

## Botulinum toxin in hemifacial spasm: Revisited

Sir,

Hemifacial spasm (HFS) is a well-known disorder with varied aetiology. The condition can occur either due to vascular compression of the facial nerve or due to nonvascular causes like cholesteatoma, acoustic neuroma, etc.<sup>[1]</sup> It is characterised by unilateral irregular clonic or tonic movements of the muscles innervated by cranial nerve VII.<sup>[1,2]</sup> HFS is more common unilaterally, and bilateral condition is rare.<sup>[3]</sup> The upper eyelid is more severely affected than the lower eyelid, and sometimes can cause almost complete closure of the eyelid during contractions. Facial asymmetry is common, and patients typically give history of slowly progressing unilateral spasm over years. Blepharospasm is usually associated with this symptom complex.

Various treatment modalities are available for HFS. These include medications such as carbamazepine, which may provide transient relief, surgical treatment in the form of microvascular decompression, which has been associated with reported success rates of 88-97%<sup>[1,2]</sup> but is associated with recurrence and complications, and finally injection of botulinum neurotoxin A which shows marked improvement without significant adverse reactions or complications. Complications or side effects are: Redness, pain, swelling, numbness, bruising, eyelid ptosis, eyebrow ptosis, asymmetric eyebrows, lip ptosis (after injection to lips), and asymmetric smiling. These can be avoided by injecting carefully and at proper dosage, by

**Table 1: Various muscles and varied dosage of botox in HFS**

Frontalis muscle	6-8 units
Procerus	5 units
Upper eyelid (orbicularis oculi) injected at two sites	About 2 units each site
Lower eyelid (orbicularis oculi) injected at two sites	About 2 units each site
At the lateral canthus	4-6 units
Zygomaticus major	2 units
Masseter injected at two sites	Total of 25 units

knowing well the anatomy of the muscles which we wish to inject and by staying away from the mid-pupillary line and going as far laterally as possible, especially in the case of eyelids and eyebrows. Botulinum toxin has been reported to improve the quality of life of such patients,<sup>[4]</sup> and success rate is estimated to be approximately 95%<sup>[5]</sup> as can be seen in the pre- and postoperative videos 1a and 1b. Patients start showing improvement soon after the injections, with a latency period of 2.6-5.4 days after treatment,<sup>[5]</sup> and the peak effect comes within 2 weeks. Patient has to repeat injections after 4-6 months. Patients can experience transient ptosis after upper eyelid injections, but it subsides within few days to weeks.

Patient is initially assessed for the various muscles involved. Each muscle is injected with dosages that vary for the individual muscle. The most commonly injected muscles are the orbicularis oculi (upper and lower eyelids), corrugator, frontalis, zygomaticus major, buccinators, and masseter.

Over the last 3 years, we have treated about 25 cases of HFS with botulinum toxin injection. Ethical committee clearance has been taken regarding the use of botox in HFS, at the doses listed below. The doses we have used in most of our patients shown in Table 1.

Patients are reviewed at 2 weeks interval, and further doses are added if required.

In conclusion, we would say that botulinum toxin is highly effective for HFS as it improves the quality of life of patients in a significant manner.

**Sukhbir Singh**

Department of Burns, Plastic, Maxillofacial and Micro-Vascular Surgery, Kamal Hospital, Kaushambi, Uttar Pradesh, India


**Address for correspondence:**

Dr. Sukhbir Singh, S-212, Greater Kailash Part 2,

New Delhi - 110 048, India.  
E-mail: sukhi\_1@yahoo.com

## REFERENCES

1. Frei K, Truong DD, Dressler D. Botulinum toxin therapy of hemifacial spasm: Comparing different therapeutic preparations. *Eur J Neurol* 2006;13:30-5.
2. Tsui JK. Blepharospasm and hemifacial spasm. In: Brin MF, Comella CL, Jankovic J, editors. *Dystonia: Etiology, Clinical Features, and Treatment*. Philadelphia: PA: Lippincott Williams & Wilkins; 2004. p. 152-3.
3. Wang A, Jankovic J. Hemifacial spasm: Clinical findings and treatment. *Muscle Nerve* 1998;21:1740-7.
4. Tan EK, Fook-Chong S, Lum SY, Lim E. Botulinum toxin improves quality of life in hemifacial spasm: Validation of a questionnaire. *J Neurol Sci* 2004;219:151-5.
5. Bentivoglio AR, Fasano A, Albanese A. Botulinum neurotoxin in tremors, tics, hemifacial spasm, spasmodic dysphonia, and stuttering. In: Jankovic J, Albanese A, Atassi Z, editors. *Botulinum Toxin: Therapeutic Clinical Practice and Science*; 2009. p. 112-30.

Access this article online	
Quick Response Code: 	Website: <a href="http://www.ijps.org">www.ijps.org</a>
	DOI: 10.4103/0970-0358.113746