

Reducing Oedema Using The VADOpnex System

VADOpnex



Why Reduce Oedema as early as possible?

Clinical evidence shows that managing soft tissue oedema early in Pre and Post-operative situations results in allowing surgical intervention sooner and earlier patient discharge. Allowing for reduced hospital costs (NICE guidelines suggest an estimated £300 per day per patient), better patient comfort and pain level and shorter waiting times.

How the VADOpnex can Help

The VADOpnex uses Intermittent Impulse Compression (IIC). These impulses are delivered pneumatically through a foot pad, directly to the venous plexus in the plantar region of the foot. This is a direct equivalency to ambulation, to produce a full venous return to the heart. An impulse of 130mmhg is delivered very quickly (under 400ms – literally the blink of an eye), this rapid increase in venous pressure releases Nitric Oxide from the endothelium which acts as a vasodilator. Thus, increasing blood flow in the area and allowing the drawing of lymphatic fluid from the tissues to remove the swelling. As well as limiting severe complications such as Infection, Compartment Syndrome, Fasciotomy and Thrombosis as examples.

- Reduce costs from shorter hospital stays. - Negates the need for Cryotherapy or standard ice therapy.
- No need for compression stockings or the like. - Aids in preventing severe complications post-surgery.

Evidence based practice – Clinical extracts

M.K. Dodds et.al - Department of Orthopaedic Trauma Surgery, The Mid-Western Regional Hospital, Limerick, Ireland. September 2013.

A consecutive series of 64 closed ankle fractures were managed using the AV impulse system prior to surgery. Patients were compared to 73 consecutive closed ankle fractures managed surgically in the same unit immediately prior to the implementation of the AV impulse device study. **Results:** Median length of time to surgery, hospital stay duration and surgical site infections were all significantly reduced in the study group as compared to the control group. The estimated cost per day for an acute trauma bed is €1117. The mean average length of stay for the control group was 4.53 days as compared to 3.01 days for the study group. This equates to a saving of approximately €1661.38 per patient. Over the study period of 10 months with 64 patients, an estimated 97 bed days were saved. 8 out of 73 patients (11%) in the control group developed a surgical site infection requiring treatment with antibiotics (2 patients requiring intravenous therapy in hospital). In the study group, 2 patients (3%) developed surgical site infection requiring oral antibiotic therapy at home.

M. Bould et.al - Department of Trauma & Orthopaedic Surgery, Weston General Hospital, Weston-Super-Mare. January 2013.

Where ORIF cannot be performed before the onset of swelling in the first 24–48 h, patients typically require up to 7 days of inpatient bed rest and elevation to reduce swelling to an acceptable level for ORIF. The primary aim of this study was to determine whether delay to ORIF could be reduced with the pre-operative application of an intermittent pneumatic foot pump (IPF). The study compared 12 patients managed with an IPF to 12 matched historical controls who were not.

Results: Patients managed with IPFs had a statistically significant 50% reduction in time from presentation to surgery compared to those managed without ($p = 0.024$), and had a reduced hospital stay ($p = 0.116$). This resulted in a net saving of £10,480 (£953 per patient).

Stöckle U. et al - Foot Ankle Int. July 1997.

Sixty patients with foot or ankle trauma were randomised and treated in three groups. Comparing intermittent impulse compression, continuous cryotherapy, and standard therapy. Beginning at admission, every 24 hours the circumference was measured around the ankle, midfoot, and forefoot. **Results:** After 24 hours of treatment, there was a 47% reduction in swelling with the A-V impulse System, 33% with continuous cryotherapy, and 17% with cool packs. After 4 days of postoperative treatment, the A-V impulse System reduced the swelling by 74% versus 70% with continuous cryotherapy and 45% with cool packs. Both new methods are preferable to cool packs. Because of the better preoperative results, the A-V impulse System proved to be the most effective device.



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