

## **Liposome-Encapsulated 0.5% 5-Aminolevulinic Acid with Intense Pulsed Light for the Treatment of Inflammatory Facial Acne: A Pilot Study**

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### **Abstract**

#### **BACKGROUND**

Liposome used in spray form to encapsulate and deliver 5-aminolevulinic acid (5-ALA) into the pilosebaceous unit lowers the concentration of 5-ALA to 0.5% in photodynamic therapy (PDT) for acne, with low post-treatment photosensitivity.

#### **OBJECTIVE**

To investigate the clinical outcome and side effects of PDT using intense pulsed light (IPL) and 0.5% 5-ALA spray for inflammatory facial acne in Asian skin.

#### **METHODS**

Twelve subjects (skin types IV–V) with facial acne received full-face treatment at 3-week intervals with IPL 1 hour after being sprayed with 5-ALA. Lesion counts were assessed using serial standardized photographs taken up to 6 months after treatment. Serial sebum measurement and subjective assessment was conducted.

#### **RESULTS**

There were mean reductions in inflammatory lesions of 52% at 1 month ( $p=.02$ ) and 65% at 6 months ( $p=.04$ ) after treatment. Mean subjective acne score decreased from 6.6 to 4.5 (on a scale from 1 to 10) 1 month after treatment. Significant reduction in sebum production was noted only on the forehead. No significant side effects, including postinflammatory hyperpigmentation and phototoxicity, were observed.

#### **CONCLUSION**

Use of 0.5% liposome-encapsulated 5-ALA spray with IPL reduced inflammatory facial acne in Asians, with a low risk of persistent phototoxic effects after PDT in this pilot study.

*Danish Dermatologic Development, Hørsholm, Denmark provided the IPL device and liposome-encapsulated 5-ALA spray used in this study.*