

Clinical Research Seeks to Optimize Omnilux LED Acne Tx Protocols

By Bob Kronemyer, Associate Editor

Non-invasive methods of treating acne are fast becoming a preferred route for patients seeking optimal results with fewer side effects. Current treatment regimens, particularly for severe acne, are not without complications and the long-term effects of antibiotics are still being researched.

For over 12 years, Photo Therapeutics (the manufacturers of Omnilux) has produced Photodynamic Therapy (PDT) light sources for the treatment of non-melanoma skin cancers. This technological experience led to the development of Omnilux Blue. The Omnilux Blue delivers the correct wavelength, intensity and treatment time for optimum results in the PDT treatment of acne vulgaris. After obtaining FDA marketing clearance in June 2003 for the treatment of mild to moderate inflammatory acne, the Omnilux Blue LED system was launched in the U.S. by Alderm, NA, LLC (Irvine, Calif.)

Independent studies of Omnilux Blue show a 73% average reduction in inflammatory lesion counts. Some of the subjects in this eight treatment study saw improvements as early as their fourth treatment (i.e.

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two weeks from the treatment start date.) The most significant improvements were seen once the light treatment had ended: 28% saw optimum clearance four weeks post treatment, 55% eight weeks post treatment, and the remainder (17%) reached optimum clearance twelve weeks after treatment course completion).¹

Several well-known dermatologists worldwide have since replicated the above results. Ronald Moy, M.D., Nick Lowe, M.D. and David Sire, M.D. are awaiting publication of their recent study using Omnilux. Dr. Moy (Los Angeles, Calif.) recently reported, “The Omnilux

Blue system definitely works on acne and is the most potent blue light source available in comparison to either the ClearLight or BLU-U.”

Dr. Sire (Fullerton, Calif.) and others such as Tony Chu, M.D. (Royal Hammersmith Hospital, London) and Glen Calderhead, (Tokyo, Japan) have proposed that treatment efficacy not only relies on the death of *P. acnes* through the singlet oxygen production process, but also on the stimulatory effect of the light on the cytokine mechanisms.



Before Tx



After four treatments of 5% ALA-PDT

According to Dr. Calderhead, “blue light therapy at 415 nm is known to stimulate the production of cytokines from keratinocytes located in the epidermis. The cytokine cascade is a secondary or dark reaction that continues after the light treatment has finished. This cascade stimulates specific immuno-regulatory pathways that play a significant role in post treatment healing of inflamed acne skin.”

There is also evidence through the extensive work carried out by James Leyden, M.D. and C. Futsaether, M.D. that a short-lived change in pH post-treatment offers an unfavorable environment for the acne bacteria to replicate.^{2,3}

As knowledge of Omnilux mechanisms grow, so has the opportunities to treat the entire spectrum of acne conditions. A recent study by Dr. Sire shows that “combining Omnilux Blue and Omnilux Revive offers



Before Tx



After alternate Blue-Red therapy

excellent relief for cystic acne. We performed a split face study on four patients with acne vulgaris and two patients with papulonodular rosacea. There was marked improvement on the side treated with blue light alternating with red light compared to the side treated with only blue light. Treatments were twice weekly for four weeks, then once weekly for four more weeks. All patients requested that we treat with the alternating

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blue/red program. We believe that the anti-inflammatory effects of the red light significantly add to the improvement of the acne and the rosacea.”

It has long been demonstrated that 633 nm light offers excellent reduction of inflammatory lesions and increases the healing process. This is important for a patient who may be prone to scarring. Omnilux Revive, (633 nm head that runs from the same platform as Omnilux Blue), delivers an optimized wavelength for stimulation of fibroblasts, encouraging an excellent remodelling outcome.⁴ This is significant in acne patients for whom skin quality is an issue after some

conventional treatments. Many doctors now combine Omnilux Blue and Omnilux Revive treatments with excellent outcomes.

Long-term maintenance is a concern for all acne sufferers. Much research has been carried out on the treatment of severe acne using a photosensitizer combined with Omnilux for severe acne.

A recent study in Asia by Dr. Kanno at the Nishiarai Skin and Hair Clinic in Japan included the use of 5% 5-aminolevulinic acid (5-ALA) cream with Omnilux Blue, once a week for four weeks. Dr. Kanno reported that “over 182 subjects were treated, with 92% seeing a significant improvement. I used the treatment for those patients who presented moderate to severe acne and the results were excellent.”

Various protocols have been used for ALA-based PDT treatment of acne. The concentration of the photosensitizer and contact time vary depending upon skin type, severity of the condition, the amount of background sun damage, and the downtime that is acceptable for the patient. The reactions to 5-ALA are often variable and unpredictable and this should be relayed to the patient. Post-treatment care is also a consideration to ensure effective outcomes.

Pain management has also been problematic when using 5-ALA. The European Society for Photodynamic Therapy recommends “analgesia two hours before treatment, passing cool air over the treatment area using commercial cooling systems or spraying cool sterile water (4°C) over the area.” ■

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