

PROSPECTIVE EVALUATION OF BOTULINUM TOXIN A (BOTOX®) IN NEUROGENIC URINARY INCONTINENCE.Hypothesis / aims of study

Multifocal intramural detrusor injections with botulinum A toxin are an effective treatment for refractory neurogenic detrusor overactivity in spinal cord injured patients [1]. We present our early experience with intradetrusor injection of Botox ® in management of resistant neurogenic detrusor overactivity (NDO) following traumatic spinal cord injury (SCI). This study was designed to investigate the clinical effectiveness, the urodynamics data and disease specific quality of life in these patients.

Study design, materials and methods

Thirty patients with neurogenic detrusor overactivity refractory to anticholinergics were enrolled and treated with 300 units botulinum-A toxin injection into detrusor. The clinical effectiveness of improvement in lower urinary tract symptoms and urodynamic parameters were assessed at baseline, 1, 3, 6 and 9 months after treatment. The injection technique used has been described earlier [1]. The patients characteristics are in table I.

The urodynamic parameters cystometric capacity, overactivity volume (volume at first occurrence of detrusor overactivity), and detrusor compliance, the clinical continence volume, clinical functional capacity, and clinical maximum capacity, the anticholinergics dosage, and the patients' index quality of life (QoL) (questionnaire Qualiveen, suitable for use in SCI patients with urinary disorders) were recorded before and after treatment.

Table I. Demographic data

Aetiology	Number of patients	Sex	Age at examination (y)	Duration of disease (y)	Neurologic status	
SCI	25	7 female	35,8	6,3	Tetraplegia incomplete	2
		18 male	(13,9)	(5,6)	Tetraplegia complete	4
					Paraplegia incomplete	2
					Paraplegia complete	17
Multiple sclerosis	3	3 female	33,3	7,7	Tetraplegia incomplete	1
			(6,8)	(8,3)	Paraplegia incomplete	2
<i>Spina bifida</i>	2	1 female	35,5		Paraplegia incomplete	2
		1 male	(19,1)		Paraplegia incomplete	

Note. Values are mean ± standard deviation.

Results

No intra or postoperative complications were noted. Significant reductions compared to baseline ($p < 0.05$) in number of incontinence episodes were observed at month 1. Twenty five (86%) of these subjects were completely dry at this date of which 1 did not require any anticholinergic while 15 reported decrease treatment; 3 patients were improved (1 incontinence episode per day). 69% subjects experienced at 3 months no incontinence and 55% at 6 months. Improvements in continence were also observed using the urodynamic assessments. Bladder capacity increased significantly: 276.5 ml ± 136.8 vs 472.9 ml ± 130.0 at month 1, 468.1 ml ± 133.6 at month 3 and 461.9 ml ± 141.9 at month 6 ($p < 0.001$). Although the urethral pressure decreased in the time. Improvements in mean change in total QoL score from baseline were recorded at all time-points.

Interpretation of results

This study has shown that the intra-detrusor injection of 300 units of botulinum A toxin is effective in treatment of neurogenic detrusor overactivity. Improvements in bladder function, in the urodynamics evaluations and in signs and symptoms were appreciable by subjects.

Concluding message

Actually, we can conclude that 300 UI of Botox ® seems to be effective and safe with SCI patients with neurogenic detrusor overactivity. We however observe a difference between our results and previous studies, on maintains restoration of the mid-term continence, and this in spite of a similarity of the urodynamics data.

1. Botulinum-A toxin for treating detrusor hyperreflexia in spinal cord injured patients: a new alternative to anticholinergic drugs? Preliminary results. J Urol 2000; 164: 692-697