MYOFASCIAL PAIN

Botulinum toxin treatment

BACKGROUND

Myofascial pain is a subtype of fibromyalgia characterized by painful trigger points that become activated by parafunctional habits, poor posture, and difficult social, physiological, emotional, and behavioral situations. Often the pain is poorly localized and radiates beyond the primary site. It can occur in concert with muscle fatigue, reduced joint movements, and headaches. In addition, myofascial pain is often associated with temporomandibular disorder (TMD), which can include limitations of masticatory function. The management of myofascial pain primarily addresses the symptoms and signs, so it is personalized to the individual patient. Among the proposed options is botulinum toxin (BTX), which has proved helpful for the management of neuromuscular disorders. The ability of BTX to relax muscles and relieve pain suggests that it may be useful for the management of myofascial pain associated with TMD.

METHODS

The PubMed, EMBASE, Scopus, Web of Science, and gray literature databases were searched to identify randomized clinical trials addressing the effectiveness of BTX for managing TMD-associated myofascial pain. Seven studies met the eligibility criteria.

RESULTS

Five studies compared BTX with saline solution, but just 2 reported a significant improvement with the use of BTX for subjective pain, as measured by visual analog scale, and for objective clinical outcome variables, specifically, the range of mandibular movement. The other 3 studies found no significant differences between BTX and saline solution for pain intensity, pressure pain threshold (PPT), or maximum mouth opening (MMO).

One study tested BTX versus facial manipulation. BTX did not improve pain or MMO beyond the ability of facial manipulation. A final study found positive outcomes for the use of BTX, but it was recommended for refractory cases only because of its higher cost.

All studies targeted primarily the masseter and temporalis muscles, and most administered BTX injections bilaterally at muscle sites. The choice of muscles of interest was based on physical examination, although some studies used electromyography (EMG) for guidance.

Total dose of BTX ranged from 70 to 300 U, but most studies used 100 to 150 U. All administered the BTX in a single session. Follow-up was 1 month in 4 studies but 3 reported on a follow-up between 3 and 6 months.

DISCUSSION

Different diagnostic criteria were used when identifying TMD in the various studies. In addition, more than half of the studies demonstrated an unclear risk of bias for randomization and allocation concealment. The diverse outcomes obtained may have been influenced by these and other limitations of the studies themselves. No clear guidelines can be drawn from the current findings.

Clinical Significance

The outcomes showed that there was no clear consensus on the usefulness of BTX for patients with myofascial pain related to TMD. Future studies should follow more standardized diagnostic methods, include larger sample sizes, and have longer follow-up periods.

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