



Therapeutic Indications of the Botulinum Toxin Type A in Dentistry

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Despite the wide recognition for its cosmetic action in attenuating facial wrinkles, it is important to emphasize that botulinum toxin is a drug and has therapeutic characteristics, widely used in Medicine.

In medical therapeutical applications, the botulinum toxin was initially used in the 1970s, to treat strabismus. However, it was approved in Brazil only in 2000 by the National Health Surveillance Agency (Agência Nacional de Vigilância Sanitária, ANVISA), and in the US in 2002 by the Food and Drug Administration (FDA). Since then, its increasing use has been helping to treat various pathologies and conditions.

Botulinum toxin is synthesized by the anaerobic bacteria *Clostridium botulinum* and acts by inhibiting the release of acetylcholine at the neuromuscular junction, preventing muscle contraction. There are seven distinct neurotoxin serotypes (called A, B, C1, D, E, F, and G), of which types A, B and E have therapeutic potential. Type A toxin is the most commonly used. The first FDA-approved trademark was Oculinum® (Scott Oculinum Inc.), a brand launched for the eye care industry, which was later produced and distributed by Allergan (Irvine, CA, US) and called Botox®, which became synonymous with the procedure. However, there are several trademarks available in numerous countries.

Clinical effects begin 7 to 10 days after administration, with the peak effect occurring within 15 days, lasting 3 to 6 months.

In Dentistry, botulinum toxin type A is indicated for:

1. Gummy smile and lip asymmetries that can cause sharp or irregular exposure of the gum;
2. Parafunctional habits, such as bruxism and bruxism (clenching);
3. Masseteric hypertrophy and consequent facial asymmetries of muscular origin;
4. Headache secondary to parafunctional habits;
5. Temporomandibular disorders (TMD), in the treatment of ankylosis and Temporomandibular Joint (TMJ) dislocation, and adjuvant in procedures such as arthrocentesis;
6. Orofacial pain (acting in conjunction with Neurology) for TMD cases, postherpetic neuralgia, trigeminal neuralgia, migraine, tension headache, chronic daily headache, Myofascial Pain Syndrome and fibromyalgia;
7. Supporting applications in Oral and Maxillofacial Surgery and Traumatology: trismus, prevention of scars and keloids in extraoral elective surgery;
8. Adjuvant applications in Implantology: reduction of chewing forces due to excessive muscle contraction, preventing fractures of implant and prosthesis;
9. Facial palsy;
10. Orofacial or oromandibular dystonia;
11. Sialorrhea.

Today, the botulinum toxin type A is a great pharmacological tool of Dentistry and can be applied, in principle, in all dental specialties, whose indications can directly or indirectly assist the dental surgeon in planning and management of their cases. However, it is noteworthy that the application of botulinum toxin is a therapeutic option and should be used in conjunction with other dental treatments.

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