

Botulinum-A Toxin Intravesical Injection in Neurogenic and Nonneurogenic Bladder Disorders: KFSH-D Experience

Introduction and Objective: To evaluate the efficacy and safety of intradetrusor muscle injections of Botulinum-A Toxin to treat patients with neurogenic and idiopathic detrusor overactivity and in painful bladder syndrome resistant to conventional medical treatment, seen at King Fahed Specialist Hospital Dammam from January 2008 till December 2011.

Materials and Methods: In this prospective nonrandomized, ongoing study, a total of 33 patients so far were included, 19 with neurogenic detrusor overactivity, 6 with idiopathic overactive bladder and 8 with painful bladder syndrome, aged between 5 and 55 years, 10 males and 23 females. Pretreatment evaluation included clinical examination, baseline voiding diary, urine culture, renal function tests, ultrasound of urinary tract and urodynamic investigation. Botulinum-A Toxin (BTX-A) (BOTOX, ALLERGAN) was injected using rigid cystoscope at 30 sites including the trigone, a total of 300 units or 12 units/kg in children for neurogenic, and 200 units for nonneurogenic cases. Follow up at 1, 3, 6 and 12 months with bladder diary, visual analogue scale for pain and urine analysis; and urodynamic study at 3 months.

Results: In neurogenic detrusor overactivity mean follow-up was 9.47 months, maximum cystometric capacity significantly increased from mean \pm sd of 138.6 ± 95 ml to 291 ± 146 ml $p < 0.0001$, mean maximum detrusor pressure during filling decreased from 68.7 ± 33 cmH₂O to 32.8 ± 11 cmH₂O $p = 0.021$, mean detrusor compliance increased from 5.8 ± 6.7 to 10.4 ± 12 ml/cmH₂O $p = 0.029$. CIC volume significantly increased from a mean of 132.6 ± 67 ml to 198 ± 97 ml $p < 0.0001$ at 1 month and to 220.9 ± 125 ml at 3 months $p = 0.01$, and 73.68% achieved complete dryness and 10.5% partial improvement of incontinence score and 15.7% no improvement. The duration of response varied between 1 to 12 months. In idiopathic detrusor overactivity, and painful bladder syndrome, mean follow up of 5.78 months, 54.5% achieved complete dryness and 9% had improvement of incontinence score from severe, to mild or moderate. Mean frequency decreased from 18 ± 7.1 to 10.3 ± 7.1 $p < 0.0001$, IUSS decreased from 3 to (0 or 1) in 42.85% and to 2 in 28.5%. mean functional capacity increased from 301 ± 136 to 386 ± 133 ml $p = 0.034$. One patient had disappearance of the pain and 3 patients had improvement of pain score from moderate to mild on VAS. After Botox injection, 3 patients had transient pain at bladder site, 3 patients had urine retention managed by CIC and resolved after 1.4 and 8 months, 4 had difficulty of voiding with large PVR managed by timed voiding and resolved within 6 months.

Conclusions: Our results shows that intradetrusor Botulinum-A toxin may be an efficient and safe treatment and improve lower urinary tract symptoms and urodynamic parameters, in Neurogenic, Nonneurogenic bladder and painful bladder syndrome resistant to conventional treatments.