

Split-face randomized treatment of facial telangiectasia comparing pulsed dye laser and an intense pulsed light handpiece

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Abstract

Background and Objective

Facial telangiectasia and other vascular lesions have historically been effectively treated with the pulsed dye laser (PDL). This study compares the safety and efficacy of the PDL to an intense pulsed-light (IPL) handpiece with dual-band spectral absorption, shorter pulse widths, and constant output power.

Study Design/Materials and Methods

Sixteen subjects were enrolled with facial telangiectasia in this single-site study. Subjects were randomized to receive up to two split-face treatments 1 month apart with PDL on one side and IPL on the other. PDL treatments were performed at 595 nm with either a 10 or 7 mm spot at a fluence range of 8.1–14.5 J/cm², and either 10 or 40 mseconds pulse width. Zimmer air cooling (setting of 4) and ultrasound gel were used for patient comfort. IPL treatments were performed with a spectral range of 500–670 and 870–1,200 nm, a 10 mm × 15 mm spot, fluence range of 34–70 J/cm², either a 10 or 100 mseconds pulse width, and 5°C contact cooling. Safety assessments were conducted by the study investigator immediately, 48–96 hours and 1–2 months post-treatment. Independent, blinded-review assessments were conducted 3 months post-treatment. Efficacy was evaluated using a seven-point Telangiectasia Grading Scale (TGS: –1 to 5). Subject self-assessment data were also collected.

Results

The difference in incidence rate and severity of adverse side effects between the two devices were not statistically significant ($P \geq 0.39$, Fisher's exact test) at any of the three evaluation periods. Per blinded-review assessment, the mean TGS score for both devices was 3.3 (IPL 95% CI: 2.8–3.7; PDL 95% CI: 2.9–3.8). The difference in blinded-ratings for the two devices were not statistically significant ($P = 0.82$, ANOVA for repeated measures).

Conclusion

The IPL studied here successfully treated facial telangiectasia, resulting in equivalent safety and efficacy outcomes as compared to the PDL. *Lasers Surg. Med.* 44:97–102, 2012. © 2012 Wiley Periodicals, Inc.