Video-urodynamic Predictive Factors of Successful Urethral OnabotulinumtoxinA Treatment of Neurogenic or Non-neurogenic Urethral Sphincter Hyperactivity - 423

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Table 1. The patients and baseline video-urodynamic characteristics between patients with good and poor treatment outcomes

	Good outcome (n=58)	Poor outcome (n=37)	Univariate P value
Age (years)	60.2 ± 22.1	59.3 ± 19.4	0.842
Gender			0.287
Male (n=39)	22 (56.4%)	17 (43.6%)	
Female (n=56)	36 (64.3%)	20 (35.7%)	
Neurogenic (n=42)	27 (64.3%)	15 (35.7%)	0.359
Non-neurogenic(n=53)	31 (58.5%)	22 (41.5%)	
First sensation of filling (mL)	122.0 ± 53.2	147.2± 67.0	**0.046**
CBC (ml)	309 ± 141	358 ± 126	**0.088**
Detrusor pressure (cmH_2O)	36.1 ± 27.9	24.2 ± 19.3	**0.027**
Abdominal pressure (cmH_2O)	24.5 ± 27.3	33.8 ± 28.7	0.117
Maximum flow rate (mL/s)	7.64 ± 5.03	5.16 ± 4.46	**0.017**
Post-void residual (mL)	169 ± 130	251 ± 149	**0.006**
Open bladder neck #	56 (87.5%)	8 (12.5%)	**<0.001**

Table 2. The treatment outcome in patients with neurogenic or non-neurogenic voiding dysfunction with good therapeutic outcome

	Voiding dysfunction	N	Baseline	Post-treatment	P value
IPSS	Non-neurogenic	31	21.3 ± 6.03	12.7 ± 4.92 *	0.844
	Neurogenic	27	23.4 ± 6.10	15.8 ± 5.36 *	
Qmax (mL/s)	Non-neurogenic	31	8.85 ± 3.61	14.1 ± 6.20 *	0.946
	Neurogenic	27	6.63 ± 5.22	10.6 ± 4.91 *	
Volume (mL)	Non-neurogenic	31	169 ± 77.8	216 ± 98.4*	0.408
	Neurogenic	27	82.4 ± 73.6	149 ± 84.7*	
PVR (mL)	Non-neurogenic	31	141 ± 105	74.4 ± 69.0*	0.993
	Neurogenic	27	170 ± 128	91.6 ± 75.4*	
Duration (M)	Non-neurogenic	31	NA	9.55 ± 4.18	**0.033**
	Neurogenic	27	NA	7.44 ± 2.91	

Aims

This study analyzed treatment outcomes and identified predictive factors for successful urethral onabotulinumtoxinA treatment of voiding dysfunction due to urethral sphincter hyperactivity.

METHODS

Patients with voiding dysfunction due to urethral sphincter hyperactivity were retrospectively reviewed. Patients were treated with injections totaling 100 U of onabotulinumtoxinA into the urethral sphincter. Treatment outcomes were assessed 1 month after treatment using the Global Response Assessment. Treatment outcomes were analyzed by demographic and baseline video-urodynamic characteristics.

RESULTS

Of the 95 patients included, good outcomes were reported in 58 (61.1%) patients. Treatment outcome was not related to age, gender, or voiding dysfunction subtype. Patients with good outcomes had a significantly smaller volume at first sensation of filling (p=0.046), greater Pdet (p=0.027), higher Qmax (p=0.017) and smaller PVR (p=0.006). An open bladder neck during voiding was the only predictor of successful therapeutic outcome (88% good outcomes, 12% poor outcomes, p<0.001). Patients with non-neurogenic voiding dysfunction had a significantly longer therapeutic duration than those with neurogenic voiding dysfunction (9.55±4.18 vs 7.44±2.91 months, p=0.033). Increased urinary incontinence was reported in 18 patients, including 6 with stress urinary incontinence and 12 with urgency urinary incontinence.

CONCLUSIONS

OnabotulinumtoxinA urethral sphincter injection is effective in 61.1% of patients with voiding dysfunction due to neurogenic or non-neurogenic voiding dysfunction refractory to conventional medical treatment. Careful evaluation of the bladder neck opening at baseline provides predictive value for a successful treatment outcome. However, urinary incontinence might be a *de novo* adverse event after the urethral sphincter onabotulinumtoxinA injections.