

New Modality Treats Acne Scars With Fewer Side Effects

The technique, which combines CO₂ laser ablation and fractional photothermolysis, is associated with decreased downtime

A novel technique called ablative fractional resurfacing (AFR), which combines a CO₂ laser device with fractional photothermolysis (FP), is a safe and effective for treating acne scars, researchers report.

Traditional CO₂ laser ablation can make significant clinical improvements but it is not without risks, the investigators pointed out. Patients undergoing CO₂ facial resurfacing can expect post-treatment erythema that persists for weeks or months and a lengthy recovery period. Other potential adverse effects include infection and pigmentary alterations. FP, however, creates patterns of tiny microscopic wounds surrounded by undamaged tissue beneath the skin with an erbium-doped 1,550-nm laser. These devices produce more modest results in my cases than traditional CO₂ lasers but with fewer adverse effects and shorter recovery periods.

Roy G. Geronemus, M.D., and colleagues at the Laser & Skin Surgery Center of New York tested an AFR device on 13 subjects with moderate to severe acne scars. They underwent two to three treatments at one to two month intervals. Investigators and patients graded clinical improvement in texture, atrophy, and overall satisfaction on a quartile scale (0 = no improvement; 1 = less than 25 percent improvement; 2 = 26-50 percent improvement; 3 = 51-75 percent improvement; and 4 = greater than 75 percent improvement).

Three months after the last treatment, investigator assessment of improvement in texture, atrophy, and overall satisfaction based on the quartile scale was 2.39, 2.19, and 2.46, respectively, Dr. Geronemus' group reported in *Lasers in Surgery and Medicine* (2008;40:381-386). Patient assessments were 2.27, 2.11, and 2.42, respectively. These scores correlate to a 26 percent to 50 percent improvement.

In addition, to quantitate the magnitude of improvement, the team used a 3D optical profiling system (Primos imaging) to generate a high resolution topographic representation of 10 scars from 10 different patients. They measured the depth of the scars before the first treatment and three months after the final treatment. The mean improvement in each scar depth ranged from 47.6 percent to 79.9 percent, with an overall mean of 66.8 percent. Post-treatment adverse effects were mild to moderate and resolved quickly within the study period. The

investigators observed no delayed onset hypopigmentation or permanent scarring.

"Subjects were highly satisfied with the overall outcome, as well as with the reduced downtime and safety profile, with no delayed onset hypop-

igmentation or permanent scarring observed," the authors wrote.

The authors concluded: "AFR using a CO₂ laser source represents a new treatment paradigm by offering the ability to ablate and resurface deep dermal tissue targets, without

significant risk for adverse sequelae. The efficacy and favorable side effects profile for this technology, with [a] low incidence of pigmentary changes, make it a viable alternative for the treatment of moderate to severe acneiform scarring."