Unclear results for the use of botulinum toxin therapy for TMD pain

Abstracted from

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Question: Is botulinum toxin therapy an effective treatment for temporomandibular joint disorders?

Data sources A comprehensive search was carried out on major databases such as PubMed, EMBASE and Cochrane CENTRAL. Reference lists of the included studies were explored along with journals likely to contain studies relevant to the topic. The search was restricted to the English language

Study selection The inclusion criteria included randomised and quasi-randomised controlled trials including parallel or cross-over studies comparing botulinum toxin therapy (BTX) versus any alternative intervention or placebo.

Data extraction and synthesis Quality assessment and data extraction were done following the Cochrane risk of bias tool and recommendations. All of the steps in the review, including the search and selection process, were done independently by two reviewers. Disagreements were discussed with one another until consensus was reached.

Results Five relevant studies were included in the review, which consisted of 117 participants. Two trials revealed a significant inter-group difference in myofascial pain reduction. Another trial that compared BTX with fascial manipulation showed no significant difference in pain relief for temporomandibular disorders (TMDs), while the remaining two trials showed no significant difference between the BTX and placebo groups. Meta-analysis was not performed due to the considerable variation in study methods and evaluation of the results. All five studies were targeted primarily on the masseter and temporalis muscles and most of them administered injections at bilateral muscle sites. The methods used to find the muscles to target were all based on physical examination, with three studies using electromyography (EMG) as guidance. The dose of BTX ranged from 70U to 300U, the majority used being 100-150U. All studies gave a single session of BTX and re-evaluated participants at least one month following the injection.

Conclusions No consensus could be reached on the therapeutic benefit of BTX on TMDs

Commentary

There is no doubt in the last few years that the use of botulinum toxin therapy (BTX) has not been only for cosmetic procedures.

Botulinum toxin therapy is being used and marketed as palliative treatment for different medical conditions, including migraines and orofacial pain.

The systematic review used an appropriate methodology to conduct the review, the PRISMA (preferred reported items for systematic reviews and meta-analysis).

The aim of the review was to investigate the current evidence to assess the efficacy of BTX use primarily for myofascial TMD pain. The search for randomised clinical trials for the therapy question was appropriately conducted in several databases and references. The quality assessment and the data extraction of the five trials selected were done independently by two authors and disagreements were discussed. The tool used for the risk of bias assessment was the Cochrane tool, an accepted standard instrument to assess the methodology of randomised clinical trials.

A meta-analysis was not done as reported by the authors due to the heterogeneity of the selected studies.

Despite the good systematic review planning, the methods and bias of the included studies failed to provide an answer and the therapeutic benefits, or not, of BTX for TMD pain remains unclear.

Even if the studies show some benefit, the short-term trials did not completely answer some important questions that practitioners need to provide to our patients. For example how long the relief effect will last considering the cost of such application, and the side effects that are associated with the application of BTX as some of them may last for several months: side effects are described as asymmetric smile, facial paralysis and muscle weakness. Also we need to consider that as a toxin, patients can develop antibodies to the toxin and the more frequent administration will reduce the efficacy of the Botox.

However, for patients with chronic pain where the quality of life is severely affected the therapeutic value could be an option. Consideration of side effects and interactions does not allow for knowledge of the true usefulness.

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