

INTRAVESICAL BOTULINUM TOXIN A: AN ALTERNATIVE PROCEDURE OF ADMINISTRATION

Hypothesis / aims of study

Botulinum toxin A (BTX-A) has proven to be a safe and effective therapy for a variety of somatic and autonomic motor disorders. In the urologic field the first clinical success with urethral and bladder injection of this toxin have been obtained in the treatment of detrusor sphincter dyssynergia of spinal cord injured (SCI) patients. Schurch et al. reported first 31 SCI patients with neurogenic overactive detrusor treated with intradetrusorial BTX-A injection. They demonstrated a significant increase in mean maximum bladder capacity and a significant decrease in mean maximum detrusor voiding pressure. Clinical responses lasted 4 to 14 months and observed no adverse effects with treatment. In our clinical experience BTX-A improved our success rate in the treatment of neurogenic detrusor overactivity. Recent studies are reporting encouraging data using sub-mucosal injection of BTX-A for painful bladder or idiopathic overactive bladder. Sweeney has recently proposed intravesical instillation of BTX-A for neurogenic and idiopathic overactive bladder. Aim of the study was to investigate clinical effect of intravesical instillation of BTX-A. in neurogenic and non neurogenic patients

Study design, materials and methods

From October 2005 to February 2006 we have treated 12 patients with intravesical instillation of BTX-A. 6 out of 12 patients with a spinal cord injury and neurogenic overactive detrusor, the remaining 6 with idiopathic overactive detrusor. Mean age was 42 years old (range from 22 to 55 years). All patients were refractive to anticholinergic therapy. The procedure was performed by a Foley catheter with an instillation of 20ml of 2% lidocaine and 20 ml of 1% protamine chloride for 20 minutes. After the bladder was voided and 300 units of American BTX-A diluted in 30 ml of normal saline was instilled. Patients were asked to hold the BTX-A in the bladder for 30 minutes, after the catheter was removed. All patients used the bladder diary before and for 1 month after treatment. All SCI patients underwent to Videourodynamic examination to exclude the presence of vesico-ureteral reflux. Standard urodynamic was assessed in non neurogenic patients before the treatment and in all patients 15 days after treatment.

Results

All the patients did not refer any adverse effect during the instillation and at the last control after 1 month. 3 (50%) out of 6 non neurogenic patients experienced clinical improvement after this treatment, 1 (16%) SCI patient out of 6 had a clear clinical improvement. Diaries demonstrated decreases in voiding episodes from 15 (range 12-18) to 8 (range 6-9) and in incontinence episodes from 5 (range 3-7) to 1 (range 0-2). The SCI patient was almost dry. Urodynamic evaluation showed an increased median value of cystometric capacity from 200 ml to 260 ml. in 7 out of 12 patients.

Interpretation of results

Our results show better results in non neurogenic patients, this may be due because in idiopathic overactive bladder submucosal receptors play a role much more important than in SCI patients without central nervous control on the bladder and with usual detrusor muscle hypertrophy.

Concluding message

Intravesical instillation of BTX-A and protamine seems to be safe, less invasive and a promising technique for non neurogenic patients.

REFERENCES

- 1) Reitz A et al. ;European experience of 200 cases treated with botulinum-A toxin injections into the detrusor muscle for urinary incontinence due to neurogenic detrusor overactivity. Eur Urol. 2004 Apr;45(4):510-5
- 2) Sweeney D. et al.: Intravesical instillation of botulinum toxin A for Overactive bladder. Abstract ICS 2005

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the AOU Careggi and followed the Declaration of Helsinki Informed consent was obtained from the patients.