

# Prospective comparison of the pneumatic cuff and manual compression methods in diagnosing lower extremity venous reflux

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## Aim

To compare pneumatic cuff with manual compression in diagnosing reflux in patients with chronic venous insufficiency (CVI).

## Patients and Methods

Eighteen patients (Clinical Etiologic Anatomic Pathophysiologic [CEAP 2-5], median Venous Clinical Severity Score [VCSS 6.5]) were studied. The VenaPulse device (ACI Medical, San Marcos, California) was used for cuff inflation. The hemodynamic performance of the 2 methods was tested in the first 9 patients, while their diagnostic value was tested in the last 9 patients.

## Results

Both methods induced equal compression with median peak velocity of the antegrade flow (PVA) being 86 cm/s ( $P=.65$ ). Coefficient of variation (CV) for PVA in the superficial veins was significantly higher with the manual method (16.8%) compared to the VenaPulse method (9.5%,  $P<.001$ ), while sensitivity and specificity were 85% and 100%, and 78% ( $\kappa .68$ ,  $P<.001$ ) and 100%, respectively.

## Conclusions

Pneumatic cuff and manual compression were shown to be equally effective in diagnosing venous reflux. Cost-effectiveness and ease-of-use studies comparing these methods are justified.

**Keywords:** vascular lab; varicose veins; pneumatic compression

