Application of Botulinum Toxin Type A for Pain Reduction in Trigeminal Neuralgia: 6-Month Follow-Up

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• Conflicts of interest: none declared.

Dear Editor,

Trigeminal neuralgia (TN) is a disease characterized as high-intensity pain, described as sudden onset, usually unilateral, severe electrical shock, with recurrent episodes of pain in the distribution of one or more branches of the trigeminal nerve. This condition often occurs in individuals aged 50 to 70 years, being more common in women. The first-line treatment indicated by the specialists for this pathology is administration of drugs. However, botulinum toxin type A (BTX-A) has been studied and proved to be a great treatment option for several pathologies, including TN. BTX-A is a neurotoxin that blocks neuromuscular transmission, reducing acetylcholine release, causing muscle relaxation. In addition to decreasing muscle contraction, BTX-A can decrease pain by inhibiting the release of nociceptive neuropeptides and/or sympathetic postganglionic neuropeptides (norepinephrine and ATP). It may be effective in relieving various pain conditions, including neuropathic pain. When applied to BTX-A, its maximal action is observed on between the 7th and 14th day. The reported duration of effect is about three to six months.

Thus, we will present a clinical case approved by the Ethics and Research Committee of FOP/UNICAMP, under the number CAAE: 6012116.1.0000.5418. A 54-year-old female patient presented at the clinic of the Piracicaba Dental School FOP/UNICAMP, presenting recurrent pain episodes described as “electric shocks” in the right hemiface. In her report, this pain persisted for 10 years, and she underwent magnetic resonance, electromyography, computed tomography, being all exams evaluated by her dentists. The diagnosis of orofacial diseases is a challenge, the diagnosis of TN should be based mainly on the patient’s clinical history and complementary exams. Finally, the diagnosis of TN was established and an optional treatment for this patient were discussed, since medicines were no longer efficient.

As a secondary treatment, since the patient reported right hemiface pain, more present in the temporal area and masseter trigger points were localized, the BTX-A treatment was proposed. A single 100-unit dose of BTX-A (BOTOX®; Allergan Inc.) was diluted in 2.5 mL saline and injected 40 units into three right hemiface trigger points in June 2016. The Visual Analog Scale (VAS - Score 0 to 10) was used to assess the pain sensation described by the patient before and during 6 months after BTX-A injection. The results showed that before June/2016 the patient’s pain was evaluated at VAS score of 10); right after the application of BTX-A, in July, her pain was recorded at 7. In August and September, the pain was rated at 7.5. In October it was registered at 8; in November reported at 9. At the end of 6 months, in December, the patient reported again pain at VAS 10 (Figure 1). Therefore, we observed that BTX-A had little help in reducing pain, demonstrating that there are new treatment options, even for complex diseases such as the one described in this case report.

There are also some factors that may be associated with TN, such as multiple sclerosis, viral infection, and anatomical abnormalities that compress the trigeminal ganglion; another commonly reported factor is vessel compression at the nerve root entrance causing demyelination of sensory fibers of the trigeminal nerve. Conventional treatments for TN include administration of drugs or therapeutic approach with microvascular decompression surgery, even though surgery is a more invasive approach. However, according to Santos et. al. BTX-A treatment in the masseter and temporal muscles results in reduced pain and tenderness in patients with neurological disorders. Therefore, the application of BTX-A has been reported as a new therapeutic approach for TN, as a therapy...
that does not require anesthesia and can be performed on an outpatient basis. Its dose may vary between 25 and 100 units. We report a new form of treatment that can also be prescribed after conservative treatments option such as drugs administration have been exhausted, and before considering surgical approach. This treatment with BTX-A for TN resulted in a reduction in pain from VAS 10 to 7, lasting for 3 months. For the patient this was satisfactory due to her high degree of pain. Nevertheless, this treatment should be recommended as a secondary option and not as a first line treatment.

Acknowledgment – Funding

“This study was funded in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001”

References


Figure 1. 6-month follow-up with BTX-A assessed with pain scale (VAS score 0 to 10).
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Mini Curriculum and Author’s Contribution
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Submitted: 09/06/2019 / Accepted for publication: 12/30/2019

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