

## **INTRAVESICAL RESINIFERATOXIN (RTX) IMPROVES LOWER URINARY TRACT SYMPTOMS (LUTS) AND URODYNAMIC PARAMETERS IN PATIENTS WITH URGENCY AND FREQUENCY DUE TO INCREASED BLADDER SENSATION**

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**INTRODUCTION & OBJECTIVES:** Intravesical RTX has been shown to be effective when used to treat detrusor overactivity (DO), either neurogenic or idiopathic. In contrast, patients with interstitial cystitis failed to respond to this treatment. We investigated the efficacy of intravesical RTX in patients with urgency and frequency due to increased bladder sensation (previously 'sensory urgency').

**MATERIAL & METHODS:** Patients with intractable urgency, frequency (with or without urgency incontinence or bladder pain/discomfort) and with no evidence of DO during standard voiding cystometry were recruited. Patients received pre-treatment analgesia with an intravesical instillation of 50 mL 2% lignocaine solution for 20 min. Bladder was emptied and a single intravesical instillation of 100 mL of 50 nM RTX (ICOS Corporation, USA) was given via a silicone catheter and held in the bladder for 30 min, followed by saline rinse. Patients were assessed at 1, 3 and 6 months (mos) with bladder diary, cystometry and check cystoscopy, during which biopsies were taken for research and histology. We examined changes in: maximum cystometric capacity (MCC), volume at first desire to void (FD vol), maximum flow rate, maximum detrusor pressure during voiding, 24-hour and daytime frequency, nocturia, mean micturition volume (MMV), number of micturition episodes associated with urgency per 24 hours and number of incontinence episodes per 24 hours. Patients were also asked about changes in the perception of bladder pain.

**RESULTS:** Results are expressed as mean  $\pm$  standard error. Fifteen patients (mean age  $52.5 \pm 3.6$  years, range 31-82) were treated. Fourteen (93.3%) showed greater than 50% improvement in at least one urodynamic or LUTS parameter in the first follow-up and were considered responders to RTX. Significant improvements (paired t test) from baseline were noted in the 9 patients who have completed the 6-mos follow-up to date in FD vol ( $61.3 \pm 11.6$  v  $115.9 \pm 19.2$ ,  $P=0.019$ ), MMV ( $146.4 \pm 22.8$  v  $183.8 \pm 30.4$ ,  $P=0.006$ ), 24-hour frequency ( $15.05 \pm 1.6$  v  $10.67 \pm 1.2$ ,  $P=0.014$ ) and daytime frequency ( $10.4 \pm 0.9$  v  $8.46 \pm 1.5$ ,  $P=0.03$ ). MCC showed significant improvement at 3-mos ( $238.7 \pm 31.8$  v  $320.1 \pm 29.1$ ,  $P=0.003$ ). There was no change in degree of incontinence in the 6 patients who were incontinent prior to treatment. Five out of 7 patients with bladder pain had a 'very good' response (>50% improvement) at 1-mo, 3/7 at 3-mos and 1/7 at 6-mos. Two patients developed urinary tract infection after check cystoscopy and biopsies. One patient developed partial retention and was managed with a suprapubic catheter.

**CONCLUSIONS:** Intravesical RTX induces significant sustained improvements in LUTS and urodynamic parameters in patients with frequency and urgency due to increased bladder sensation, and may be considered an effective and safe treatment option in such patients.