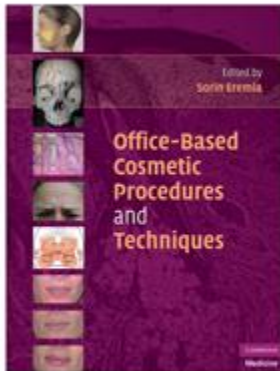


AMINOLEVULINIC ACID PHOTODYNAMIC THERAPY FOR FACIAL REJUVENATION AND ACNE pp. 235-240



By Jane G. Khoury and Mitchel P. Goldman

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Light therapy is widely used in dermatology. The addition of a photosensitizing medication to the light, collectively known as photodynamic therapy (PDT), can enhance laser and light treatment. PDT has become an increasingly popular therapy for practitioners treating a variety of cosmetic and medical dermatologic conditions. The two commonly used photosensitizers are 20% 5-aminolevulinic acid (ALA; Levulan, DUSA Pharmaceuticals) and the methyl ester of 20% 5-ALA (MAL; Metvixia, Galderma). Once ALA or MAL has been applied, it is metabolized into the photosensitizer protoporphyrin PpIX, which is preferentially taken up by rapidly proliferating cells such as tumor cells and sebaceous glands. Irradiation of photosensitized skin with various light and laser sources results in a photooxidation of the target molecules.

A variety of lasers and light sources have been utilized to activate ALA and MAL, including blue light (417 nm), red light (635 nm), pulse dye lasers (585 and 595 nm), and intense pulsed light (420–1200 nm). Table 52.1 demonstrates the absorption spectrum of PpIX and the corresponding PpIX absorbance of various light sources. Depending on the condition

being treated, the PDT dose can be customized by controlling the amount of ALA/MAL that enters the skin, the time allowed for PpIX synthesis, the various laser and light sources, and the amount of light that is absorbed. This chapter will focus on the use of ALA-PDT for acne and photodamaged skin. Although currently off-label, its application for photorejuvenation and acne therapy is growing in use and popularity.