

Split-face comparison of intense pulsed light with short- and long-pulsed dye lasers for the treatment of port-wine stains

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Abstract

Background

So far, pulsed dye lasers have been regarded as the gold standard in the treatment of port-wine stains (PWS). Recently, intense pulsed light (IPL) has been reported to achieve more pronounced fading in some patients.

Objectives

To evaluate the efficacy and the side effects of IPL treatment of PWS in a direct comparison to the short-pulsed dye laser (SPDL) and the long-pulsed dye laser (LPDL).

Methods

Test spots ($n = 158$) were applied with IPL ($\lambda_{em} = 555\text{--}950$ nm, pulse duration: 8–14 milliseconds (single pulse), fluence: 11–17.3 J/cm²), the SPDL ($\lambda_{em} = 585$ nm, pulse duration: 0.45 milliseconds, fluence: 6 J/cm²), and the LPDL ($\lambda_{em} = 585/590/595/600$ nm, pulse duration: 1.5 milliseconds, fluence: 12/14/16/18 J/cm²) in a side-by-side modus in untreated ($n = 11$) and previously treated ($n = 14$) patients with PWS. Lesion clearance was evaluated by three blinded investigators based on follow-up photographs 6 weeks after treatment. Incidence of side effects was assessed.

Results

In previously untreated PWS as well as in pretreated PWS, IPL treatments were rated significantly ($P < 0.05$) better than treatments with the SPDL. In both groups, IPL and LPDL treatments did not differ significantly. Side effects were few in all settings.

Conclusions

In PWS resistant to dye laser therapy, IPL showed additional lesion clearance. The use of IPL increases the therapeutic possibilities in PWS.