144

Popat R[1], Harper M[1], Apostolidis A[1], DasGupta R[1], Fowler C J[1], Dasgupta P[2]
1. The National Hospital for Neurology and Neurosurgery , 2. The National Hospital for Neurology and Neurosurgery and Guys and St Thomas' Hospital

MINIMALLY INVASIVE OUTPATIENT ADMINISTRATION OF INTRADETRUSOR BOTULINUM TOXIN A INJECTIONS FOR DETRUSOR OVERACTIVITY: INITIAL RESULTS.

Aims of Study

When first line therapies for the management of the overactive bladder (OAB) failed, bladder surgery was often the only further option. However, many patients, particularly those with progressive neurological disease, were either unsuitable or unwilling to undergo this and some alternative to fill the therapeutic chasm has been much needed. Injection of botulinum toxin A (Botox ®) into the detrusor muscle is now emerging as the preferred second line treatment of OAB for both neurological and non-neurological patients. In the original description, Botox ® injections were delivered via a rigid cystoscope (1) which may require a general anaesthetic. Since starting to use this therapy, we have developed the technique of injecting into the bladder under local anaesthesia with a flexible cystoscope, so making this a minimally invasive, outpatient procedure. The aim of our study is to test the safety, tolerability and efficacy of this method.

Method

Patients are initially assessed with a voiding diary, questionnaire and cystometry. After informed consent and antibiotic prophylaxis, the bladder is accessed using a standard flexible cystoscope. This accommodates an Olympus 27G flexible injection needle with a working length of 1050mm and a needle length of 4mm. Patients with neurogenic incontinence are given 300 units of BOTOX diluted in 30mls of normal saline into the detrusor muscle into 30 injection sites whilst those with idiopathic overactivity receive 200 units to reduce the risk of urinary retention. The injections are distributed along the dome, 2 lateral and posterior walls of the bladder, sparing the trigone. The procedure takes between 15 to 20 minutes. A visual analogue pain score (1-10) is used to document the patient's experience of discomfort during the procedure. All patients are followed up by repeat voiding dairy, questionnaire and cystometry at 4 and 16 weeks.

Results

Thirty two patients have been treated so far (11 men, 21 women; 11 idiopathic and 21 neurogenic detrusor overactivity). The procedure was acceptable and well tolerated by all. On the visual analogue pain score, the mean +/- SD is 3.20 +/- 1.98 (n = 32) i.e. mild discomfort and all patients state they would be willing to have repeat injections given by this method. There have been no significant side effects reported. All patients have shown an improvement in their lower urinary tract symptoms at 4 weeks, supported by cystometric evidence showing a highly statistically significant increase in the mean maximum cystometric capacity (MCC) and a highly statistically significant reduction in the mean maximum detrusor pressure (Max pDet) during filling. There has also been a highly significant reduction in the mean number of incontinence episodes and the mean frequency of voiding episodes per day, following treatment.

	Pre treatment	Post treatment (4/52)	p value
Mean MCC (mls)	237.4 +/-162.4	523.6 +/- 130.0	<0.01
Mean Max pDet (cm H_2O)	72.3 +/- 44.5 33.0	+/- 25.4	<0.01
Freq of voids per day	12.6 +/- 4.04	6.84 +/- 2.30	<0.01
Leak episodes per day	2.96 +/- 3.47	0.83 +/- 1.14	=0.05

+/- value = standard deviation
All post treatment values are at 4 week

Conclusions

We have shown that injections of botulinum toxin are well tolerated when given using a custom made injection needle, via a flexible cystoscope, under local anaesthesia. Patients with lower limb spasticity in particular, are better able to tolerate a flexible cystoscope and all patients appreciate the relative ease and comfort of a flexible rather than rigid cystoscopy. Furthermore it can be offered to patients who would otherwise pose an anaesthetic risk. By avoiding the use of a general anaesthetic, theatre time and admission to hospital the cost effectiveness of the treatment is maximised.

Our findings present a strong case for the use of botulinum toxin as an outpatient procedure, for the treatment of the overactive bladder.

References

1.Schurch, B., et al., *Botulinum-A toxin for treating detrusor hyperreflexia in spinal cord injured patients: a new alternative to anticholinergic drugs? Preliminary results*. J Urol, 2000. 164(3 Pt 1): p. 692-7.