Retrospective chart review to evaluate a novel botulinum toxin injection pattern for treatment of blepharospasm and hemifacial spasm

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Introduction

Periodic botulinum toxin therapy is the treatment of choice for benign essential blepharospasm (BEB) and hemifacial spasm (HFS).[1] BEB is a bilateral form of focal dystonia presenting with eyelid spasms, involuntary eye closure, and enhanced spontaneous blinking, originating from basal ganglia dysfunction.[2] HFS is a unilateral, peripheral neuropathy-induced movement disorder causing facial muscle contraction, primarily attributed to vascular compressions of the seventh cranial nerve in the posterior fossa) or secondary to facial nerve injury with aberrant regeneration.[3] The purpose of this study was to compare patient adherence, attrition, and complication rates between one novel and one established botulinum toxin injection pattern for the treatment of BEB and HFS.

Methods

In this retrospective chart review, a novel eyelid margin botulinum toxin injection pattern was compared to an established pattern for the treatment of BEB and HFS. Included were patients who had received both patterns. Excluded were patients who had received either pattern alone. Primary endpoints were adherence rate to the new pattern, attrition rate back to the old pattern, and complications of the new pattern.

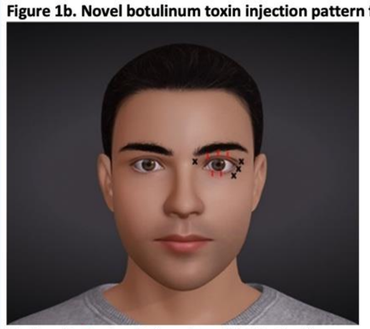
Results

A total of 23 patients (8 BEB, 15 HFS) and 1007 injections (398 BEB, 609 HFS) were included. 100% of BEB and 67% of HFS patients were women. Mean age was 75.3±8.5 years for BEB, and 67.5±8.3 years for HFS. Mean dosage for BEB was 77.4 units (U) using the old pattern, 87.8U for new, and for HFS was 41.7U for old, 47.4U for new.

Figure 1a. Established botulinum toxin injection pattern for hemifacial spasm (HFS) – 25 units

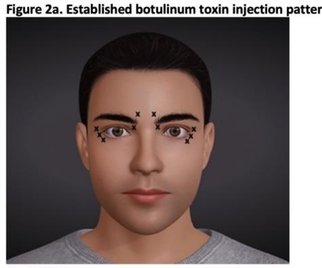
X = 5 units

Figure 1b. Novel botulinum toxin injection pattern for hemifacial spasm (HFS) – 25 units



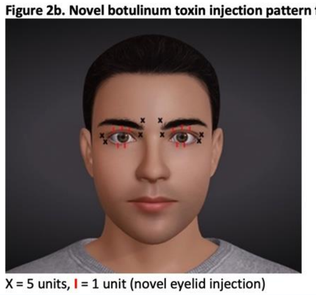
X = 5 units, I = 1 unit (novel eyelid injection)

Figure 2a. Established botulinum toxin injection pattern for benign essential blepharospasm (BEB) – 50 units



X = 5 units

Figure 2b. Novel botulinum toxin injection pattern for benign essential blepharospasm (BEB) – 50 units



X = 5 units, I = 1 unit (novel eyelid injection)

Results (continued)

Mean time between follow-up for BEB was 92.7 days for old, 101 for new, and for HFS was 116 days for old, 120 for new. Total adherence rate for the new pattern was 50% of BEB and 53% of HFS patients. 25% of BEB and 33% of HFS patients adhered immediately to the new pattern, whereas those who adhered eventually after switching back to the old pattern at least once were 25% of BEB and 20% of HFS patients. Total attrition rate back to the old pattern was 50% of BEB and 47% of HFS patients. 12.5% of BEB and 40% of HFS patients switched back immediately to the old pattern, whereas those who switched back eventually after trying the new pattern at least once were 37.5% of BEB and 6.7% of HFS patients. Complications prompting patients to revert to the old pattern included lagophthalmos (1 BEB, 2 HFS), dry eye (1 BEB, 1 HFS), bruising (2 BEB), and early recurrence of symptoms (2 HFS).

Conclusion

Certain patients may prefer a novel lid margin botulinum toxin injection pattern over a more established pattern for both BEB and HFS.

References

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