

ABSTRACT

Background: Laser and intense pulsed light (IPL) are standard symptomatic treatments of superficial telangiectasias, but postoperative erythema, oedema and pain may cause patient discomfort.

Objectives: To investigate whether topical brimonidine reduces IPL-induced inflammation in patients with moderate to severe facial telangiectasias.

Methods: A randomized, two-centre, single-blinded, split-face trial on adjuvant brimonidine and air-cooling vs. air-cooling alone (control) in 19 patients treated in Denmark (n = 10 patients) and Belgium (n = 9). Brimonidine was applied to the allocated side and incubated for 30-60 minutes after each of 3 facial IPL-treatments, given at 3-week intervals. Patients were assessed up to 1 month after final treatment. Outcome measures included blinded clinical on-site evaluation of erythema and oedema (5-point-scales), objective erythema-scores (red-filter analysis), patient-evaluated pain (Visual Analogue Scale), IPL-efficacy (blinded photo-evaluation of telangiectasia clearance) and patient preference.

Results: In total, 19 patients were randomized and completed the study. IPL induced moderate to severe erythema after each treatment. Application of brimonidine reduced erythema to baseline values compared to air-cooling alone and sustained efficacy until the day after treatment (median difference reduction: score 1 at each assessment, $P \leq 0.022$). Objective erythema-scores supported clinical findings, demonstrating median 50-95% reduction in erythema after application of brimonidine and air-cooling compared to 9-28% reduction after air-cooling alone ($P \geq 0.002$). No difference in reduction of IPL-induced oedema was observed between facial sides ($P \geq 0.227$). Brimonidine and air-cooling slightly and consistently reduced postoperative pain compared to air-cooling alone (VAS 1.0 after brimonidine versus VAS 1.5-2.0 after air-cooling alone at treatment 1-

3, $P \leq 0.032$). At final follow-up, patients experienced excellent clearance of telangiectasias (75-100% clearance) on both facial sides ($P=1.000$). Patient preference supported clinical data and 79% of patients preferred brimonidine and air-cooling compared to air-cooling alone ($P=0.019$).

Conclusion: Compared to air-cooling alone, adjuvant brimonidine reduces IPL-induced erythema and associated pain while maintaining a high IPL-efficacy.