

Dermatology Times

Excimer Laser System Can Safely Target Psoriatic Plaques

By Cheryl Guttman

Contributing Editor

Boston — A recently marketed excimer laser system for the treatment of psoriasis offers an exciting new alternative for clearing localized areas of resistant disease, R. Rox Anderson, M.D., said.

The system allows UVB phototherapy to be aimed precisely and efficiently to the involved areas without exposing normal skin. The laser uses a xenon:chloride source and has a 308-nm wavelength in the desirable narrow-band UVB range.

"This system represents a new treatment approach that is really not so new because UVB phototherapy is a mainstay in the armamentarium for treatment of psoriasis. With this laser system, however, the clinician can safely target stubborn lesions with high UVB doses to achieve efficient clearing," said Dr. Anderson, associate professor of dermatology, Harvard Medical School, Boston, at the Wellman Laboratories of Photomedicine, Massachusetts General Hospital.

In contrast to conventional UVB phototherapy, the excimer laser system can be used to initiate treatment in a dose range of four to six times the patient's MED. The efficacy and safety of this regimen was demonstrated in a dose-response trial conducted by Charles R. Taylor, M.D., assistant professor of dermatology, Harvard Medical dermatologist, Massachusetts General Hospital, and his photomedicine fellow Pravit Asawanonda, M.D.

As expected, this study found an inverse relationship between the treatment dose

and the number of sessions needed to achieve clearing. Up to 25 treatments were needed to clear portions of lasers treated using a conventional UVB phototherapy dose of one MED, whereas there was a dramatic drop-off in the number of required treatments using doses of four to six MEDs. Occasionally, plaques treated with eight MED doses were cleared after a single exposure, noted Dr. Anderson.

A maximum dose of 16 MEDs was evaluated in a small number of patients, and all of the areas treated with this regimen cleared after one session. However, this high dose was also associated with development of a blistering reaction of the plaque.

"This response is the equivalent of a blistering sunburn, but it caused minimal pain and did not lead to scarring or infection. Nevertheless, it is not the goal of phototherapy to produce blistering, and the four to six MED dose range appears to be a good place to initiate therapy for stubborn plaques that often fail to respond to conventional phototherapy," Dr. Anderson said.

Currently, the treatment is delivered via a handpiece that covers a 3.2-cm² area (1.8-x 1.8-cm). For larger plaques, the operator can either set the handpiece onto the skin and move it manually to a contiguous site or deliver the radiation with a paint mode.

Dr. Anderson noted that research is also evaluating ways to automatically deliver the light to larger surface areas. While such technology may allow the excimer laser system to have a role in treating widespread disease, for the time being it is not a

practical alternative to existing treatment approaches for patients with larger areas of psoriatic involvement. However, when used to treat individual plaques, the laser in theory should offer a reduced risk of skin cancers relative to conventional phototherapy.

A number of clinical trials evaluating the excimer laser system are ongoing. Treatment of localized plaques using the four to six MED dose is being evaluated in a larger study to better characterize the number of treatments needed to achieve clearing. In addition, the efficacy of the excimer laser system for treating scalp psoriasis is being investigated.

"Hair has always been a barrier to using phototherapy to treat scalp psoriasis. However, that obstacle can be overcome with this system using a fiberoptic comb-like device that can deliver the radiation directly to the scalp surface. The clinical experience with excimer laser treatment of psoriasis is limited, but promising," said Dr. Anderson.

In addition to psoriasis, there are a number of other UV-responsive dermatoses where this excimer laser system may play a valuable therapeutic role. Presently, studies are underway evaluating its efficacy and safety in patients with lichen planus and vitiligo.

The excimer laser system is a product of Laser Photonics, Inc., Carlsbad, Calif. Subsequent to completion of the dose-response trial, Dr. Anderson has become a consultant to Laser Photonics.

Drs. Taylor and Asawanonda have no financial interest in the company. **DT**