

Effect of Low-Level Laser Therapy on Wound Healing in Diabetic Ulcer

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Abstract

Introduction: A diabetic person has a 25% lifetime risk of developing a diabetic foot ulcer (DFU), leading to limb amputation in up to one in six DFU patients. Low-level light therapy (LLLT) uses low-power lasers or light-emitting diodes to alter cellular function and molecular pathways and may be a promising treatment for DFU. However, very little is reported on the efficacy of LLLT for diabetic wounds. This study aims to analyse the quantitative reduction in diabetic ulcers when applying low-level laser therapy.

Methods: An extensive literature search is done to expand knowledge about the various methods and outcome methods followed for diabetic ulcers. The samples were taken for study based on the inclusion and exclusion criteria using a purposive sampling method. All the participants in the survey were pre-tested by measuring the wound size with a limit measure app. The participants are allocated based on simple random sampling. The case group is given low-level laser therapy for 3 weeks with 7 sessions (3+2+2). The control group was treated with a saline wash and dressing. After 3 weeks, the size of the wound is measured and compared with the previous ones. The percentage of wound size reduction is calculated, and the results are given.

Results: In the LLLT group, the reduction in mean circumference of wound size was statistically significant from 14.76 to 12.63 and $p < 0.001$. this was compared to the control group treatment 17.56 to 16.65.

Conclusion: The LLLT group significantly improved wound size reduction and proved more effective than usual saline wash and medications.