



Levulan, Light, and the Skin

Photodynamic therapy uses a medication with 20% 5 – aminolevulinic acid, in a prescription formulation called Levulan. There have been numerous studies done with this medication, with the addition of a light source, in the treatment of both skin and non cutaneous uses. The non skin uses include treating malignancies in the lung, esophagus, colon, peritoneum, pleura, genitourinary tract, brain, and eye. Other areas treated include atherosclerosis, infectious diseases, and rheumatoid arthritis.

The skin is easily treated with this medication and the application of light, because of the accessibility of the skin to light sources. This medication, when applied to the skin, selectively accumulates in rapidly dividing cells, cells with altered structure (such as photodamaged skin) which allow for greater permeability, and in sebaceous glands. The ALA when combined with an appropriate light source will produce an activated oxygen, called a singlet oxygen, that can destroy the cells which have taken up the medication (also known as a photosensitizing agent). Levulan is absorbed into the cells as described above and this medication is transformed to a highly photoactive molecule called protoporphyrin IX.

Clearance of actinic keratosis (dark appearing skin lesions, thought to be precursors of squamous cell carcinoma) is in the 80-100% clearance. Initial studies had the application of Levulan for 14-18 hours, but further studies show similar results which much shorter incubation times, some as short as thirty minutes with similar results. Actinic keratosis appear anywhere on the body and some of the more common treatment areas include the face, the scalp, the trunk (including the chest), and the extremities.

The result of adding Levulan with light (either in the blue spectrum, or an IPL device) leads to shrinkage of sebaceous glands and destruction of p. acnes bacteria. This results in less sebum production and fewer acne lesions. A person suffering from acne can expect to have fewer outbreaks and less oily skin.

Other skin problems treated with this medication and light source activation, include, but are not limited to, psoriasis, molluscum contagious, hirsutism, sebaceous hyperplasia, and photorejuvenation (improving skin texture, fine lines, pigmentation issues, and small broken blood vessels).

The most common side effects experienced after application of the medication is mild stinging. When undergoing treatment for any of the above indications, expect 1-4 treatments, spaced 1-3 weeks apart. Microdermabrasion can be accomplished before the application of the medication to allow for more consistent skin penetration. Following application of the light, one should expect redness and possibly mild swelling, most severe in the first twenty four hours and complete clearing within two weeks. During the first 24 hours complete avoidance of direct sunlight is mandatory. There will be some superficial peeling during this time period.

This is an elegant way to eliminate photodamaged skin, rejuvenate the face, and treat one's nonmelanoma precancerous skin lesions with a few easy treatments, that do not hurt or cause scarring or other significant adverse sequelae. Ask about this treatment and how you can take advantage of it's excellent and wide ranging treatment profile.

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