

EFFECTIVITY AND COMPLICATIONS OF REPEATED BOTULINUM TOXIN-A INJECTIONS IN PATIENTS WITH THERAPY RESISTENT DETRUSOR OVERACTIVITY

Hypothesis / aims of study

Injection in the bladder with botulinum toxin-A, is an effective treatment at patients with therapy-resistant detrusor overactivity [1,2]. However, It has been shown to be a treatment with a temporary effect which normally lasts no more than several months up to a year [1,2]. After every injection with botulinum toxin-A, there is a risk of residual volume and therefore, the indication to clean intermittent self-catheterisation (CISC). In this study we aimed to study the length of the effect of repeated botulinum toxin-A injections in the bladder of patients with an overactive bladder, due to neurogenic detrusor overactivity as well as idiopathic detrusor overactivity. Moreover, the complications and satisfaction of these patients were determined.

Study design, materials and methods

Between 2004 and 2011, one hundred and four patients with proven urge-incontinence were treated with botulinum toxin-A (Botox®). Patients who were treated with at least three injections were included in this study. Sixteen e patients met the inclusion criteria and had three or more effective injections. The total dose per injection of botulinum toxin A varied between 200-300 IU. The interval between two subsequent injections was calculated in days. Data of the satisfaction and complications were collected 1-2 weeks after every injection. Statistical analysis of the length of effect is done with one-way analysis of variance (ANOVA).

Table 1: Inter-injection interval

Botulinum toxin A injection interval	1 st -2 nd [95%CI]	2 nd -3 rd [95%CI]	3 rd -4 th [95%CI]	4 th -5 th [95%CI]
Number of patients	16	16	6	2
Inter-Injection interval in days	371,1 [285,3-456,8]	440,4 [298,7-582,2]	417,8 [159,0- 676,6]	346,5 [752,6-1445,6]

Table 2: CISC & UTI per injection

Complications	# of patients	# of patients using CISC	# of patients with UTI
Injection 1	13	5 (38,5%)	3 (23,1%)
Injection 2	13	9 (61,5%)	4 (30,8%)
Injection 3	13	10 (76,9%)	4 (30,8%)
Injection 4	4	3 (75,0%)	1 (25,0%)
Injection 5	1	1 (100%)	1 (100%)

Table 3: Satisfaction per injection

Injection number	1	2	3	4	5
Very pleased	8	4	7	2	1
Content	6	12	6	3	-
Poor	2	-	1	-	-
Unsatisfied	-	-	1	1	-
Unknown	-	-	1	-	1
Total	16	16	16	6	2
Total - Unknown ^a	16	16	15	6	1
Very pleased	50,0%	25,0%	46,7%	33,3%	100%
Very pleased + Content	87,5%	100%	86,7%	83,3%	100%

Results

All patients were female (mean age 54,9). The interval between consecutive injections did not change significantly ($p=0,815$). The mean interval between the first and second injection was 371,1 days ($n=16$), between the second and third 440,4 days ($n=16$), between the third and fourth 417,8 days ($n=6$) and between the fourth and fifth injection 346,5 days ($n=2$). The mean inter-injection interval was 335,6-473,6 days (95% CI) [table 1].

Patients required Clean Intermittent Self-Catheterization (CISC) more often when the number of injections climbed. After the first injection, 5 patients (38,5%) required CISC, after the third injection, 10 patients (76,9%) required CISC. As CISC may be necessary after any injection, for a longer or shorter period. Some patients may never be able to void by themselves [table 2]. After the first injection 3 patients (23,1%) had one or more urinary tract infections. After the third injection 4 patients (30,8%) had one or more urinary tract infections. Of all patients, 87,5% stated that they were satisfied with the first injection. After the third injection 86,7% of the patients were satisfied [table 3].

Interpretation of results

Each repetition of botulinum toxin-A injections for both idiopathic as well as neurogenic detrusor overactivity, seems to be as effective as the one before. Moreover, patients seem to be pleased or content with the treatment, even though they are often dependent of CISC after the treatment. The rate of CISC usage seem to raise as the number of injections raises. CISC may be used after any injection for a longer or shorter period.

Concluding message

It does not seem to matter whether it is a first injection or a repeat injection to the persistence of the length of effect of botulinum toxin A. It seems that urinary retention and thus the use of CISC is needed more often after repeated injections. Urinary tract infections do not seem to happen more often. Overall patients were content or very pleased with the effect of the injections, even if patients consider CISC and urinary tract infections.

References

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2. Grosse J, et al. Success of Repeat Detrusor Injections of Botulinum A Toxin in Patients with Severe Neurogenic Detrusor Overactivity and Incontinence. Eur Urol. 2005;47 653-65

Disclosures

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