

Poster 12

Biosafety and perioral botulinum toxin application: research study

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Abstract

Background: Orofacial harmonization encompasses techniques, procedures, and products used for therapeutic, rehabilitative, or preventive purposes. Orofacial Harmonization involves the use of injectable products such as botulinum toxin type A and/or hyaluronic acid with different molecular weights and degrees of cross-linking, as well as a variety of bio-stimulators. **Objective:** To analyze the application of botulinum toxin in the perioral region from both clinical and biosafety perspectives. To discuss the importance of identifying anatomical points of relevance directly associated with biosafety. **Methods:** This research compares the results after the application of a Botulinum Toxin protocol in 4 clinical aspects: a) labial commissures, b) gummy smile, c) perioral area, and d) chin. Clinical and biosafety perspectives of patients are evaluated. A convenience sample was utilized, consisting of 10 patients for each field to be evaluated (a, b, c, d) who met the inclusion criteria: patients over 25 years old and under 60 years old; without cognitive interferences and/or psychiatric pathologies; residents in Portugal. Exclusion criteria were used such as: patients with contraindications for the application of Botulinum Toxin protocol, such as: allergy to botulinum toxin type A; allergy to human albumin and/or sucrose; generalized muscular disease; presenting infection or inflammation in the area to be treated. **Results:** The clinical evaluation demonstrated higher therapeutic efficacy in groups a) labial commissures, b) gummy smile, and d) chin. The perioral area proved to be less promising in obtaining results with the application of Botulinum Toxin. Due to respect for facial anatomical structures, 100% success was achieved in biosafety control, with no trans or post-operative complications recorded. **Conclusions:** This study allowed for finding statistically significant relationships between the variables under study and the literature, thus enabling the creation of some scientific bases. Orofacial Harmonization, through individualizing the patient's natural physical traits, facilitates the harmonization of intra-oral structures with adjacent supporting tissues and muscles.

Keywords: orofacial harmonization; botulinum toxin; perioral area; gummy smile

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References

1. Razmaitè, A.; Trakinienè G. The effect of botox for the correction of the gummy smile: A systematic review. *Stomatologija* 2021, 23(3), page 63-68.
2. Galadari, H.; Galadari, I.; Smit, R.; Prygova, I.; Redaelli, A.; Use of AbobotulinumtoxinA for Cosmetic Treatments in the Neck, and Middle and Lower Areas of the Face: A Systematic Review. *Toxins (Basel)* 2021, 13(2), page 169.
3. Tabassum, N.; Chowdary, J.V.; Al Salem, A.; Kumar, S.M.; Muayad A.M.; Alrashd, D.M.; Al Nasser, L.; Ahmed, S. Perspectives and challenges in lip rejuvenation: a systematic review. *Eur Rev Med Pharmacol Sci* 2023,19, page 9043-9049.



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