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## Background

This study's objective was identification of additive benefits of a novel pneumatic compression therapy, the LymphaPod® (Lympha Press®, Glen Mills PA), to a conventional therapy plan for the treatment of lower extremity lymphedema and associated impairments in the severely overweight.

## Method

This 12-week, randomized, home-based pilot study began in May 2011. Eligibility included BMI greater than 39 and lower extremity lymphedema. All subjects (n=10) received an adjustable static compression system (FarrowWrap). Half of the subjects (n = 5) were randomly assigned to pneumatic compression and utilized the Lympha Press calibrated gradient compression device with LymphaPod® appliance for up to 3 hours daily. Outcome measurements included body weight, limb circumferences and volumes, Short Physical Performance Battery (SPPB), and the Impact of Weight on QOL questionnaire.

## Main Points

Patients receiving treatment with Lympha Press® and the LymphaPod® appliance had:

- Greater losses in body weight compared to static compression garment alone
- 1000 times greater circumference reduction of the affected limb compared with static compression.
- A trend towards increased functional performance.

## Results

Four week analyses indicated the pneumatic compression group had greater losses in body weight compared to the static compression group ( $p=0.014$ ). Average bilateral limb circumference reduction from pneumatic compression was 1000 times greater with an average loss of  $10\pm 4\%$  compared to  $0.01\pm 0.1\%$  with static compression therapy ( $p=0.008$ ). A trend toward increased functional performance was observed in the pneumatic compression group compared to the static compression group ( $p=0.08$ ) based on SPPB summary scores. No difference in quality of life was detected based on compression modality ( $p>0.05$ ).

## Conclusion

Preliminary analyses indicated that the novel pneumatic compression therapy with LymphaPod® had an additive effect on losses in body weight and limb measurements compared to static compression alone. The sample size limited the effect size. Therefore additional research is needed.

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