

Low-dose topical 5-aminolevulinic acid photodynamic therapy in the treatment of different severity of acne vulgaris.

[Ma L¹](#), [Xiang LH](#), [Yu B](#), [Yin R](#), [Chen L](#), [Wu Y](#), [Tan ZJ](#), [Liu YB](#), [Tian HQ](#), [Li HZ](#), [Lin T](#), [Wang XL](#), [Li YH](#), [Wang WZ](#), [Yang HL](#), [Lai W](#).

Author information

Abstract

OBJECTIVES:

To investigate the efficacy and safety of low-concentration 5-aminolevulinic acid photodynamic therapy (ALA-PDT) in the treatment of different severity of acne vulgaris and optimize the treatment regimen.

METHODS:

A self-controlled multicenter clinical trial was carried out in 15 centers throughout China. A total of 397 acne patients of grade II-IV received 3- or 4-session PDT treatment. 5% ALA gel was applied topically to acne lesions for 1h incubation. The lesions were irradiated by a LED light of 633 nm at dose levels of 96-120 J/cm². Clinical assessment was conducted before and after every treatment up to 8 weeks.

RESULTS:

The effective rate overall and of grade II, III and IV are 82.1%, 71.6%, 79.6% and 88.2%, respectively. The effective rate rises significantly proportionally to the severity of acne ($P<0.01$). No significant differences are found in the efficacy between patients received 3-session and 4-session PDT treatments ($P>0.05$). The count of inflammatory and non-inflammatory acne lesions gradually decrease after each treatment ($P<0.01$) and during the 8-week follow up ($P<0.01$ or $P<0.05$). Maximum efficacy is obtained at 8 weeks after the treatment completion.

CONCLUSIONS:

A low-dose topical ALA-PDT regimen using 5% ALA, 1h incubation and red light source of 3 treatment sessions is suggested as optimal scheme for the treatment of different severity of acne vulgaris in Chinese patients. Superior efficacy is found in severe cystic acne of grade IV with mild side effects.

Copyright © 2013 Elsevier B.V. All rights reserved.