

Pressure Garment Therapy and Hypertrophic Burn Scars: A Case Study and Evidence-Based Analysis

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INTRODUCTION

This case study and evidence-based analysis aims to determine if pressure garment therapy (PGT) is more effective than no pressure or other modalities for the treatment of hypertrophic scars in burned patients. PGT has been a first-line conservative therapy for hypertrophic scarring since the early 1970s, however the research presents conflicting results and lacks consistency with study characteristics. With a myriad of possible side effects and limitations, research on PGT needs to be reanalyzed and its true potential determined.

METHODS

In order to identify all relevant articles, the major computerized databases were searched: PubMed, the Physiotherapy Evidence Database (PEDro), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and The Cochrane Library. Search terms included “compression garments,” “hypertrophic scar,” “pressure garment,” “scar,” “burn,” and “pressure therapy.” The main search of PubMed yielded 47 results. Twenty-five articles were excluded by title review, as the title suggested the subject did not pertain to the topic of this analysis, 13 did not meet the inclusion criteria of being published in the last 10 years, and 1 was excluded for not being in English. This left 8 articles for abstract review. Two were excluded after the abstracts were reviewed, as the subject did not pertain to the topic. This left 6 unique studies for review and analysis.

A search of PEDro produced 5 results, all of which were excluded: 3 by title review and 2 were duplicate publications. The search of CINAHL produced 3 duplicate publications, all of which were excluded. Searching Cochrane yielded 3 results and all excluded, as well: 2 were duplicate publications and 1 required a fee for access, therefore was excluded. A search of the unpublished literature produced 1 unique result included for review and analysis. A search for available foundational research yielded 1 available article that was cited by several textbooks and included articles. In total, 8 articles were included for this review: 6 were randomized controlled trials (RCTs), 1 was a series of case studies, and 1 was a meta-analysis. Each of the 8 articles were reviewed and analyzed.

FINDINGS

A review of the current literature revealed that PGT can reduce the thickness or height of hypertrophic scars, with the greatest effects seen in the first month of treatment. PGT has no statistically significant effect on erythema, pruritus or rigidity. The mechanism of action and optimal pressure for garments remains hypothetical. Integrating the results from all the included studies became apparently unlikely, as each study varied considerably and many essential characteristics were commonly not reported.

CONCLUSION

The overall quality of the current research is poor and consistently lacks good external validity. While PGT was shown to have no effect on all the characteristics of hypertrophic scars, additional benefits may exist. These possible benefits, the potential side effects, and cost should all be considered and discussed with the patient before prescribing PGT for hypertrophic scarring.