Comparison Between Er:YAG Laser and Bipolar Radiofrequency Combined With Infrared Diode Laser for the Treatment of Acne Scars: Differential Expression of Fibrogenetic Biomolecules May Be Associated With Differences in Efficacy Between Ablative and Non-Ablative Laser Treatment

Development of laser technology has provided effective options for acne scar treatment. However, the difference between ablative laser and non-ablative laser in detailed mechanism has not been known. Our study presents that ablative fractional Er:YAG laser is significantly more effective to acne scar treatment than non-ablative bipolar radiofrequency combined with diode laser, with tolerable adverse effects. Moreover, we investigated the expression of TGFβ-associated fibrogenetic molecular changes for the suggestion of mechanism of treatment modalities.


Ablative fractional laser (AFXL) is known to increase uptake of topically applied agents in skin. The time frame for applying a drug after AFXL exposure remains to be established. In this study we demonstrated that the time frame to maintain enhanced drug delivery of a small, water soluble test molecule, sodium fluorescein, sustained for several hours after AFXL exposure. Results corresponded to channel morphology by optical coherence tomography and loss of skin integrity.

Targeting of Sebaceous Glands to Treat Acne by Micro-insulated Needles With Radio Frequency in a Rabbit Ear Model

Although many therapeutic options exist for acne, relapse often occurs after treatment is stopped. Some preliminary evidence suggests that selective electrothermolysis of the sebaceous glands may represent a novel therapeutic intervention. In this study, we evaluated the efficacy and safety of micro-needles radiofrequency technology in the treatment of depressed acne in a REA (Rabbit Ear Acnes) model. We demonstrated the effective destruction of sebaceous glands with minimal downtime or adverse effects.