

## Clinical Applications - Cutaneous: *Vascular*

### THE TOXIC EDGE - A NOVEL TREATMENT FOR REFRACTORY ERYTHEMA AND FLUSHING OF ROSACEA

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**Background:** Rosacea is a common, chronic facial skin disease. Facial erythema is a frequent and often distressing complaint of patients with rosacea. Treatment of facial erythema with botulinum toxin has previously been proposed and reported. However, the current literature has mixed results. This study evaluated the safety and efficacy of thermal decomposition of the stratum corneum using a novel non-laser thermal resurfacing system to increase skin permeability for botulinum toxin A in the treatment of facial flushing of rosacea.

**Study Design/Materials and Method:** The device is a thermal resurfacing system which can generate ablative as well as non-ablative micropores opening the skin for transdermal delivery of compounds with no associated pain, bleeding or downtime. 12 patients were enrolled in the study. Affected facial areas were treated by a thermo mechanical system operated at 400 °C for 6 ms - 10 ms. Immediately after skin treatment, 40 units of abobotulinum toxin-A were applied over the treatment area and blocked with occlusion for 30 minutes. After 30 minutes the block was removed, and the patient discharged home. All patients received 3 consecutive treatment 1 month apart. Instrumental evaluation included erythema-directed digital photography and X10 dermoscopy. Two non-involved evaluators assessed the facial erythema of rosacea using a standardized grading system (0 = absent, 1 = mild erythema, 2 = moderate erythema, and 3 = severe erythema) to evaluate digital photographs at baseline, 1, 2, and 3 months after last treatment. Statistical analysis of erythema grade included one-way repeated-measures analysis of variance and pairwise comparisons. Patients completed via the FACE-Q validated patient-reported outcome instrument.

**Results:** There was a significant mean improvement of pre- and post-treatment independent assessment and FACE-Q scores ( $p=0.001$  for both). 9 subjects (75%) reported moderate-to-high satisfaction. No adverse effects were noted.

**Conclusion:** Thermal decomposition of the stratum corneum using the novel mechanothermal system increases skin permeability for botulinum toxin A in the treatment of facial flushing of rosacea seems both effective and safe.

