

Intermittent Compression Pump for Nonhealing Wounds in Patients with Limb Ischemia. The Mayo Clinic Experience (1998-2000)

V.M. Montori¹, S.J. Kavros^{2,3}, E.E. Walsh⁴, T.W. Rooke^{3,5}

Mayo Clinic, Rochester, MN, USA. ¹Div of Endocrinology, Diabetes, Metabolism, Nutrition and Internal Medicine. ²Dept of Orthopedic Surgery. ³Vascular Ulcer and Wound Healing Clinic, Gonda Vascular Center. ⁴Mayo Medical School. ⁵Div of Vascular Medicine and Internal Medicine.

Int Angiol 2002;21:360-6

Background. The aim of this retrospective observational study was to review the use of an intermittent pneumatic compression device on nonhealing wounds in patients with critical limb ischemia at Mayo Clinic Rochester.

Methods. The setting was a community and referral multidisciplinary wound care clinic. The authors analyzed 107 patients, median age 73, with critical limb ischemia and active ulcers started using a compression device between 1998 and 2000; 101 patients had lower extremity ulcers, and 25% had a history of amputation, and 64% had diabetes. Of all the wounds, 64% were multifactorial in etiology, and 60% had associated transcutaneous oxygen tension levels below 20 mmHg. Patients were typically asked to use the device at home on the affected limb(s) for 6 hours daily. The main outcome criterion was complete wound healing with limb preservation.

Results. The median follow-up after initiation of treatment was 6 months. Complete wound healing with limb preservation was achieved by 40% of patients with TcPO₂ levels below 20 mmHg; by 48% with osteomyelitis or active wound infection; by 46% with diabetes treated with insulin; and by 28% with a previous amputation. Half of all amputations occurred in patients with prior amputations. Seven patients discontinued the device because of pain experienced with its use.

Conclusions. Patients with critical limb ischemia and nonhealing wounds at high risk of amputation can achieve complete wound healing and limb preservation by using an intermittent pneumatic compression device.