

Acne

Light therapy in the treatment of acne vulgaris

Elman M, Lebzelter J.
Dermatology and Lasers Clinic,
Tel Aviv Msq, Caesarea, Israel.

BACKGROUND : Over the past decade, lasers and light-based systems have become a common modality to treat a wide variety of skin-related conditions, including acne vulgaris. In spite of the various oral and topical treatments available for the treatment of acne, many patients fail to respond adequately or may develop side effects. Therefore, there is a growing demand by patients for a fast, safe, and side-effect-free novel therapy.

OBJECTIVES : To address the role of light therapy in the armamentarium of treatments for acne vulgaris, to discuss photobiology aspects and biomedical optics, to review current technologies of laser/light-based devices, to review the clinical experience and results, and to outline clinical guidelines and treatment considerations. **RESULTS. :** Clinical trials show that 85% of the patients demonstrate a significant quantitative reduction in at least 50% of the lesions after four biweekly treatments. In approximately 20% of the cases, acne eradication may reach 90%. At 3 months after the last treatment, clearance is approximately 70% to 80%. The nonrespondent rate is 15% to 20%.

CONCLUSIONS : Laser and light-based therapy is a safe and effective modality for the treatment of mild to moderate inflammatory acne vulgaris. Amelioration of acne by light therapy, although comparable to the effects of oral antibiotics, offers faster resolution and fewer side effects and leads to patient satisfaction.

Low-intensity indocyanine-green laser phototherapy of acne vulgaris: Pilot study.

Genina EA, Bashkatov AN, Simonenko GV, Odoevskaya OD, Tuchin VV, Altshuler GB. Saratov State University, Optics Department, Astrakhanskaya 83, Saratov 410026, Russia.

Near infrared (NIR) diode laser low-intensity (soft) phototherapy with the topical application of indocyanine green (ICG) has been suggested for treatment of acne vulgaris. Twelve volunteers with acne lesions on their faces and/or backs were enrolled in the experiment. Skin areas of the subjects that were 4x5 cm(2) were stained with ICG solution for 5 min before laser irradiation (803 nm) at a power density up to 50 mW/cm(2) for 5 to 10 min.

For 75% of the subjects, a single treatment was provided and for the other 25%, eight sequential treatments over a period of a month were carried out. Observations a month after the completion of the treatment showed that only the multiple treatments with a combination of ICG and NIR irradiation reduced inflammation and improved the state of the skin for a month without any side effects. A month after treatment, the improvement was about 80% for the group receiving multiple treatments. Single treatments did not have a prolonged effect. (c) 2004 Society of Photo-Optical Instrumentation Engineers.

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