LONG TERM EFFICACY OF BOTULINUM TOXIN IN BLEPHAROSPASM: A 27 YEAR RETROSPECTIVE STUDY

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Objective

Aim of this study is to evaluate the long term effect, safety and tolerance of botulinum toxin treatment in patients with blepharospasm (BS).

Methods and materials

We conducted a retrospective analysis on the patient treated for BS with Botulinum Toxin (BoNT) injections at the movement disorder clinic of the University of Messina from 1989 to 2017. We collected data about demography, dosage, sites of injection, efficacy, effect duration at first visit, at the fourth visit (short-follow up) and at the last available visit (long-follow up). Data on occurrence and type of side effects were collected too.

Results

Out of 139 patients with BS we included in this study 52 patients with a treatment duration longer than 10 years. Mean disease duration was 18.7 ± 5.6 years and mean treatment duration was

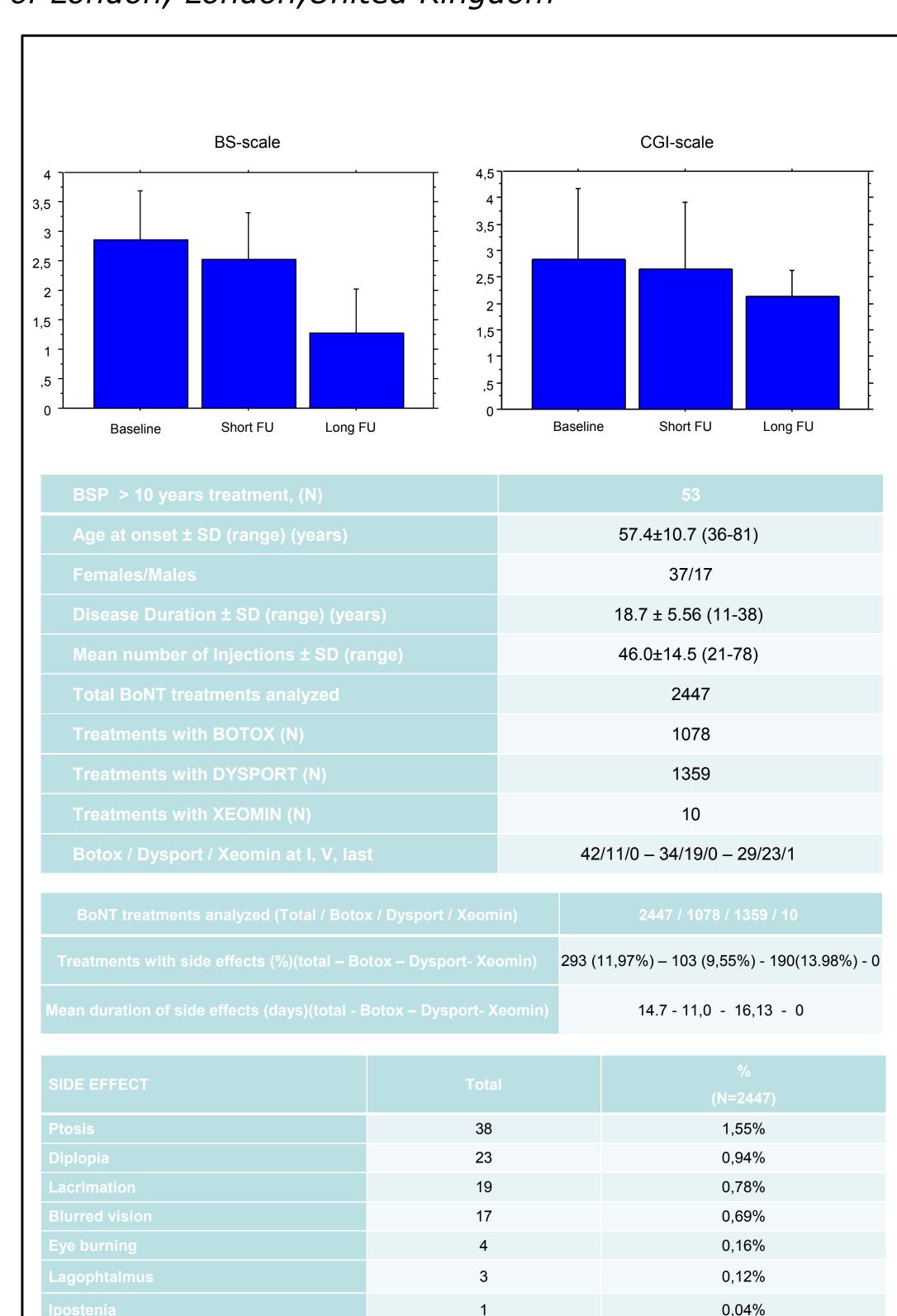
 16.3 ± 4.6 years. Each patient underwent to a mean of $6,4\pm14.3$ treatments. A total of 2421 sessions were analyzed. We used Botox in 1064 (45.3%), Dysport in 1349 (57.5%), and Xeomin in 10 (<0.1%). BS severity improved at long follow up in comparison with first visit and short follow up. Effect duration and BoNT dose increased at long follow up. Patients satisfaction regard the treatment remain good throughout the follow up and improved at long follow up in comparison with first visit. We registered side effect in 12.1% of treatment and the most common side effect was ptosis.

Discussion

BoNT is a consolidated therapy for focal dystonia but few studies investigated the long-term efficacy of BoNT in BS so far. Our data confirm the efficacy of such therapy in patient treated for more that 10 years. Noteworthy we observed improvement of BS overtime, this can be explained with a sustained effect of BoNT over hyperactive muscles. Side effect rate remain stable for the whole duration of the study and them were generally mild.

Conclusions

BoNT is a safe and effective therapy for BS even in patient treated for more than 10 years. Our study is so far one of the longest of literature to assess the long term effects of BoNT in BS.



Literature review

Reference	Number	Duration of	Adverse effects	Type of	Number of	Mean BoNT	Outcame
	of patients	treatment (years)range (avg)	rate	toxin	cycles	dose	
Ababneh (2014)	21 among 32 having BS or HFS	10-19 (14.5±3.1) >10	11.5%(first year) - 3.8%(last year)	Botox	-	60.93U	Higher dose last year, lower AE last year. Not significant increase of duration. Success rate mantained
Arquino (2012)	113	6 (avg) max 10 years	14%	Botox	-	-	Only improvement at I injection analized. No difference effect duration.
Bentivoglio (2009)	128	>15	24% of sessions with AE (> dysport)	Botox/Dyspor t 1009/332	10.6±8.9	34±15 (Botox) 152± 54 (Dysport)	Significant increase of dose over time. Greater duration with Dysport. Improving over time. Improving was stronger with dysport.
Cillino (2010)	73	>10	23/73 patient with AE (31.5%)	Botox	-	28.2±12.2	96% patient subjectively improve Dose increase
Czyz (2013)	26	19.4 mixed with maige and HFS >15	41% at first year 20% at follow-up	Botox, very few infiltration with rima B myobloc		69.6±24.7 initial 67.0±23.5 final (mixed)	Benefit mantained Decrease in AE with time.
Gil Polo (2012)	34	0 - >10 (15PT >10)	85.3% of patients with AE	Botox/Dyspor t	-	25 U at starting , 37.5 U at 3 years, and 40 U at 5 and 10 years.	Dose increase in first year of treatment
Hsiung (2012)	36	>10	61% patients, 10 % cYcles	Botox	-	51.5	Efficacy mantained
Kollewe 2014	288	11.2±4.1 (2- 21)	Total 3.0 botox 3.2 dys 2.8 xeo 2.3	Botox/Dyspor t/Xeomin	-	47±10 Botox 120±35 Dysport 62±11 Xeomin	No increaese in dosage, no difference in CGI of patien
Ramirez- Casteneda (2014)	34 among 128/89 (?) with other dystonia	18.5 (Mixed with other dystonia) >10	9.5%	Almost only Botox	-	75U	Not measured
Silveira- Moriyama (2005)	30	4.95 (avg) max 10 years	53% of patients at least 1 AE	Botox	12.63 (avg)	-	93% of patient improve after first treatment. No decrement of response in FU
Steitova (2014)	9	18.2	5/9 with AE	Dysport	65	280-160U	Improved
	102	>15 1	43.1% of patients with AE	Xeomin		64.7-72.7	Improved both BS score and CGI
Truong (2013)			WIIII AL				

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