INTERMITTENT PNEUMATIC COMPRESSION THERAPY IN PATIENTS WITH LEG ISCHEMIA

J.D. Banga, H.H.D. Idzerda, J.G. Schuurman, B.C. Eikelboom
Vascular Center, Academic Hospital, Utrecht, The Netherlands

Presented at the 17th World Congress International Union of Angiology
London, April 3-7, 1995

Intermittent compression of the calf and foot to enhance the circulation in ischaemic limbs is a hitherto poorly evaluated method. It is now possible to apply controlled compression therapy using mechanical devices. In a pilot study with a prototype device, 8 patients Fontaine stage III-IV were treated in sessions using an ArtAssist®, model AA-1000 S/N3 (ACI-Medical) pneumatic compression device, consisting of a cuff around the foot and ankle. Pneumatic compression of 100 mmHg for 3 sec per 20 sec cycle was applied for 15-90 min, with patients in supine position and legs 15° dependent. Treatment effect was measured with air plethysmography (APG®) (APG®-1000, ACI Medical), transcutaneous oxygen pressure recovery time (TORT) and visual analogue scale (VAS).

Calf blood flow increased from 39.9 (26.5) to 50.5 (32.4) ml/min (sd), p=0.0218 (Wilcoxon), TORT diminished from 4.1 (1.6) to 2.9 (0.7) min, p=0.063 (Wilcoxon), VAS indicated subjective improvement after 6/17 sessions. Best results were obtained with sessions <30 min. Longer sessions were poorly tolerated.

These results show that intermittent pneumatic compression may acutely improve the circulation in ischaemic limbs. Its long-term effect remains to be established. The clinical value is currently being assessed in a randomized placebo-treatment-controlled blinded trail.