

RANDOMISED CONTROLLED TRIAL

Compression Stocking With 100% Donning and Doffing Success: An Open Label Randomised Controlled Trial

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WHAT THIS PAPER ADDS

Compression garments that do not compress the foot and heel area may represent a relatively simple solution to improving patient's treatment adherence. They are significantly easier to put on (don) and take off (doff) than standard stockings, while providing the same degree of diurnal oedema prevention.

Objective: The aim of this study was to test whether an investigational two layer stocking exerting 27–29 mmHg pressure at the medial supramalleolar level, but without compression in the foot and heel, is easier to put on and take off than a standard stocking of the same compression class (23–32 mmHg), and also to assess the prevention of diurnal oedema with both types of stocking.

Methods: This was an open label randomised controlled trial, which included 47 patients. All participants were at least 65 years of age and suffered from chronic venous disease class C3–C6 in one leg. The primary end point was donning success; secondary endpoints were doffing success, prevention of diurnal oedema over one day, and the comfort of wearing the stocking. Patients were randomly allocated to one of two groups. Both types of compression stocking were compared in each group for ease of donning and doffing in the manner of a crossover study. Subsequently, patients wore the stocking type assigned to their group for a whole day to evaluate comfort and the effect on diurnal leg volume.

Results: All participants were able to don the investigational stocking unaided, compared with 75% for the standard stocking ($p < .001$). Unaided removal success was 100% with the investigational stocking vs. 66% for the standard stocking ($p < .001$). There was no significant difference in leg volume reduction between the study groups after a day of wear. The investigational stocking was also rated as being more comfortable than the standard stocking ($p < .001$).

Conclusion: The investigational stocking, which has no compression in the foot or heel area, is significantly easier to don and doff, with no inferiority in oedema prevention, compared with a standard stocking of the same compression class.

Keywords: Compression free foot and heel area, Compression stocking, Put on (don), Diurnal leg oedema, Take off (doff), Treatment compliance

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INTRODUCTION

Compression therapy has been shown to be clinically effective in the treatment and prevention of a wide range of diseases including chronic venous disease, deep venous

thrombosis, post-thrombotic syndrome, post-operative compression, and lymphoedema.^{1,2}

However, poor treatment compliance, estimated to be approximately 60%,^{3–7} represents the main shortcoming of compression stocking therapy. Difficulty in donning and doffing stockings is the main reason for this, especially for patients with reduced grip strength and/or arthritis. Further reasons for non-compliance include obesity, pruritus, skin irritation, skin lesions, a feeling of constraint, a feeling of heat build up, garment sliding, and leg strangulation.^{8–10}

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