

PUDENDAL NERVE CONDUCTION VELOCITY ASSESSMENT IN PATIENTS WITH REFRACTORY URINARY URGE INCONTINENCE SECONDARY TO NEUROGENIC DETRUSOR OVERACTIVITY MAY OFFER PREDICTIVE VALUE FOR PATIENTS TREATED WITH BOTULINIUM TOXIN TYPE A

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Objectives: Botulinum toxin type A (BoNT-A) has shown promise in treating patients with refractory urinary urge incontinence (UUI) secondary to neurogenic detrusor overactivity (NDO). However, it is not uniformly successful and it is still difficult to predict which patients may respond well. This study examines our early experience using pudendal nerve conduction testing as part of the diagnostic compendium and examines its usefulness as a possible predictor of success of treatment with biological neuromodulation using BoNT-A.

Methods: We conducted a prospective study of patients with refractory UUI with underlying neurological disease. A total of 12 patients (five men and seven women) with proven NDO and UUI were included in the study. The twelve patients underwent urodynamic studies with pelvic floor muscle electromyography and pudendal nerve conduction testing performed with the UroVal BRS (UroVal, Inc., Manhattan, KS). After NDO was confirmed, the patients were treated with 200 units of BoNT-A injected incrementally at 30 different sites. Follow-up was every week for the first 3 weeks and then at weeks 6, 12, and 18. Clinical results were recorded, and repeat urodynamic studies were conducted at week 12.

Results: At the end of the follow-up period, seven patients were clinically dry and five were using 40% to 50% fewer pads. In addition, maximum cystometric capacity had improved in all patients (mean change of 73.3 cc, $p < 0.001$). Interestingly, all seven patients who became clinically dry had pudendal nerve conduction velocities of <100 ms (35–45 ms is considered within normal limits) and those who remained wet had velocities that were much higher.

Conclusions: In patients with severe refractory UUI secondary to NDO, pudendal nerve conduction velocities could serve as a predictor of success of treatment of patients with biological neuromodulation using BoNT-A.