

0.5% Liposome-encapsulated 5-aminolevulinic acid (ALA) photodynamic therapy for acne treatment

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Abstract

Background:

Photodynamic therapy using topical 5-aminolevulinic acid (ALA) has been successful in treating acne vulgaris, but sun avoidance for at least 48 hours after treatment is necessary due to the risk of post-treatment photosensitivity. Recently, a lower concentration of liposome-encapsulated 5-ALA was introduced to minimize this risk.

Objectives:

To evaluate the efficacy and safety of liposome-encapsulated 0.5% 5-ALA in the photodynamic therapy of inflammatory acne and its effects on sebum secretion in Asian skin.

Methods:

Thirteen Korean subjects with inflammatory acne were administered 0.5% ALA spray before photoradiation treatment. Potoradiation was performed at 3.5–6.0 J/cm² three times during each of two visits, performed 2 weeks apart. Improvement of acne was evaluated subjectively and objectively based on the Korean Acne Grading System. Sebum secretion was measured quantitatively at each visit.

Results:

The mean reduction in acne grade at the end of the treatment was 43.2%. Of the patients, 69.2% reported improvements in subjective skin oiliness, but fewer showed objective reductions in sebum secretion as determined by the Sebumeter[®] SM10. No serious adverse events were observed.

Conclusion:

Photodynamic therapy using liposome-encapsulated 0.5% 5-ALA improved inflammatory acne with minimal side effects in Asians.

Keywords

acne vulgaris, aminolevulinic acid, liposomes, photodynamic therapy