

BOTULINUM TOXIN UPDATE ENVISION 2022

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CLASSIC INDICATIONS FOR BOTULINUM TOXIN A

- **Muscle spasm**
- **Hyperhidrosis**
- **Ptosis**
- **Lagophthalmos**
- **Strabismus**
- **Migraine**
- **Improving appearance of static rhytids**

BOTULINUM UPDATE

- **Can modify early tissue repair mechanisms to promote more favorable outcomes and less noticeable scars**
 - **Topical options**
 - ANT-1207 (Anterios/Allergan), CosmeTox (USA), and RT001 (Revance, USA)
 - **Surgical adjunct**
 - **Scar treatment**

BOTULINUM A AND WOUND HEALING

- **Effects are multifaceted**
- **Not restricted just to the underlying muscles relaxation and a wound tension reduction**
- **The toxin exerts influence on various cells and tissues involved in tissue repair following an injury or surgery**

- **Impacts inflammatory/immunological cascades, neurosensory signaling, cellular inhibition and proliferation, vascular and tissue differentiation, and growth (or atrophy)**
- **Attaches to cell surface proteins:**
 - E-cadherin
 - Fibroblast growth factor receptor 3 (FGFR3)
 - Vanilloid receptors
- **Modulates the function of a wide variety of cell types:**
 - Epidermal keratinocytes
 - Dermal fibroblasts
 - Vascular endothelial cells
 - Adipocyte-derived mesenchymal stem cells
 - Macrophages and neutrophils

BOTULINUM TOXIN

- **Can alter inflammatory reactions, cellular proliferation, mediation and inhibition**
- **Early application -within 24–72 hours of initial injury - seems to ensure a less conspicuous scar**
- **All well known commercially available preparations seem to be effective for that purpose**

LEE, B-J ET AL (2009): RAT WOUND HEALING MODEL

- Significant differences in wound size between botox-treated and untreated control wounds
 - **Less infiltration of inflammatory cells**
 - **Fewer fibroblasts**
 - **Lower expression of transforming growth factor (TGF)- β 1**

TGF- β 1 is a cytokine that has multiple mediatory actions in tissue healing, and it is involved in the formation of fibrotic tissue and hypertrophic scars

BOTULINUM TOXIN DOSING

- **A dose of 15 -20 units sufficient for a wound of (15–20 cm)**
- **The preparation injected in equal amounts of 1–5 U spaced evenly along the length of the wound 1 cm from the border**
- **Injection points can be spaced either along the both sides of the wound or a just unilaterally**

BOTULINUM TOXIN DILUTION

- **Dilution wound treatment was 1.5 -2 ml of bacteriostatic normal saline for 100 u of the Botox (or equivalent in case of other products)**
- **For larger surface wounds, the dilution can be 3-4 ml of bacteriostatic normal saline to provide a sufficient volume for coverage**
- **For larger surface wounds a dose of up to 20 u is still applicable**

APPLICATIONS

- **Facelift:** injections immediately after closure of the facelift wound, about 1 cm anterior to the margin
- **Scars:** injections that cover the entire surface of the hypertrophic or keloid scar and the adjacent normal skin
- **Bleph/brow:** injections spaced evenly 1 cm apart after upper blepharoplasty and eyebrow lift surgery

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