

Compression: Yes or No?

Is compression therapy a more effective treatment of chronic venous leg ulcers than alternative treatments in regards of healing the wound faster and preventing recurrence?

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Introduction:

Chronic wounds, by definition, last for a prolonged period of time, sometimes even for the rest of a person's life. Venous leg ulcers are a major chronic issue in the world and New Zealand at this current time, and are a leading cause of morbidity in the world (Lazarus, Valle, Malas, Qazi, Muruthur, Doggett, Fawole, Bass & Zenilman 2014). As our current population ages, with the risk factors more prevalent within the population, chronic venous ulcers will more than likely increase, and therefore become an issue for the population of New Zealand's health. There are various treatments currently available in the market; however I wished to see which treatment was more effective based on literature and research.

From my research, I found many methods of treatment for venous leg ulcers, many of which are used in New Zealand, and some that haven't made it to New Zealand. One that I have seen used in practice the most is the use of compression. Four layered compression is considered the gold standard of ulcer treatments, (Green, Jester, McKinley & Pooler, 2014) because it is universal as well as effective, with a 70% success rate. This form of compression is made up of four different materials, both for padding and compression. It is applied in both figure of eight and in a spiral pattern where 50% of the last bandage applied is covered, (Green, 2014). The use of these two techniques helps to eradicate the swelling surrounding the ulcer and helps to restart the blood flow to its normal passage. This means that the surrounding tissues are able to get fresh blood flow and allow the wound to heal (Fletcher, 2005). Though this type of treatment is effective in healing the venous ulcers, patients often complain about conservative compression because it is bulky, uncomfortable for long periods of time and restricts the patient's movement. Compression stockings work in the same way as conservative compression but because the compression stockings are thinner, they enable the patient or client to be able to manage their own care by applying the stockings, and are able to be more independent, allowing them to undertake daily activities and be more mobile. (Tickle, 2014)

Alternative methods of treatment other than compression include surgical treatment, skin grafts, and various dressings. One of these treatments is the use of ultrasound-guided injections, which use radiofrequencies or laser energy to cauterise and burn abnormally large veins to reduce venous hypertension (Whiddon, 2007). Sub-fascial endoscopic perforator surgery (SEPS), is another form of treatment and is a mildly invasive procedure where under general anaesthesia a balloon tipped catheter is inserted into the perforated or damaged veins, separating the tissues, therefore decreasing the pressure of the venous system (Whiddon, 2007). The main benefit of surgery compared to the compression is the success rate. In a research review undertaken by Whiddon, it was found that patients who had surgical treatment, including both ultrasound-guided injections and SEPS, had an 88% success rate of healing the ulcer and had a 13% ulcer recurrence rate

Recommendations:

- More research to be done revolved around comparing the current treatment options in New Zealand and whether or not they are effective because I feel that a lot of the information is outdated.
- Improving the lack of research, or more research to be conducted of the alternative forms of treatment that are available specifically for venous leg ulcers
- That surgical treatment should be considered into being integrated into New Zealand as an option for the patients as it is effective and though not cheap, can improve the patient's quality of life and the time available for district nurses to spend their time with other types of patients.



In conclusion, compression, specifically in New Zealand, is a more effective treatment compared to other forms of treatment based on evidence showing that compression is more cost effective in the long run, especially with compression hosiery that allows the patient to be independent with their wound and treat it on their own without consultations with health professionals, as well as being sustainable by being able to reuse them. Compression also has a high healing rate of 70-90% between various studies and reduces the recurrence of venous leg ulcers by 23% (Tickle, 2014). In my opinion, I feel like SEP surgery is a more effective treatment than compression as it shortens the healing time of the ulcer and decreases the patients suffering.

Picture sourced from Whiddon, L. (2007). The treatment of venous ulcers of the lower extremities. *Baylor University Medical Center Proceedings*, 20(4), (pp. 363-366)

References:

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- Lazarus, G., Valle, M.F., Malas, M., Qazi, U., Murathur, N.M., Doggett, D., Fawole, O.A., Bass, E.B., & Zenilman, J. (2014). Chronic venous leg ulcer treatment: Future research needs. *Wound Repair & Regeneration*, 22(1), (pp. 34-42). doi:10.1111/wrr.12102
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Assignment 2:

Throughout my placements as a nursing student I was exposed to the treatment option of compression for leg ulcers and though I observed it being used and the results that were displayed afterwards, I couldn't quite grasp why this method was used predominantly more than other methods and what other methods were available for leg ulcers. I created a question using the PICOT model to determine if compression was a more effective way of treatment of venous leg ulcers than other forms of treatment. Through my research I discovered other methods of treatment that have used globally but have not yet made it to New Zealand, which I believe are effective forms of treatment; much more effective and less harmful to the patients quality of life than the conservative compression treatments. I decided to present my findings in a poster rather than a submission because I thought that in that instance it may be noticed more and have more of an impact on the viewers. I think a poster is more visually appealing to look at and for this topic and particular I think it would be an effective way to transmit the information that I gathered to the people that will view the poster.

PICOT Category	Information leading to question	Rationale
Population	People with chronic leg ulcers specifically venous.	Leg ulcers are the most common wound which requires compression or alternative methods of healing. Venous rather than arterial as compression is contraindicated with arterial ulcers. -Age is an irrelevant factor in this because there is a lack of evidence and research to support a specific age that are susceptible to leg ulcers
Intervention	People with chronic venous leg ulcers who are receiving compression therapy treatment	I will be looking for articles that research the effectiveness of compression therapy, as well as the impact that compression has on the patient, and the benefits and weaknesses of compression therapy
Comparison	People with alternative methods of treatment for chronic venous leg ulcers	Interested in research and what happens when compression therapy is not used and alternative therapy is used in its place
Outcome	The healing of the venous ulcer and to prevent the recurrence of future ulcers/chronic wounds. Healing in this case refers to "complete epithelial cover with no scabs" (Tickle 2014)	I want to know if the use of compression helps to resolve the ulcer and heal it faster as well as prevent future ulcers.
Time	No timeframe for healing But to see which heals faster in comparison	Each person's ulcer/wound may be caused by differing circumstances in their lifestyles so it is impossible to put a specific timeframe on the healing but rather compare which can heal the ulcer faster.

Whitehead, D. (2013) Searching and reviewing the research literature. In Z. Schneider & D. Whitehead (Eds.) *Nursing and midwifery research methods and appraisal for evidence based practice* (4th ed.) (pp. 35-56). Australia: Elsevier