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EVALUATION OF SHORT TERM CLINICAL EFFECTS AND PRESUMPTIVE MECHANISM OF BOTULINUM TOXIN TYPE A AS A TREATMENT MODALITY OF BENIGN PROSTATIC HYPERPLASIA

Hypothesis / aims of study
To evaluate the effect and presume the putative mechanism of botulinum toxin type A (BTA) applied to the treatment of benign prostatic hyperplasia (BPH).

Study design, materials and methods
A total of 52 patients with symptomatic BPH were evaluated. Transperineal intraprostatic injection under transrectal ultrasonography was carried out without anesthesia. BTA dissolved in 4 to 9 ml saline was used from 100 U to 300 U according to prostate volume. 26 received only BTA (BT group) and 26 both BTA and one month of α-adrenergic antagonist (BTα group). The therapeutic outcomes were evaluated by comparing parameters such as international prostate symptom score (IPSS), quality of life, prostate specific antigen (PSA), prostate volume, post-void residual urine and peak urinary flow rate.

Results
At a one month follow-up, eighteen patients in the BT group and 21 in the BTα group had subjective symptomatic relief (P = 0.337). Only IPSS questionnaire 5 (weak stream) was significantly different between the BT group and BTα groups (P = 0.034). At a three month follow-up, thirty-nine patients had subjective symptomatic relief. IPSS, quality of life, prostate volume, peak urinary flow rate and residual urine were improved (IPSS decreased by 30.3%; quality of life, 34.4%; prostate volume, 13.1%; residual urine, 34.3%, and peak urinary flow rate increased by 15.5%). The storage symptoms were improved more than the voiding symptoms. Additionally, about fifty percent of the patients who improved in the voiding symptom expressed improved erectile function, and patients who took nitric oxide (NO) donor showed no effect.

Interpretation of results
The differences after a one month evaluation between the BT group and the BTα group might suggest that adrenergic influence could be relatively reinforced because of anticholinergic effect of BTA. NO would be involved in a BTA action mechanism in BPH.

Concluding message
BTA injection seems to be an alternative treatment for BPH. Additional histopathologic and pharmacophysiological investigations of BTA treatment are indicated before BTA effects from our result can be generalized in BPH treatment.