



LASERS

## SAFETY AND EFFICACY IN DIVERSE SKIN PHOTOTYPES OF A FRACTIONAL BIPOLAR RADIOFREQUENCY DEVICE FOR FACIAL SKIN ABLATION AND RESURFACING: A TEN-YEAR RETROSPECTIVE REVIEW.

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**Background:** Fractional bipolar radiofrequency is a chromophore-independent method of delivering thermal energy via a multi-electrode pin array. This device is intended to induce deep dermal heating, ablation and coagulation with relative epidermal sparing. It is US FDA-cleared for fine lines and wrinkles.

**Objective:** To review ten-year experience of two centers within the same dermatological practice in treatment of Fitzpatrick skin phototypes III -VI with fractional bipolar radiofrequency.

**Materials and Methods:** 474 consecutive full-face fractional bipolar radiofrequency procedures performed on 139 patients were reviewed via examination of medical charts and standardized digital images; and patient interviews where indicated. Patients were aged between 29 and 62, had received 3 to 6 treatments with moderate energy (60mj/pin) for acne or other scarring, hyperpigmentation, pore prominence, skin dullness, or fine lines and wrinkles. Exclusion criteria included treatment with lasers/energy-based devices, injectables or chemical peels.

**Results:** All patients experienced mild to moderate erythema lasting hours to 5 days. 23% experienced minimal to mild edema lasting hours to 2 days. Both were expected and self-resolving. There were no long-term complications, including post-inflammatory hyperpigmentation. Global improvement, on a five-point scale, was excellent (76 to 100% better than pre-treatment) in 104 patients by blinded evaluation and 120 patients by self-evaluation; and good (51-75% better) in 35 by blinded and 19 by self-evaluation. Blinded evaluation of pigmentation showed fair improvement (26 to 50% better) in 50% patients, good in 14% and excellent in 36%; good improvement of skin radiance in 50%, and excellent in 50%; good skin tightening in 24% and excellent in 50%. Pore prominence and fine lines and wrinkles also improved.





Conclusions: Fractional bipolar radiofrequency appears safe and effective for resurfacing of pigmented skin. It may overcome challenges of ablative laser, including post-inflammatory hyperpigmentation, due to relative epidermal sparing with preferential energy delivery to the deep dermis.

