

Efficacy of ALA-PDT vs blue light in the treatment of acne.

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Abstract

BACKGROUND:

Photodynamic therapy (PDT) is based on the principle of using light excitation of a wavelength-specific endogenous or exogenous photosensitizer to destroy the target tissue, and has shown efficacy in the treatment of certain non-melanoma skin cancers. PDT using aminolevulinic acid (5-ALA) has attracted attention in the treatment of acne vulgaris.

METHOD:

Twenty patients with moderate to severe acne vulgaris on the face were treated with four sessions of topical ALA-PDT with blue light (415 nm) on the right side of the face compared with blue light alone on the left side of the face, each treatment being 1 week apart. Ten percent of topical ALA was applied to acne spots on the right side of the face with a 1-h incubation period and the entire face was treated with 48 J/cm² of 415 ± 5 nm light from an articulated LED planar array. Evaluation was performed by counting acne lesions at baseline, 4, 8, 12 and 16 weeks after the beginning of the treatment. Biophysical measurements included sebum levels and the erythema, and melanin indices.

RESULT:

At the given assessment times 4, 8, 12 and 16 weeks after the beginning of the treatment, the mean percent reduction in inflamed lesions counts tended to be higher in the ALA-PDT areas; it was 32%, 50.9%, 65.9% and 71.1%, respectively, compared with the blue-light-alone treatment, which was 20.7%, 27%, 57.7% and 56.7%, respectively, but without any statistical significance (P=0.092). There was no demonstrable significant change in sebum excretion, erythema or the melanin index after treatment. The side effects were pain, stinging, peeling, erythema, pruritus, oozing and pustules. These side effects were stronger on the ALA-PDT-treated side.

CONCLUSION:

From this study, the trend for ALA-PDT with blue light to be superior to blue light alone was observed, but it did not reach statistical significance. ALA-PDT had more side effects.