

Use of Excimer 308 nm lamps or lasers in the treatment of certain dermatosis

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Phototherapy: Ultraviolet B (UVB) radiation, emitting at a wavelength between 290-320 nm has been used in the treatment of various skin diseases. UVB phototherapy with a narrow-band output spectrum (narrow-band UVB) has been developed to increase the benefits of this treatment by reducing the potential risks of conventional phototherapy. Narrow-band UVB phototherapy uses TL01 fluorescent lamps with a wavelength of 311 ± 2 nm. An original source of narrow spectrum UVB is the monochromatic Excimer light emitting at 308 nm in the UVB spectrum. This light source is now considered as a well-established therapeutic option in the treatment of many skin diseases. The light 308 nm can be emitted either coherently (laser) or non-coherent (lamp) with almost the same therapeutic efficiency.

Indications: Several dermatosis can be treated by Excimer laser or lamp: localized vitiligo, plaques of psoriasis, localized mycosis fungoides, alopecia areata, lichen planus. The specificity of this treatment is to target the affected areas (selective therapy) without impairing the normal surrounding skin, to require fewer sessions compared to conventional phototherapy and, therefore, to reduce total cumulative dose limiting potential long-term cancer.

Pathogenesis: The mechanism of action is based on an immunosuppressive effect on T lymphocytes, a decreased immune response by cytokines and a remobilization and migration of pigment cells.

Treatment modalities: Generally, protocols consist in 2 sessions per week which will be continued for 2 to 3 months, depending on the dermatosis to be treated. If the results are encouraging, the sessions can be continued for up to 10 months (in vitiligo for example). The starting doses used are $50 \text{ mJ} / \text{cm}^2$ (the impact on the treated area corresponding to a duration of 5 seconds) and are increased at each session of $50 \text{ mJ}/\text{cm}^2$.

Side effects: If the protocol is respected, side effects are rare: a slight erythema, a sensation of pruritus, a dyschromia or exceptionally blisters or superficial burns. All these signs are temporary and disappear spontaneously. The long-term cancer risk of phototherapy depends on the total cumulative dose. **Since the UV doses accumulated by Excimer lamps / lasers are well below the carcinological doses, this risk becomes exceptional.**

What to do after the session? : Apply a healing repair cream to reduce erythema, and apply an SPF 50+ sunscreen cream to the exposed areas, in order not to accumulate the sun's natural UV doses.

Are there any contraindications? :

Every dermatosis when UV radiation is contraindicated: lupus, photodermatitis, photosensitizing drug use (cyclines ...)

Pregnancy: is not a contraindication. Avoid nevertheless treating pelvic or genital areas (medico-legal).

In children : there is no contraindication to targeted phototherapy.

This information sheet recommended by the French Laser Society can be given to you by your dermatologist. Even if it is not sufficient to have an estimate, it helps to give the patient a clear information.

The information consultation provides clear explanations on expected outcomes, side effects and possible complications.

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