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Yong C[1], Al-Salihi S[1], Carey M[1]
1. *Royal Women's Hospital, Melbourne*

INTRAVESICAL BOTOX INJECTION FOR REFRACTORY OVERACTIVE BLADDER: COMPARISON OF 2 DIFFERENT PROTOCOLS AND ADVERSE OUTCOMES.

Hypothesis / aims of study

Onabotulinum toxin A (Botox) is a well practiced treatment for overactive bladder (OAB). Several intravesical injection techniques have been described in the literatures with no significant differences seen in therapeutic effects or adverse outcomes. There are variations in administration protocols, post-operative management protocols and threshold for commencing clean intermittent self-catheterization (CISC) based on post void residual (PVR) in the bladder (1-3). Our unit adopted two different protocols that varies in the volume of injections and the post operative managements. The aim of this study is to evaluate the differences in adverse events between the 2 treatment protocols and establishes guidance for management of urinary retention following botox treatment.

Study design, materials and methods

A clinical audit for patients who underwent intravesical botox injection for refractory overactive bladder between January 2016 and December 2016 was undertaken. First protocol (P1) involves using 100IU of Botox diluted in 10mls of saline, with 20 injections administered (0.5mls each injections) at the depth of 2mm into the bladder wall with trigone sparing. Patients were encouraged to void prior to discharge and subsequently review in clinic 6 weeks postop. The second protocol (P2) uses 100IU of Botox diluted in 20mls of saline, with 20 injections administered (1ml each) at 3mm depth into the bladder wall with trigone sparing.
Patients are then scheduled to have uroflowmetry 2 weeks postop, followed by a 6 weeks review in the clinic. Patients with elevated PVR>200mls during flow study were taught CISC and monitored by continence nurse specialist. In both protocols the surgeons used an adjustable tip needles that are designed specifically for cystoscopy injections into the bladder wall. The protocol selection was based on surgeon's preference. Adverse events were recorded during follow up and managed according to the protocol. Urinary tract infection (UTI) was treated with oral antibiotics according to the sensitivity once confirmed on the midstream urine. The primary outcome measure was the difference in adverse events between the two treatment protocols.

Results

Forty consecutive patients had intravesical botox during the study period, with 20 patients identified in each treatment protocol. The median age was 66 (range 27-79). Two patients in P1 complained of symptoms of incomplete emptying but were conservatively managed. One was unable to void and had indwelling catheter for 1 week. Two patients developed UTI and treated accordingly. Conversely three patients in P2 had voiding dysfunction with elevated PVR on uroflowmetry. All three patients were taught CISC for 3-4 weeks duration. Two cases of UTI were reported and treated in this group, with one of them having CISC. No other complications identified during the study.

Table 1: Adverse events between two treatment protocols

Group	UTI	Symptom of voiding dysfunction	CISC	Duration
P1	2	3		IDC for 1 week
P2	2	3	3	3-4 wks

Interpretation of results

The variation in Botox injection techniques and volume of botox dilution used does not appear to influence the incidence of adverse events. UTI and voiding dysfunction are the well recognised adverse effects. Peforming uroflowmetry 2 weeks following Botox injection increases detection of voiding dysfunction with subsequent recommendation of CISC. Nevertheless, complete resolution of voiding dysfunction symptom were observed in subjects of both treatment protocols within the follow-up period.

Concluding message

This study demonstrated no differences in adverse events between two treatment protocols. However, there might be a tendency for unnecessary uroflowmetry leading to additional intervention with the second protocol. Voiding dysfunction following Botox injection spontaneously resolved with conservative management.

References

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Disclosures

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