Fractional Laser Side Effect Risk Low, Study Finds

BY BRUCE K. DIXON
Chicago Bureau

CHICAGO — Fractional laser photothermolysis should be considered first-line therapy for cutaneous resurfacing because of the device's efficacy in treating a wide range of skin types with minimal adverse events.

"There is a very low complication rate, compared with other ablative laser methods such as the carbon dioxide and erbium lasers. The most common side effect in our study was acneiform eruption, which occurred less than 2% of the time," said Dr. Emmy Graber at the annual meeting of the American Society for Dermatologic Surgery.

Acne-prone patients were more likely to experience post-treatment acne in a study conducted by Dr. Graber and colleagues. Use of oral antibiotics (doxycycline 20 mg b.i.d.) during subsequent treatments prevented further outbreaks.

Treatment with fractional lasers has been shown to be effective for the treatment of photodamaged skin and fresh scars. However, there are limited studies evaluating the side effects and complications of the technique. "This is the first large-scale study to evaluate complications with the Fraxel laser," said Dr. Graber, a fellow at the Washington (D.C.) Institute of Dermatologic Laser Surgery.

The investigators conducted a retrospective chart study of 961 treatments using a 1,550-nm erbium-doped fiber laser (Fraxel, Reliant Technologies Inc.). Dr. Graber, now with SkinCare Physicians in Chestnut Hill, Mass., declared no financial conflicts and said the study received no funding or equipment from Reliant.

The study included 422 patients with skin types I-IV treated by two operators between October 2004 and September 2006.

"All treatments were done with either the Fraxel 1 or Fraxel 2 using the 15-mm handpiece with a fluence range from 10 to 40 J/cm^2, and the average fluence used was 25 J," she said, adding that densities ranged from 125 to 250 microscopic treatment zones per square centimeter, and average total delivered energy per treatment was 4.2 kJ.

All study patients were telephoned by a nurse 1 day after treatment and all had follow-up visits at 1 month. Most patients were followed for at least 1 year after final treatment, Dr. Graber said.

Most of those treated were women (91%) and most treatments were performed on the face (74%). Nearly one-fourth of patients were treated on both the face and other parts of the body. The majority of treatments (743) were for photodamage. The remaining treatments were for scars (175) and other diagnoses (43).

Overall, the 961 treatments resulted in 73 complications, which included acneiform eruptions (18), herpes simplex virus outbreak (17), erosions (13), prolonged erythema (8), postinflammatory hyperpigmentation (7), prolonged edema (6), dermatitis (2), impetigo (1), and purpura (1).

The side effect rate did not differ with regard to gender, age, body location, or diagnosis, Dr. Graber said.

"Those with complications had significantly darker skin types, and this discrepancy was most evident when comparing the incidence of postinflammatory hyperpigmentation, which appeared an average of 11 days post treatment and lasted an average of 50 days, which was longer than any other complication," Dr. Graber said.

In addition, 27% (259) of the 961 treatments were on patients with histories of herpes simplex virus (HSV). One-third of these patients (86) received antiviral prophylaxis, and 6 developed an HSV outbreak despite prophylaxis. Of the remaining two-thirds who did not receive prophylaxis, eight developed an HSV outbreak, she said, adding that of the 702 treatments on patients without histories of HSV, 3 resulted in HSV outbreak.

Because the complication rate in darker-skinned patients was low, pretreatment of all Fraxel patients with hydroquinones or other lighteners is not recommended, said study coauthor Dr. Tina Alster, the institute's director. "If you see a problem postoperatively, you can try to fade it out then, but in our study of close to a thousand treatments, the number of complications was virtually nil," Dr. Alster said, adding that the treatment should be avoided in tanned skin.

Fraxel 1, now called the Fraxel 750, received Food and Drug Administration approval in November 2003, according to a company spokesperson. The second-generation Fraxel 2, which has an adjustable spot-size feature, was approved last year. ■

Fresh Scars Respond Well to Fractional Laser Treatment

BY BRUCE K. DIXON
Chicago Bureau

CHICAGO — The first reported treatment of fresh scars with fractional resurfacing shows the modality to be both safe and effective, which places the device in direct competition with the carbon dioxide laser.

"Fractional laser treatment using the 1,550-nm erbium fiber laser produced significant improvement in all characteristics of fresh scars," said Dr. Cameron Rokhsar, at the annual meeting of the American Society for Dermatologic Surgery.

Studies of carbon dioxide and, more recently, pulsed dye laser treatment, have shown improvements in the range of 50%-60%, which are on a par with dermabrasion, said Dr. Rokhsar of the division of dermatology at the Albert Einstein College of Medicine, New York.

Dr. Rokhsar's study included 10 patients who received half-scar treatment with the nonablative Fraxel SR 750 system at or within 2 weeks of suture removal. The untreated half of each scar served as the control. The study was sponsored through a research grant by Reliant Technologies Inc., manufacturer of the Fraxel laser system. Reliant provided the devices that were used in the study. Dr. Rokhsar is a consultant for the company.

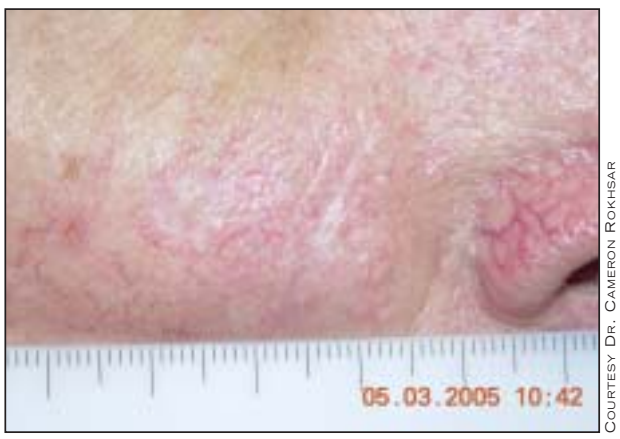
Patients were 19-74 years old; the study excluded those with localized or systemic infections and those being treated with isotretinoin, Dr. Rokhsar said.

Half of each scar was treated every other week for 10 weeks (five sessions) using an energy level of 20 mJ and a density of 1,000-2,000 microthermal zones per square centimeter.

The patients were evaluated at 1 month and 3 months after the last treatment based on a quartile scale of 0-4 (0, no improvement; 2, 26%-50% improvement; 3, 51%-75% improvement; and 4, 76%-100% improvement), he explained.

After 3 months, all treated scar portions were rated as either 2 or 3. "The improvements were moderate to significant for all scar characteristics, with both the patients and the study investigators reporting that improvement scores for skin texture, pigmentation, and overall atrophic scar appearance were well correlated," Dr. Rokhsar said.

"The treatments were safe and well tolerated," he noted. At 1 month following the last treatment, "three subjects had mild erythema and a fourth had transient postinflammatory hyperpigmentation; all resolved by 3 months." ■



COURTESY DR. CAMERON ROKHSAR

The bottom half of this vertical scar (starting at ruler edge) was resurfaced five times with a Fraxel laser.

Laser Therapy Found Effective For Dermatosis Papulosa Nigra

BY DAMIAN MCNAMARA
Miami Bureau

MIAMI — Laser treatment improved dermatosis papulosa nigra with efficacy comparable to standard electrodesiccation, according to rater assessments in a randomized, split-face pilot study of skin types IV-VI.

Subjective ratings, however, revealed a trend toward better efficacy with the laser treatment (Aura KTP [potassium titanyl phosphate], Laserscope) after 8 weeks, Dr. Roopal V. Kundu said at an international symposium sponsored by the L'Oréal Institute for Ethnic Hair and Skin Research.

"Both treatment modalities were quite efficacious; however, the KTP laser was probably preferable for patient comfort and tolerability," she said.

Dermatosis papulosa nigra (DPN) are superficial and hyperpigmented papules that occur on the head and neck of patients with darker skin. They tend to grow in size over time and do not resolve. Although benign, "they are cosmetically displeasing and psychologically distressing to many of our patients," said Dr. Kundu, who is with the department of dermatology at Northwestern University, Chicago, and has no financial disclosure regarding the KTP laser.

"The important point for dermatologists is we have a wonderful opportunity to educate patients with DPNs. Tell them they are not moles, that they are benign and have no malignant potential," she said.

Conventional treatment includes cryotherapy, snip excision, curettage, or electrodesiccation of each lesion. These approaches, however, increase the risk of pain and hypopigmentation, especially in darker skin.

All 14 participants were adults with clinically diagnosed DPN and skin types IV-VI. There were 11 women and 3 men with a mean age of 52 years. At baseline and 4 weeks, each received electrodesiccation to half of their face and KTP laser treatment to the other half. The laser was set to 15 J/cm^2, 5 pulses per second repetition, and a 1-cm spot size.

A dermatologist blinded to the regimen rated left- and right-side photographs at week 8. Efficacy was rated as a score of 1-4, with each number representing a 25% clinical improvement over baseline. About 60% of photographs demonstrated a 75%-100% improvement, so the raters found no statistically significant difference between treatments.

"There was a notable improvement for both KTP laser treatment and electrodesiccation at week 8," Dr. Kundu said at the meeting, which was also sponsored by Howard University.

Participants were asked to report adverse events, treatment satisfaction, and cosmetic outcome up to week 8. They used a 1-5 rating scale, with 1 representing "not at all" and 5 "very much." There was a trend toward KTP laser treatment being more effective than electrodesiccation. In addition, there was significantly "less pain and discomfort with the KTP laser," Dr. Kundu said. ■