Fraxel Laser’s Potential Still Under Discovery

Some are experimenting with fluences to determine treatment possibilities for ‘therapy in flux.’

The Fraxel 1,550-nm erbium laser may fill a niche for certain patients desiring skin rejuvenation, Dr. Rubin said.

These include:
- Patients with dark skin prone to hyperpigmentation. Because the damage inflicted by the Fraxel laser is done with microscopic pinpoints, it does not create the persistent erythema that often leads to hyperpigmentation following ablative therapies. Used at low fluences, it may be an excellent option for these patients.
- Patients with melasma. Melasma is essentially a condition of misbehaving melanocytes, according to Dr. Rubin.

When melanocytes aren’t functioning appropriately, we would love to kill them without killing the surrounding tissue and creating hypopigmentation.

The selective action of the Fraxel laser may be able to ‘gently’ knock out enough melanocytes to control melasma without tippering the balance too far, he said.

Results in melasma patients at 1-2 months are ‘intriguing,’ he said, although 6-8 months of clearance would be necessary to prove that the therapy is a significant advance.

- Patients desiring significant rejuvenation of nonfacial skin. Ablative CO2 laser treatments are risky in areas of the body with few pilosebaceous units to assist in reginalization. Because the Fraxel laser does not produce a widespread wound, it may be better at safely treating the skin of the neck, chest, and hands.

Dr. Rubin has no financial interest in the Fraxel laser and receives no funding from its manufacturer, Reliant Technologies.

Permanent Hair Removal in a Single Treatment? That’s a Myth

The percentage of new hairs decreases with each laser treatment because additional permanent hair loss with each laser treatment is about 20%, she said.

Patients typically need five treatments, and they should be warned not to pluck or wax their hair because photothermal energy is absorbed by melanin in the hair shaft.

“Without the target, there is no effect,” said Dr. Dierickx, director of the Skin and Laser Center, Brussels.

She was unsuccessful in her attempt to create a target by dying white hair, and has had mixed results with the use of radio frequency energy.

A topical anesthetic is used, and A medium to high fluence is delivered. The answer is—maybe.

The epidermis remains intact, even when the laser’s energy reaches depths of 700 micrometers and beyond, a level deep enough to promote collagen remodeling. But are the pinpoints of energy enough? And are the surface areas of each microscopic zone (estimated to number 2,000 per cm2) consistent?

About 20% of the facial surface area is impacted during each treatment session at a low fluence, typically four to six passes, Dr. Rubin said. However, “in reality, as you go back and forth like this, you’re never really where you’re supposed to be. In certain places you hit the same spot two times, three times, four times, who knows?”

It may be that the microscopic zones of destruction are so small that overlap does not matter, either in terms of results or side effects, he said. However, it remains to be seen whether consistency will be achieved as the laser makes its way into general clinical practice.

A clear advantage of Fraxel lasers over CO2 lasers is the healing process, accord-