



CONTROL OF LYMPHEDEMA OF THE LOWER LIMBS USING GROSGRAIN STOCKINGS AS MONOTHERAPY

Medicine

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ABSTRACT

Background: Lymphedema is a chronic medical condition that has no cure however with specific treatment it is possible to keep the size of the limb normal or close to normal.

Aim: aim of this study is to report on the reduction of edema using stockings made of grosgrain as monotherapy.

Design: Consecutive patients in a longitudinal study with unilateral leg below-knee lymphedema were included for the evaluation of the grosgrain stockings as monotherapy and evaluated for one year by the weekly volumetry.

Setting: The study was developed in Clínica Godoy-Sao Jose do Rio Preto-Brazil.

Population: Thus, ten male and 33 female patients, with a mean age of 53.12 years were included in this study. Twenty-five patients had mild, 16 had moderate and two had severe lymphedema.

Method: They were evaluated by volumetry at weekly return visits and the stocking was adjusted as necessary. The paired t-test was used for statistical analysis with an alpha error of 5% being considered acceptable.

Results: There was total or almost total reductions (differences of less than 100 g) of the lymphedema compared to the contralateral leg in 86% of patients at six months and in 93% of patients at one year; reductions did not occur in 7% of the patients (paired t-test: p-value <0.0001).

Conclusion: Monotherapy using grosgrain stockings is a therapeutic option in the treatment of lymphedema of the lower limbs.

KEYWORDS

Lymphedema treatment, compression mechanism

INTRODUCTION

Lymphedema is a chronic, usually progressive, medical condition that has no cure however with specific treatment it is possible to keep the size of the limb normal or close to normal. [1] Intensive treatment in an outpatient setting allows reductions of about 50% in volume within five days. [1] The most recommended treatment regimen involves an association of therapies generally including compression mechanisms, myolymphokinetic exercises and lymph drainage. [2]

The same forms of therapy used in the reduction phase of treatment can be used to maintain the results however compression therapy as monotherapy is the most suitable. Alternative forms of compression include stockings, and elastic or inelastic bandages where multilayered bandages are more indicated during the treatment (reduction) phase and elastic stockings are better to maintain the results. [3-6]

In recent years, Godoy & Godoy have adapted a fabric called gorgurão in Brazil and grosgrain in English to manufacture compression garments for the treatment of lymphedema. One evaluation of this textile shows that it causes significant working and resting pressures during passive exercising. [7] Other studies show that its association with monitored myolymphokinetic activities is effective in the treatment of arm and leg lymphedema of children. [8-11] The aim of this study is to report on the reduction of edema using stockings made of grosgrain as monotherapy in the treatment of leg lymphedema.

Design

Consecutive patients in a longitudinal study with unilateral leg below-knee lymphedema were included for the evaluation of the grosgrain stockings as monotherapy and evaluated for one year by the weekly volumetry.

Setting

The study was developed in Clínica Godoy-Sao Jose do Rio Preto-Brazil.

Population

Thus, ten male and 33 female patients, with a mean age of 53.12 years were included in this study. Twenty-five patients had mild, 16 had moderate and two had severe lymphedema.

METHOD

Patients were diagnosed based on their medical history and physical examination; complementary tests were used in uncertain cases. All patients were evaluated by volumetry to assess the degree of lymphedema. Obese patients and those with significant limitation of movement of the tarsal joint or other physical conditions that limited walking were excluded. The use of grosgrain stockings was indicated as monotherapy and so patients received training and guidance on the use of the stockings. Participants were followed up at weekly return consultations when volumetry was performed and the stockings were adjusted as required.

Descriptive analysis and the paired t-test were used for statistical analysis with an alpha error of 5% being considered acceptable. The study was approved by Ethics Research Committee of Medicine School of Sao Jose do Rio Preto-Brazil-FAMERP# CAAE: 10979812.9.0000.5415.

RESULTS

Total or almost total reductions (differences of less than 100 g) compared to the contralateral leg occurred in 86% of the patients at six months and in 93% by one year; no reduction was seen in 7% of the patients. The reduction in volume was significant (paired t-test; p-value <0.0001).

DISCUSSION

This study evaluated the use of grosgrain stockings as monotherapy in the treatment of leg lymphedema. It shows that there was a significant reduction and even normalization of the edema in more than 90% of the patients within one year of treatment. This study is part of a line of research related to the use of this fabric in lymphedema treatment. A previous study using grosgrain stockings performed weekly evaluations over one month during which time difficulties in adjusting and adapting the stocking were identified; about 30% of patients found it difficult to use the stocking. Thus, patient guidance is essential for successful treatment.

Several studies using stockings, penile compression and bandages made from this textile have been published.^[7-11] What is important about this fabric is its physical characteristics; it is inelastic however it causes excellent working pressures (skin-stockings interface pressure).^[7] The limitation of its use is the need for compression garments to be made-to-measure individually for each patient and the need of constant adjustments as the swelling reduces. Because of this need of frequent adjustments, the use of eyelets and cord facilitate use and improve results compared to other forms of closure such as zippers and Velcro.

According to the literature, multilayered bandages are the best type of compression in the treatment of lymphedema,^[4] however if we look to the future, bandages will probably be a colorless film with the compression capacity of an elastic material and constraint of an inelastic material. So we are running against evolution, however this is the best option we have evaluated in recent years.

The strategy for achieving good results is by weekly evaluations; a study with weekly, biweekly and monthly evaluations was conducted in order to establish the best evaluation period. The conclusion was that weekly assessments are best and almost mandatory in the treatment (reduction) phase. The first week is the most difficult with the training of patients and improvements by adjusting the stocking.

The results of this study open a new perspective in the treatment of lymphedema, where the possibility of monotherapy transfers part of the responsibility of treatment to the patient and the correct use of stockings can lead to normal or close to normal leg sizes. The combination of therapies using compression garments may facilitate compressive therapy in these patients.

After normalization, the best option is elastic stockings with 30/40 mmHg compression being recommended because of adhesion to treatment and the maintenance of results.

CONCLUSION

Monotherapy using stockings made of grosgrain is a therapeutic option in the treatment of lymphedema of the lower limbs. These stockings alternating with grosgrain stockings allow the maintenance of reductions achieved during treatment for long periods, for example, more than three years in some patients.

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