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Split-Face Comparison of the Erbium Micropeel with Intense Pulsed Light

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ABSTRACT

BACKGROUND A variety of photorejuvenative techniques have been utilized to reverse the signs of cutaneous photoaging, including ablative and nonablative laser resurfacing as well as light-based devices.

OBJECTIVE The purpose of this split-face randomized prospective open-label trial was to determine the effectiveness of sequential erbium:yttrium-aluminum-garnet (Er:YAG) laser versus intense pulsed light (IPL) for the treatment of mild to moderate facial photodamage.

MATERIALS AND METHODS Ten subjects (ages 35–63) with facial dyschromia and rhytides were enrolled. Study patients were randomized to the two treatment arms, Er:YAG (3.8 J/cm², 30% pattern overlap, 0% interpulse overlap, 15 μm per pass with no coagulation) and IPL (560-nm filter, 30 J/cm², 2.4/4.0-ms pulse with 10-ms delay), each receiving three sequential treatments spaced 1 month apart. Subjective and blinded physician evaluations were performed at baseline and 4, 8, and 20 weeks posttreatment using a nominal scale from 1 to 4. Erythema and adverse events were assessed 1 week following each treatment.

RESULTS Ten female subjects with mild to moderate facial photodamage were treated with one pass of either IPL or Er:YAG in a split-face fashion. Patients received three treatments each spaced 1 month apart. Nine of 10 patients completed the trial; 1 withdrew due to pain during the second Er:YAG treatment. Baseline subjective and blinded physician dyschromia and rhytid scores revealed no significant difference between the IPL and Er:YAG randomly assigned sides. Up to three IPL or Er:YAG treatments did not result in a significant improvement in rhytid scores. Subjective and blinded physician dyschromia scores improved 26 and 38%, respectively, 3 months after the final IPL treatment, but only by 7 and 29%, respectively, with Er:YAG. Subjective global facial appearance scores worsened by 5% while blinded physician scores improved by 16% 3 months after 3 Er:YAG treatments, but by 28 and 20% for IPL, respectively. The overall incidence of adverse events and subsequent downtime was increased for Er:YAG (1/10 patients experienced hyperpigmentation, 3/10 exfoliation, 1/10 blistering, and 5/10 discomfort) compared to IPL (1/10 exfoliation and 1/10 discomfort), although no permanent side effects were observed with either treatment arm.

CONCLUSIONS While low-fluence erbium resurfacing has a modest effect on facial photodamage, patients preferred IPL because it resulted in less downtime.

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