

Intermittent Pneumatic Compression Therapy for Chronically Ischemic Legs

Hiroyuki Ishibashi, Takashi Ohta, Minoru Hosaka, Ikuo Sugimoto, Toshiki Nihei and Jun Kawanishi

Department of Vascular Surgery, Aichi Medical University

Summary: Intermittent pneumatic compression (IPC) therapy of the lower limb generates a significant increase in the native arterial calf inflow in patients with peripheral vascular disease. We applied this method and evaluated its efficacy in chronically ischemic legs that were not candidates for vascular reconstruction surgery. Six patients were treated with IPC therapy: four had arteriosclerosis obliterans and two had thromboangiitis obliterans (TAO, Buerger's disease). The clinical symptoms were intermittent claudication in two patients and ischemic ulcer in four. None of the patients were amenable to revascularization owing to poor run-off vessels, a lack of autogenous veins, or poor general medical condition. IPC therapy was administered for 1 hour twice a day. Claudication distance and the healing of an ischemic ulcer were evaluated before and after the IPC therapy. Resting ankle-brachial blood pressure index (ABPI), ABPI after walking 40m on a treadmill, ABPI recovery time, skin perfusion pressure (SPP), transcutaneous oxygen tension and transcutaneous carbon dioxide tension (tcPO₂) were measured as hemodynamic parameters. Three out of four ischemic ulcers were cured and two claudicants increased their claudication distance following the IPC therapy. IPC therapy was considered an effective therapy for both ischemic ulcers and intermittent claudication.