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Simulated daylight (SDL-PDT) treatment of AK with a new LED white light device: clinical results in a prospective observational pilot series of 30 patients

Natural DayLight-mediated PhotoDynamic Therapy (NDL-PDT) is an efficacious treatment option for thin actinic keratosis (AK) that offers advantages over conventional PDT in terms of tolerability, treatment duration, and cost. However rain and cold temperatures appear the main limitations of NDL-PDT. Indoor lightning (or simulated daylight: SDL-PDT) could offer an interesting alternative to NDL-PDT. A new light device (Dermaris, France) was evaluated for AK treatment. This system uses white LEDs with a broad waveband in the visible range with high amplitude at 630 nm. This system delivers 20 000 lux on a homogeneous 320cm² surface. 30 patients, with AK on the scalp, were treated. Immediately after MAL application, the light was switched on for 2h30 minutes (total dose: 26 /cm²). Pain, crust, pruritus and AK clearance were evaluated. No pain was observed during illumination. Crusts at Day 7 were observed in 14% and discomfort during 24 hours in 10% of patients. 30 % of patients required a 2nd session. In conclusion, this new device offers a very efficient alternative to conventional red light or DayLight PDT. The patient satisfaction is very high. This system is easy to install and could easily be used to treat other skin areas.

Key Words:
PDT, Pain, Daylight Low irradiance, Methyl 5-aminolevulinate

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First clinical experiences on MAL-PDT with an artificial white light irradiation device (Dermaris®) in patients with multiple AK of the face and scalp: a split face study

Background: Daylight photodynamic therapy (dl-PDT) is an effective treatment for patients with actinic keratoses (AKs). To overcome seasonal limitations, we aimed to determine the safety and efficacy of MAL-PDT with artificial white light (awl) emitting irradiation device.

Methods: Patients with AKs of the face and scalp received awl-PDT and dl-PDT with methyl aminolevulinate (MAL) one week apart in a split face-design. Awl-PDT was applied by a CE certified LED irradiation device (Dermaris®, main peaks at 448nm and 630nm; 20.000 Lux). The outcome should be assessed by AK area and severity index (AKASI) and lesion count (LC) prior to and 3 months after treatment. The pain was determined by use of a visual analogue scale (VAS). Safety was monitored by pulse and blood pressure measurements throughout treatment.

Results: First treated patients (n=4) showed comparable results regarding AKASI and LC reduction after two weeks of treatment. We observed no significant differences in blood pressure, pulse or pain throughout the treatment, yet.

Conclusion: Awl-PDT with MAL seems at this preliminary time point to be a comparable treatment alternative for patients with AKs on the head.

Key Words:
AK, Awl-PDT, Dl-PDT, MAL