

2ND WORLD CONGRESS ON DERMATOLOGY, COSMETOLOGY AND AESTHETIC SURGERY

July 14-15, 2025 | Rome, Italy



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Photodynamic therapy light': An enhanced treatment protocol for actinic keratoses with minimal pain and optimal clinical outcome by combining laser-assisted low irradiance PDT with shortened daylight PDT

Background

Between 2003 and 2016, 546 patients (54,2%) in our clinic discontinued outpatient treatment for actinic keratoses using conventional photodynamic therapy because of intolerable pain, poor compliance, and, ultimately, insufficient treatment. 75% of our patients needed the use of a less painful procedure. Therefore, we developed a novel off-label PDT protocol: 'PDT light'.

Methods

With the new technique 'PDT light', from 2018 we achieved further considerable reduction in pain, maintaining comparable therapeutic efficacy, by combining the advantages of laser-assisted low irradiance PDT (li-PDT) with daylight PDT, after we had started li-PDT in 2014.

Patients with AK Olsen grades 1-2 and field cancerization received a mild-fractionated CO₂-laser pretreatment prior to MAL-incubation (methylaminolaevulinate-Metvix ®) under occlusion for 1,5-3 h. Then, patients were illuminated averagely for 1,02 min with the Aktilite-LED and, after application an UV-screen on the illuminated area, sent out into daylight for 1 h.

Results

Between March and November 2019, we successfully treated 152 cases using the enhanced 'PDT light' procedure, with 137 cases achieving at follow-up 1 (on average after 8.14 months) good-to-excellent clearance rates (90%) and minimal adverse effects.

Conclusions

The novel 'PDT light' protocol proves to be an excellent and nearly painless method with an average visual-analogue scale (VAS) score of 1.19. Additional advantages included reduced illumination time, shorter outpatient stays in the clinic, fewer adverse effects, and better compliance.

The author - suffering himself of actinic keratoses at face, scalp and body - is probably one of the very few dermatologists in the world who has personally subjected himself to 63 self-performed PDTs with different protocols, from 2003. These experiences helped him to develop this new method step by step.