

## **EFFECTIVENESS OF DETRUSOR BOTULINUM A TOXIN IN TREATMENT OF DETRUSOR OVERACTIVITY REFRACTORY TO ANTICHOLINERGICS**

### **Aims of Study**

Urinary incontinence due to detrusor overactivity is difficult to treat. Patients may not be effective or do not tolerate anticholinergics due to adverse effects. Many therapeutic modalities have been developed but the results are not completely satisfactory. This study was designed prospectively to treat such patients with detrusor injection of Botulinum A toxin.

### **Methods**

Twenty patients with detrusor overactivity who have been failure treated with anticholinergics for more than 6 months were enrolled in this study. Patients received detrusor injection of 200 units of Botulinum A toxin under intravenous general anesthesia. The Botulinum A toxin was injected into 40 sites at posterior and lateral walls of the urinary bladder, 5 units for each injection. Urethral Foley catheter was indwelled for 1 day and antibiotics for 7 days. The results of urodynamic study, symptom score and quality of life index were compared between baseline and at 1 month after treatment.

### **Results**

Nine women and 11 men aged 7 to 83 years old (mean 66.5) were enrolled. All patients had frequency urgency and urge incontinence which were refractory to anticholinergic treatment for more than 6 months. Among 6 patients with neurogenic detrusor overactivity, 3 had previous stroke, 1 had Parkinson's disease, and 2 had chronic spinal cord lesions. Among the other 14 patients with non-neurogenic detrusor overactivity, 8 had previous bladder outlet obstruction or transurethral prostatectomy and 6 were idiopathic. After detrusor Botulinum A toxin injection, 8 patients regained urinary continence, 8 patient had improvement in episodes of incontinence, and 4 patients failed treatment. The total success rate was 80%. One patient who received long-term aspirin had gross hematuria for 3 days. No urinary tract infection or frank urinary retention was experienced in any patient. One patient with detrusor overactivity and inadequate contractility had increased postvoid residual urine after treatment and clean intermittent catheterization was necessary for the initial 2 months. Compared with pre-treatment, the urodynamic results revealed significant increases in cystometric capacity, significant decrease in voiding pressure, and significant decrease in maximal flow rate. The residual urine volume also showed significant increase after treatment. Ten patients felt difficulty in initiation of urination and 6 patients had residual urine sensation after treatment. Nevertheless, among the 16 patients with successful result, all had significant improvement in quality of life index after treatment. The maximal effect was noted at 10- 14 days after treatment and the duration of therapeutic effect lasted for 4 to 7 months (mean 5.3).

### **Conclusions**

This study demonstrated that detrusor injection of 200 units of Botulinum A toxin was effective in treatment of detrusor overactivity that was refractory to anticholinergic treatment without resulting in frank urinary retention or impaired voiding efficiency. The more injection sites (40 sites) with smaller dose of Botulinum A toxin (5 units each) may account for the satisfactory result of this study. However, patients with detrusor overactivity and inadequate contractility should be carefully selected because increased residual urine may occur after treatment. Botulinum A toxin is promising in treating intractable urinary incontinence due to detrusor overactivity.