

SUPERIORITY OF SHORT-STRETCH BANDAGES TO IMPROVE VENOUS PUMPING FUNCTION

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Aim: To study the influence of elastic* and inelastic** bandages on the venous pumping function in patients with severe venous incompetence.

Methods: Ejection fraction as a very meaningful parameter characterizing venous pumping function was measured in 30 patients affected by severe venous reflux in the great saphenous vein (CEAP C2-C5) and in 15 healthy volunteers as a control. Long-stretch* and short-stretch** (cohesive) on top of a padding layer*** were used as models for elastic and inelastic bandages (multilayer, multi-component system). Both types of bandages were applied with different stretch in order to exert a comparable supine and standing pressure. The interface pressure was measured continuously during the test (PicoPress[®], b1-point). In a second series measurements were repeated after wearing the bandages for one week.

Results: Short stretch compression increases ejection fraction significantly more than elastic bandages being applied with the same resting pressure. If we apply elastic bandages with high stretch in order to achieve a standing pressure comparable with that of inelastic bandages, this is hardly tolerated and induces only a minimal increase of the ejection fraction. The improvement of ejection fraction correlates significantly with the working pressure and with the pressure amplitudes during exercise. These pressure amplitudes characterize the so-called massaging effect of a bandage. After wearing bandages for one week it could be demonstrated that hemodynamic effects were still maintained.

Conclusions: Short stretch bandages applied with a pressure of more than 60 mm Hg in the standing position improve venous pumping function up to one week.

* *Dauerbinde*[®]K

** *Mollelast*[®]haft

*** *Cellona*[®] padding layer, Lohmann&Rauscher