Using a muscle pump activator device to stimulate healing for non-healing lower leg wounds in long-term care residents

Harris C[1], Ramage D[1], Boloorchi[1], Vaughan L[2], Kuilder G[2], Rakas S[2]

Abstract

Chronic non-healing wounds are a burden in the Long-Term Care (LTC) sector, increasing costs, morbidity, and mortality and causing pain and suffering. The objective of this LTC Innovation pilot was to test the value of a promising new neuromuscular stimulation device in elevating the experience and satisfaction of the residents, engaging and empowering the nursing staff, and improving healing and/or reducing costs. Small, wireless, and worn at the knee, this muscle pump activator is self-contained, wearable, and battery-powered to increase lower-leg blood circulation (up to 60% of that achieved by walking). It has no wires, weighs just 10 g, and is easy to use. Nurses in four LTC homes identified residents with non-healing lower leg wounds. Consent was obtained, and on-site training was delivered. Eleven residents were recruited. Only seven met the inclusion criteria for venous/mixed or diabetic foot ulcers. Of the seven who met the criteria and were adherent with best practices and the muscle pump activator, four healed 100%, and one healed 90%. Two patients with other aetiologies, who were also adherent, healed. All adherent residents had an average weekly decrease in wound size of 9.75% and were extremely happy with the results. Three residents who were non-adherent had a 9.25% increase in wound size per week. One patient with diabetic foot ulcers developed skin changes at the end of life and passed away. Nursing staff and cognisant residents can easily adjust the pulse of muscle pump activator, and application and removal are simple. Most residents feel engaged with the therapy "because they feel it working". The LTC corporation feels that it is a great adjunctive solution for many types of lower-leg wounds (venous, mixed, diabetic, pressure) in addition to best practices in the LTC and Retirement home sectors.