175

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

BOTULINUM TOXIN WORKS AS WELL IN THE SHORT TERM IN IDIOPATHIC DETRUSOR OVERACTIVITY (IDO) AS IN NEUROGENIC DETRUSOR OVERACTIVITY (NDO).

Hypothesis / aims of study

The first report of the use of injections of intra detrusor Botulinum toxin to treat intractable detrusor over activity was in patients with spinal cord injury. Since then, there have been several published reports of its success in treating patients with refractory NDO but little as yet on its effect in IDO and no previous comparisons of efficacy of treatment in the two groups. Our aim was to compare the response of botulinum toxin injections in patients with NDO and IDO.

Study design, materials and methods

Patients with refractory NDO and IDO who were continuing to have bothersome symptoms despite anticholinergics, were recruited to a study with LREC approval. After informed consent and antibiotic prophylaxis, 20ml of 2% lignocaine gel was instilled into the urethra. The bladder was accessed using a standard flexible cystoscope (Olympus Keymed, Milton Keynes, UK) which accommodates a flexible injection needle and has a working length of 1050mm and a needle length of 4mm (Olympus Keymed MAJ-656). Patients with NDO received 300 units of Botox diluted in 30ml of normal saline over 30 injection sites while patients with IDO received 200 units diluted in 20ml over 20 injection sites into the detrusor muscle. The lower dose in the IDO group was used to reduce the risk of needing to do CISC. The injections were given along the dome, posterior and lateral walls of the bladder. A visual analogue pain scale (0-10) was used to asses the discomfort of the procedure. Patients were assessed pre and post treatment at 4 and 16 weeks with urodynamics, voiding diary and quality of life questionnaire (UDI-6 and IIQ-7).

Results

Thirty nine patients with NDO and a mean age of 47.1 years (11 men, 28 women) and twenty one patients with IDO and a mean age of 47.8 years (11 men, 10 women) have been treated.
The data pre and post treatment from each group was compared using the paired, non parametric test (Wilcoxon matched pairs) and both groups were found to have a significant improvement in the LUTS and urodynamic parameters (NDO: n=30 and n=28 at 4 and 16 weeks; IDO: n=18 and n=15 at 4 and 16 weeks).

Data between patients with NDO was compared with that of patients with IDO, using the unpaired non-parametric test (Mann-Whitney test).

Comparison of the parameters (maximum cystometric capacity (mcc), maximum pdet during filling (pdet), frequency of voids in 24hrs (F) and leak episodes in 24 hrs (L)), between the NDO and IDO group pre treatment did not show a significant difference and implies that both groups are equally affected before treatment.

The percentage change from baseline at 4 and 16 weeks was compared between the two groups. All values are expressed as mean ± Standard error. (Figure 1-4)

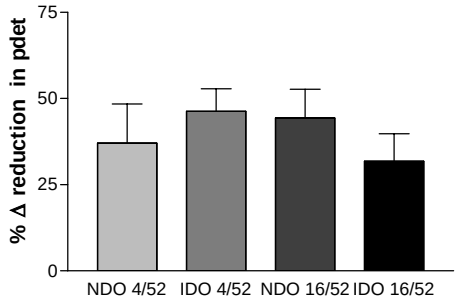

Figure 1

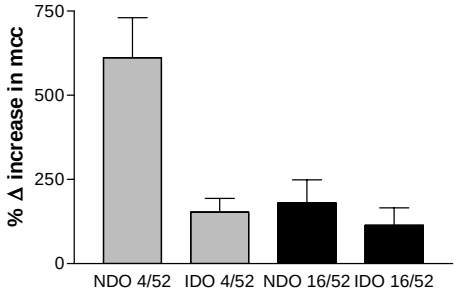

Figure 2

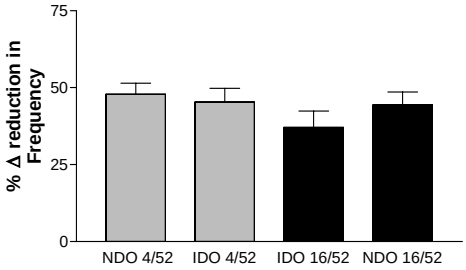

Figure 3

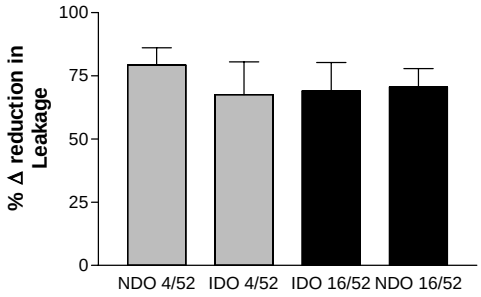

Figure 4

Pain Score	**NDO**	**IDO**	**p value**
Mean ± SE	3.28 ± 0.41	2.71 ± 0.38	0.593

Three out of the four patients with NDO not performing CISC prior to treatment have needed to do so since treatment. None of the patients in the IDO group required CISC prior to treatment, but three now need to do it.

Interpretation of results

Both groups respond extremely well to this form of treatment. We have demonstrated that patients with NDO have a significantly higher increase in the mcc at 4 weeks compared to patients with IDO, however, at 16 weeks, the % change in both groups is comparable. There is no difference between the two groups in the other parameters assessed, as seen above.

We did not find that neurologically intact patients found the procedure any more uncomfortable than those with sensory defects.

We do not know if CISC would have been necessary in a larger number of the IDO group if a higher dose had been used.

Concluding message

There is no significant difference in the response to treatment with intradetrusor injections of Botulinum toxin type A of patients with between the neurogenic and idiopathic detrusor overactivity in the short term.

Funding

Allergan Ltd