

Pain Relief with Botox® Injections?

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Patients with blepharospasm (BEB) and hemifacial spasm (HFS) often come into the doctor's office with vague complaints of pain in or around the eyes. There are many reasons for pain in these patients including dry eye, photophobia, as well as pain from the spasms themselves and other types of headaches. We recently published a study in the journal *Ophthalmic Plastic and Reconstructive Surgery* that showed that many of our patients did in fact experience pain, and that the pain was relieved with botulinum toxin A (BTX) injections.

We looked at this in 85 of our patients (34 men and 51 women) at the University of Minnesota Department of Ophthalmology. On Institutional Review Board approval, a telephone survey was conducted that consisted of a brief series of questions relating to the presence of headaches and eye pain with their spasms. Other data, such as amount of BTX injected, region injected, and frequency of BTX was obtained from the medical records. There was an attempt to contact each patient four times, with exclusion from the list if no contact was made after the fourth attempt. Reasons for inability to contact patients included incorrect phone numbers and no answer at residence. Four additional patients declined the invitation to participate.

The average patient age was 69.8 years (range, 41-90 years). The average amount of BTX injected at each visit was 57.4 units (range, 15-100 units). The average total quantity of BTX injected was 1356.1 units (range, 45-5745 units) with the most common sites being the lower eyelid and upper eyelid, injected in 97.6% and 95.2% of patients, respectively. The average frequency between injections was 19.5 weeks, with a range of only 1 lifetime injection to an injection every 8 weeks. The average frequency for injections in patients with BEB was 16.2 weeks, with a range of 1 lifetime injection to injections every 36 weeks. HFS patients received injections on average every 25.9 weeks, ranging from 12 weeks to 48 weeks.

Of the 85 patients who participated in the telephone survey, 20 patients (23.5%) stated they had headaches and 29 (34.1%) had eye pain. Eleven patients claimed to have both headaches and eye pain. Ten of 20 (50.0%) headache respondents experienced relief of their headache pain after BTX injections, with an average rating of 3.70 (SD \pm 1.06) on a scale of 0 to 5 (0 = no relief and 5 = total relief). Twenty-four of 29 (82.8%) eye pain-positive participants had less eye pain after the BTX injections, with an average rating of 4.25 (SD \pm 0.94) on the same scale.

Twenty patients took medication for their pain, either prescription or over-the-counter. The most common medications for pain relief were wetting drops of some form or acetaminophen (8 patients each).

Our findings suggest that up to 70% of patients with BEB and HFS with headache and/or eye pain obtain relief with BTX injections. The reasons for the relief are probably multifactorial. Several studies have demonstrated that BTX itself may block pain signals to the brain. This, in combination with the relaxation of the spasming muscles themselves, probably accounts for the majority of pain relief with the injections. These results confirm the high prevalence of pain in patients with BEB and HFS. For most of these patients, the use of BTX injections for muscle spasm had the added benefit of improving eye pain and headache.

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