Use of light for the treatment of skin diseases dates back at least to the time of the ancient Egyptians, although controlled scientific investigation of phototherapy for psoriasis did not occur until the late 1800s. With developments in UV phototherapy over the 20th century, light-based treatment for psoriasis has become firmly established and has been thoroughly reviewed in the AAD’s “Guidelines of Care for the Management of Psoriasis and Psoriatic Arthritis.” Within this recent publication, the expert psoriasis work group affirms the potential benefits of at-home UVB phototherapy, citing recent studies that have confirmed its efficacy.

The market for at-home UVB units has increased in recent years, and systems provide a variety of features to enhance patient convenience, therapeutic efficacy, and safety. A recent article in Practical Dermatology (August 2010 edition, available online at PracticalDermatology.com) provided an overview of at-home phototherapy for psoriasis. The introduction of a novel at-home UVB unit (Levia, Lerner Medical Devices, Inc.), now allows targeted treatment of smaller anatomic areas and the scalp. Ahead is a brief review of at-home phototherapy and a look at the latest addition to the field.

Conventional Phototherapy
Phototherapy is established as a safe and effective treatment for moderate to severe psoriasis. Types of phototherapy for psoriasis include psoralen plus ultraviolet A (PUVA), broadband UVB (280-315nm), and narrowband UVB (311nm). Targeted light-based treatment with the 308nm excimer laser has also been employed with success in the management of moderate to severe psoriasis. The excimer laser system has largely been advocated for the treatment of smaller body surface areas.

The use of UVA phototherapy in conjunction with psoralen, known as PUVA, is quite effective and recently has been shown to offer similar efficacy to biologic therapy for psoriasis. In a small study comparing PUVA to UVA plus placebo, PUVA was found to be significantly more effective than UVA alone; 63 percent of PUVA-treated subjects achieved PASI 75, compared with no subjects in the UVA plus placebo group. UVA-based phototherapy is associated with increased risk of cutaneous malignancies. A large-scale follow-up study of patients treated with PUVA identified an increased risk of melanoma occurring 15

An Update on At-Home UVB Phototherapy
At-home options increase accessibility to phototherapy, which is effective and generally safe for psoriasis management.

By Joseph Bikowski, MD

Take-Home Tips. The market for at-home UVB units has increased in recent years, and systems provide a variety of features to enhance patient convenience, therapeutic efficacy, and safety. Although home phototherapy is well tolerated and cost-effective, a significant proportion of dermatologists do not prescribe it, perhaps due to perceived risks and lack of familiarity regarding procurement of a system. Home UVB phototherapy can be used alone or in combination with other therapies for the management of psoriasis. Traditional home systems are ideal for the management of larger body surface areas, while a novel at-home system offers an option for the treatment of smaller surface areas and the scalp.
years after the first treatment and increasing as the total number of treatments exceeded 250. Coupled with well-known acute side effects, including nausea, this risk of malignancy has contributed to an overall reduction in the use of PUVA, although it is recognized as a valid treatment option for mild to moderate psoriasis.

Broadband and narrowband UVB are considered less likely to cause cutaneous malignancies. A retrospective analysis has shown no increase in cancer incidence among psoriasis patients treated with either form of UVB. Of the two forms, NB-UVB is more effective than BB-UVB and is therefore more commonly used. The Goeckerman regimen, which includes the use of coal tar in addition to UVB, offers very good efficacy, but it is messy and time-consuming.

UVB phototherapy is typically provided in an outpatient clinic, requiring patients to travel to the clinic two to three times a week for treatment. Some clinics offer expanded hours in efforts to accommodate patients and increase the convenience of therapy. Still, the onus on patients is thought to diminish compliance with in-office phototherapy. Additionally, many insurers require a patient co-pay each time the individual presents for phototherapy in the clinic. Given multiple visits per week, the costs to the patient can escalate quickly.

**At-home Phototherapy**

Developed largely in response to the need for greater patient convenience and potentially lower overall costs, home UVB phototherapy units have been available for roughly three decades. Although home phototherapy is well tolerated and cost-effective, a significant proportion of dermatologists do not prescribe it, perhaps due to perceived risks and lack of familiarity regarding procurement of a system. A primary concern among clinicians is that patients will apply excessive doses of UVB and subsequently develop burns. However, most if not all home systems currently on the market have safety features that limit the amount of energy that can be distributed and are designed to prevent system misuse.

Many home phototherapy systems are full-body or large flat-panel systems. New to the market is a system designed for “personal targeted phototherapy” (PTP) that is ideal for small treatment areas and the scalp. Levia delivers 300-320nm UVB energy from a compact six-pound console that measures six inches wide, 8 inches high, and 11.5 inches deep. The system features an easy-to-use touch-screen interface and offers two handpieces: the LiteSpot and the LiteBrush. The standard handpiece treats an area of 3cm², while the brush, specially designed for treatment of scalp psoriasis, uses fiberoptics to bypass hair and deliver UVB energy to the scalp.

The physician fully controls the prescription for light administration. The information provided by the prescriber and input into the system determines the maximum total number of treatments.
the dose of each treatment, and any limitations on treatment. Once the patient has completed the prescribed course, they may be required to present to the clinic for follow-up before additional treatments are prescribed.

The system monitors patient response to therapy and uses the information to manage treatment. For example, before activating the light source, the system requires that patients input information about the response to prior treatment, including degree of erythema and any signs and symptoms of burning. Each patient receives a six-digit prescription code or PIN, and a 10-digit therapeutic code that are used to activate the system and dispense the physician-directed therapy. Data are stored in the system, allowing the prescriber to determine whether the patient has been compliant with treatments.

Like other manufacturers of at-home UVB devices (Table 2), Lerner Medical Devices, Inc. provides support to physicians and patients for the ordering of at-home phototherapy. There is assistance available for obtaining insurance approval and a sample letter for medical necessity. System training is available to patients acquiring a system. The Levia system is also approved for treatment of vitiligo and atopic dermatitis. The system has a five-year lamp life.

**General Considerations**

Home UVB phototherapy can be used alone or in combination with other therapies for the management of psoriasis. Traditional home systems are ideal for the management of larger body surface areas, while the novel at-home system offers an option for the treatment of smaller surface areas and the scalp. Light-based therapy may be particularly suited to patients who have failed to respond or have had sub-optimal response to other treatments or who wish to avoid systemic medications.
Phototherapy has long been a pillar of psoriasis treatment known for its efficacy in moderate to severe cases, cost-effectiveness, and general safety. However, with the advent of biologic therapies and the growing base of topical agents, phototherapy has somewhat faded to the background of treatment approaches. A major reason for this is that phototherapy tends to require a number of treatments, totaling several visits a week to the office, which is not practical for many patients. In addition, for physicians, phototherapy boxes take up a great deal of space in a practice, which becomes harder to justify if a dwindling number of patients receive phototherapy.

In recent years, devices such as the excimer laser have provided targeted phototherapy that has made for more convenience. Taking this concept one step further, the new Levia device offers targeted phototherapy in a home-use device. Ahead, R. Sonia Batra, MD, Clinical Assistant Professor of Dermatology at the USC Keck School of Medicine, who is also in private practice in Santa Monica, CA, discusses her experience with the system and its benefits for patients.

What are the benefits of personal targeted phototherapy for patients with psoriasis or vitiligo? “Light therapy is a very effective but often underutilized treatment for psoriasis and vitiligo,” says Dr. Batra. To see results, patients need to commit to treatment sessions multiple times per week over at least one to two months. But for many patients, it is inconvenient and expensive to take time off, drive to a hospital or physician’s office, and pay for parking or insurance co-pays for the number of sessions needed to see improvement. “A major benefit of personal targeted phototherapy is that it makes compliance with a treatment regimen much easier; a patient can perform his or her own treatment privately and at his or her convenience,” Dr. Batra observes. “This device also allows patients to limit their exposure to areas of skin affected by skin disease and may allow them to reduce or replace other therapies with other unwanted or systemic side effects,” she notes.

How do you determine an ideal candidate for personal targeted phototherapy? “The ideal candidate is someone with limited body surface area involvement who may have seen less efficacy with topical medications, or who has concerns about side effects from topical or systemic medications,” says Dr. Batra. “Often their schedules would preclude them from keeping appointments for light therapy in an office or hospital setting, but they are compliant and willing to perform treatments at home,” she continues. While this should qualify a fair number of psoriasis patients, Dr. Batra observes that this device is not for everyone. “I don’t recommend the device for patients with a history of photosensitive disorders or a history of multiple skin cancers, nor for those who take photosensitizing medications.”

Can you discuss your experience with this device, in terms of treatment duration, efficacy, ease of use, and patient compliance? “Patients usually start two to three times per week and continue for one to two months. As they begin to see improvement or clearance, they can be tapered to a maintenance regimen—typically one treatment per week,” says Dr. Batra. “I usually will continue a topical or systemic regimen adjunctively while phototherapy takes effect,” she notes. Regarding efficacy, Dr. Batra points out that patients often see improvement within one month. She also notes that her patients have been very receptive to the device and the advantages it offers them. “The brush handpiece for the scalp is particularly convenient, as many topical treatments can be messy and difficult to apply to this area. Patients also like the ability to focus the treatment only on areas where they have patches or plaques,” Dr. Batra says.

According to Dr. Batra, a typical treatment takes five to 10 minutes, which tends to be acceptable for most patients who require several treatments per week. “A motivated patient will find time a few times a week to perform his or her own therapy,” Dr. Batra observes. “However, as with any prescription or therapy, the degree of patient’s improvement relies on his or her adherence to the treatment regimen once they walk out of the office,” she explains.

Do you have any take-home points for those who might consider adding this device to their treatment repertoire? “Most clinicians who treat psoriasis are familiar with the principles behind phototherapy but the take-home points for this device are the ability to limit the light exposure to involved areas of skin and potentially greater compliance since the treatment can be performed by a patient at home,” says Dr. Batra. She continues, “I think one should consider adding this to a treatment regimen for a motivated patient who is likely to use the device appropriately and consistently and who may have concerns about topical or systemic medications.”

—Ted Pigeon, Senior Associate Editor
or long-term topical corticosteroid use. Although home-based phototherapy systems are safer, patients require regular follow-ups to ascertain the level of response and set the course for continuing therapy. Follow-up appointments at three-month intervals have been advocated for all patients undergoing at-home phototherapy. It may be appropriate to see a patient two to four weeks after the initiation of at-home therapy to monitor response and address any concerns.

Rethinking Home Phototherapy
As the treatment of psoriasis has evolved in recent years, clinicians have faced a growing number of treatment options for the disease. Among the available treatments, phototherapy has a long history of use and a good deal of clinical evidence. While there are relevant safety concerns associated with the use of UVA and UVB phototherapy, when provided under appropriate protocols, light therapy is quite safe.

In addition to safety concerns, lack of access has also limited the use of phototherapy. A number of practices simply do not offer phototherapy in the clinic. Among practices that do, patient access can be limited by logistics (inability to present multiple times per week for treatment) or costs.

At-home UVB units offer a reasonable alternative for many patients. Larger systems have been available for some time, with a track record of safety and efficacy. Now targeted treatment of small surface areas is also possible. Clinicians should consider at-home phototherapy among the treatment options for their patients with moderate to severe psoriasis or those with less extensive but recalcitrant plaques. ☑

Dr. Bikowski does not have any relevant relationships to disclose.

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### Table 2.

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7. PD ARTICLE