

Compression for ischemic-diabetic feet

Purpose: About 10% of referrals for chronic ischemia of the feet are non-reconstructable by either open bypass or endovascular methods, due to lack of outflow arteries, conduit or poor medical condition. Rapid, high pressure compression of the lower extremity has been shown to increase the arterio-venous pressure difference and lowers vascular resistance by release of nitric-oxide (NO). Purpose of this study was to assess the clinical utility and the patient compliance.

Methods: 14 consecutive non-reconstructable feet with rest-pain and tissue loss at the forefoot in 93% (DM in 62%) were treated with intermittent compression using the ArtAssist device for a 3 month period. The extent of necrosis at the start of therapy was mean of 1.4 (range 1-3) toes and mean of 0.25 (range 0-1) metatarsal heads. The treatments were performed by the patient at home.

Patient compliance was measured using a hidden timer in the device. The treatment was prescribed for 4 hours a day (1 hour, q.i.d.)

Results: At the end of the 30 months of the study, limb-salvage was obtained in 71%. The remainder of feet had required below-knee amputation (29%).

Patients that underwent amputation had only used the device for only 1.1 hours a day, while patients with limb-salvage had used the device on average 2.4 hours a day.

Increased amplitude pulse-volume recordings at the metatarsal level was found ($p < .05$ paired t-test).

Conclusion: Compression is an effective treatment for patients with diabetic feet and tissue loss due to poor arterial supply.