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# Type A Botulinum Toxin in the treatment of bruxism clenching and facial pain: randomized blinded placebo-controlled study

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## Introduction and objectives

Tooth clenching and tooth grinding are unvoluntary habits that result in facial pain and in TMJ dysfunctions. Positive therapeutic effects of type-A botulinum toxin (BTX-A) on functional disorders and pain symptoms have been known in other anatomical districts.

The purpose of this study is to assess the capacity of BTX-A to reduce the masticatory muscular hyperactivity, the facial pain and to improve mandibular functionality and psychological conditions similar to therapy with bite plane.

## Materials and methods

In a randomized blinded placebo-controlled study, 20 patients ( 10 BTX-A, 10 placebo) with cronic facial pain, hyperactivity of masticatory muscles assessed both clinically and with EMKG (electromyography and kinesiography) and with presence of tooth abrasions were treated with 100 U of BTX-A, injected bilaterally into masseters and temporalis frontal muscles under echographic guidance. Patients had a 6 months follow-up regarding pain, mandibular function and movements, treatment tolerability, judgement of efficacy, masticatory efficiency and EMKG values.

## Results

Decrease of muscular activity in all the muscles treated and in 18% also in the other masticatory muscles considered; 20% of patients injected with placebo had a subjective improvement not confirmed with EMKG, after six months back to same values of EMKG,

Increase the free-way space, decrease pain, improve mandibular functionality, in the first weeks referred by some patients light weakness. In some cases benefits pro-

gressively decreased after six months. No complications due to injections. The statistic tests of the p-value are significant from 0.022 to 0.033 for botox muscles treated; with reference to the pain during mastication is 0.023 and efficacy is 0.011.

### **Conclusions**

BTX-A is a valid treatment and reversible, with no side effects. This technique is easy to be performed, is well tolerated by patients. Can be used instead of bite plane in patients with augmented FWS (free way space) and must be considered the only alternative to a maxillary impaction in patients with no FWS, the importance of the psychological aspect of this patients in maintaining the clinical but not instrumental results; very significant for the posture or feed-back effects in other masticatory muscles.