Long-term stable efficacy of botulinum toxin A in facial movement disorders with no need for increasing dose

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ABSTRACT

- We examined whether treatment efficacy maintained or changed over time with two products, Botox and Dysport, in patients with hemifacial spasm(HFS), facial synkinesis (FS) and benign essential blepharospasm (BEB).
- Eighty seven consecutive patients (51 women, 36 men) who had undergone treatment for ≥6 years. Long term effects, as well as side effects of Botox or Dysport local injections were evaluated.
- The first three treatments were considered the titration period and not taken into account when testing for dose changes. Mean treatment duration was 10years (range 6–11, SD 1.0), 2441 treatments were administered, 1162 with Botox and 1279 with Dysport, the two brands were interchanged as needed. Good to full improvement was seen in 90% of patients both with both brands.
- Injection doses and treatment responses were consistent during the study with both drugs. No major side effects were reported, and relatively few minor adverse events were reported, with clear reduction from the titration period (6.1%), to the remainder of the study (3.9%)
- Botulinum toxin A (BTX-A) is a satisfactory long-term treatment without need for dose increase over. Both Botox and Dysport were effective when used interchangeably

INTRODUCTION

- BTX-A local injections into the over activated muscles have been shown to be effective in treating HFS, FS and BEB and other dystonias.
- Repeated injections that are needed over time raise questions about the long-term efficacy of treatment and the need to increase the dose over the course of treatment. Failure of response to repeated injections of BTX-A has been reported.
- Changing treatments to different formulations of botulinum toxin A has been suggested as one way to overcome primary or secondary treatment failure.
- We hypothesized that the continuous, long-term treatment with BTX-A using both products with exchanges between them for HFS, FS and BEB, can maintain efficacy without dose increase needed and with a low incidence of adverse events.

METHODS & RESULTS

Table 1:

Demographic data: total of 87 patients, most of them women, with age average onset of illness around 50 years

Disorder	Patients (%)	Female (%)	Initial mean age range (yr)
HFS	42(48)	22(52)	52
BEB	26(30)	18(69)	69
FS	19(22)	11(57)	58
Total	87	51	59

Table 2:

Distribution of Botox / Dysport injections by type of disease

Disorder	Botox	Dysport	Both	> one shift
HFS	5	4	33	5
BEB	2	3	21	3
FS	1	2	16	2
Total	8	9	70	10

Table 3:

Treatment Response by Likert scale	Botox	Dysport	Total
Point 0	0	0	0
Point 1	24(2.2%)	29(2.5%)	53
Point 2	12 (1.1%)	14 (1.2%)	26
Point 3	78 (7.2%)	76 (6.4%)	156
Point 4	965 (89.4%)	1061 (89.9%)	2026
Total	1079	1180	2259*

Fig.1 - Percent with full improvement by visit number.

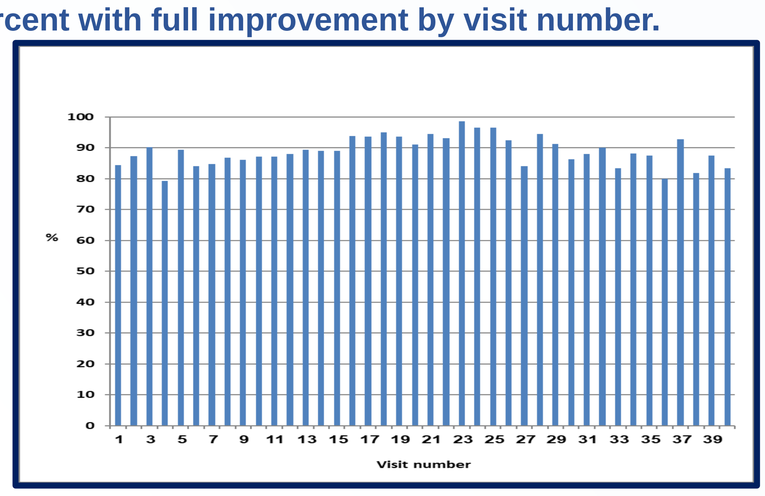

Table 4:
Side effects

Visit number	No.of Participants	Any Side Effect	Specific Side Effects
1-3 (Titration period)	261	16 (6.1%)	Lacrimation 3 (1.1%) Diplopia 2 (0.8%) Ptosis 4 (1.5%) Hematoma 1 (0.4%) Drooling 1(0.4%) Over weakness 5 (1.9%)
4-th through end (Follow-up period)	2242	88 (3.9%)	Dry eye 3 (0.1%) Lacrimation 24 (1.2%) Diplopia 7 (0.3%) Ptosis 33 (1.6%) Hematoma 9 (0.4%) Drooling 13(0.6%) Over weakness 5(0.2%)

DISCUSSION

- Our retrospective study, showed long term effective response to BTX- A using of one product or the substitute, in which doses did not change over time, during a follow-up period of almost 10 years excluding the titration phase. Excluding this phase of treatment resulting in long-term efficacy of the BTX-A without the need for dose escalation.
- Czyz et al use this method and found that treatment dosage remained unchanged for a long-term follow up of 19.4 years in 37 patients of facial dystonia
- We also found that the long-term clinical improvement percentage is 90% for an average duration of 10years, which is higher in comparison to the average of 75% found in other studies.
- Switching from one preparation to another can also be effective for clinical improvements and maintaining efficacy of treatment over time, as was found in a previous study where treatment was shifted from Botox to Dysport in patients with BEB and HFS when Botox treatment failed.
- Transient ptosis, lacrimation and diplopia were the most common adverse events seen in our patients, which is also consistent with previous studies.
- Most complications of BTX-A injections, such as ptosis and diplopia, are thought to be due to local effects and unwanted diffusion of the biologic activity neurotoxin into adjacent muscles.

CONCLUSION

- Our study showed that BTX-A is a satisfactory treatment for long-term therapeutic response in patients with HFS, FS and BEB, using interchangeable products of both formulations.
- Long-term treatment was shown to be safe, with a small percentage of minor adverse effects that subside with time, and with efficacy maintained over the years without the need to increase the dose of treatment.