INTENSE PULSED LIGHT VERSUS FLUORESCENT PULSED LIGHT FOR PHOTODAMAGED SKIN: A SPLIT-FACE COMPARISON

INTRODUCTION

For more than ten years intense pulsed light (IPL) has been the standard for treating photodamage nonablative. This prospective, nonrandomized, controlled, single-blinded split-face trial compared two multiphoton technology broadband pulsed light platforms for the treatment of photodamaged skin. The Lumenis One IPL system (Lumenis Corporation, Santa Clara, CA) and the upgradeable Harmony pulsed light system (Alma Lasers, Chicago, IL). Eight volunteers skin types I–IV, mean score 2 on the 0–4 Global Score for Photodamage were recruited for each group. Each participant received three to five split-face treatments three weeks apart utilizing the Lumenis One on one half of the face and the Harmony on the other. Parameters were selected following a test pulse. The Lumenis One, with 515-nm, 560-nm and 1064-nm wavelengths, delivered single pulsed light, one 15-20 J/cm² pass at 17 to 20 J/cm² pulse duration, 10–20 ms pulse delay. Three passes were done using aggressive fluences (14–21 J/cm²) chosen following a test pulse. A low energy pulse that achieved a clinical endpoint of erythema and heat. The corneal side of the face was treated with the Harmony platform using the green (540–560 nm) and yellow (570–590 nm) pulsed light handpieces. Single pulsed light 30 J/cm² pulse duration, 20–40 pulse delay. Three passes were done using aggressive fluences (14–21 J/cm²) chosen following a test pulse that achieved a clinical endpoint of erythema and heat. Patients were instructed not to allow face to face contact between treatments, and to use sunscreen when outdoors.

METHODS

Eight volunteers recruited from a single group practice received a single three to five split-face treatments three weeks apart utilizing a Universal IPL handpiece. Subjects were graded by evaluators. There were no clinically obvious differences in side effects. Comparisons of facial differences were made using the 0–4 score on the Global Score for Photodamage. The correlation of the two devices was devised and funded by the author. The study was approved by the Human Subjects Institutional Review Board.

RESULTS

All eight patients completed the study. Both broadband dermatologists evaluated telangiectasia, erythema, pigmentation, and textural improvement on a 1–4 scale (1=0–25%, 2=26–50%, 3=51–75%, and 4=76–100%) by comparing pre treatment and post-treatment photographs. Table I shows the results for the improvement of telangiectasia, erythema, and skin texture as graded by evaluators. There were no clinically obvious differences between the left and right sides of the faces. None of the patients reported any subjective difference between the two sides of their faces with respect to photodamage, vascular changes, or textural improvement, and they unanimously rated both sides equivalently as equal. Additionally, both treatments were equally well tolerated, with no difference in the incidence of pro-

DISCUSSION

Photographs taken one month following the final treat-

Figure 1. A 40-year-old woman (skin type IIb before and after six split-face pulsed light treatments at 3 week intervals. Left face (Harmony): two passes with green head (540–560 nm) and yellow (570–590 nm) pulse duration 10–12 ms, pulse delay 20–40 ms. Right face (Lumenis One): 3 passes with 515-nm, 610-nm, and 1064-nm pulse duration 10–20 ms, 20–40 ms delay, and pulse delay 17 to 20 J/cm².