Comparison of 1470 nm Laser and Radial 2ring Fiber with 980 nm Laser and Bare-Tip Fiber in Endovenous Laser Ablation of Saphenous Varicose Veins: A Multicenter, Prospective, Randomized, Non-Blind Study.

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Abstract

OBJECTIVE:
The aim of this study is to compare the clinical efficacy and safety of two laser wavelengths and fiber types in endovenous laser ablation (EVLA) of saphenous varicose veins of the lower limb.

DESIGN:
Multi-center prospective randomized non-blind clinical trial.

PATIENTS AND METHODS:
From January 2007 to December 2011, 113 patients (113 limbs) with primary varicose veins were randomized into two groups. They were treated with radial 2ring fiber and 1470 nm laser in Group I (57 limbs) and bare-tip fiber and 980 nm laser in Group E (56 limbs) in order to ablate the saphenous vein. Vein occlusion rates at 12 weeks and pain in treated region were recorded as primary endpoint. Visual analogue scale (VAS) for assessment of pain, rates of bruising, complications and equipment failure were recorded as secondary endpoint of safety.

RESULTS:
Occlusion rates at 12 weeks were 100% in both groups. Rates of pain (0% vs. 25.0%) and bruising (7.0% vs. 57.1%) were significantly lower in Group I (p <0.0001). VAS of pain was significantly lower on postoperative day 1, day 5 and 2nd week in Group I.

CONCLUSION:
Treatment of saphenous varicose veins by EVLA using a 1470 nm laser and a radial 2ring fiber resulted in comparable occlusion rates at 12 weeks and less postoperative pain and bruising than EVLA with a 980 nm laser and a bare-tip fiber. (This article is a translation of Jpn J Vasc Surg 2014; 23: 964-971.).

KEYWORDS:
1470 nm laser; VAS score; endovenous laser ablation; radial 2ring fiber; varicose vein