (mean $\pm$ SD)		
	Basal	6 months post treatment	P value	Basal	6 months post treatment	P value
Urgency	2.38 $\pm$ 1.00	0.82 $\pm$ 1.10	0.000	2.35 $\pm$ 1.00	0.96 $\pm$ 1.10	0.000
Frequency	2.47 $\pm$ 0.79	1.16 $\pm$ 1.11	0.000	2.47 $\pm$ 0.79	1.16 $\pm$ 1.11	0.000

Nocturia	2.27 ± 0.91	1.13 ± 0.98	0.000	2.22 ± 1.06	1.13 ± 1.20	0.000
Incontinence	2.15 ± 1.09	0.84 ± 1.10	0.000	2.29 ± 1.11	0.91 ± 1.19	0.000

SD: standard deviation

#### Interpretation of results

Urgency improved in more than 70% of patients after intravesical injection of botulinum toxin-A. Other symptoms such as increased daytime frequency, nocturia and urinary incontinence also improved after treatment. Both caused by the symptoms was also lower six months after botulinum toxin-A injection. Our results also showed that 63.6% patients were satisfied with the treatment and up to 77% would like to continue with it.

#### Concluding message

Intradetrusor injections of 250 U botulinum toxin-A is an effective treatment for idiopathic overactive bladder, improving both symptoms and bother from the patient's perspective. Nearly two thirds of patients were overall satisfied with the treatment.

#### References

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3. Piauxt E, Evans CJ, Espindle D, Kopp Z, Brubaker L, Abrams P. Neurourol Urodynam 2008; 27: 179-190

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<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Donostia Hospital Medical Ethics and Investigation Committee</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>