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Abstract

Foot ulcers are serious complications of diabetes mellitus (DM) and are known to be resistant to conventional treatment.

This study was conducted to evaluate the efficacy of low-level laser therapy (LLLT) for the treatment of diabetic foot ulcers in a tertiary care centre (Department of Surgery, Mahatma Gandhi Memorial Medical College and Maharaja Yashwantrao Hospital, A.B. Road, Indore).

A total of 30 patients with type 2 DM having Meggitt-Wagner grade I foot ulcers of more than 6 weeks duration with negative culture were studied. Patients were randomized into two groups of 15 each. Patients in study group received LLLT (660 ± 20 nm, 3 J/cm²) along with conventional therapy and those in control group were treated with conventional therapy alone. The primary outcome measure was the absolute and relative wound size reduction at 2 weeks compared to the baseline parameter. Percentage ulcer area reduction was $37 \pm 9\%$ in the LLLT group and $15 \pm 5.4\%$ in the control group ($p < 0.001$). For ~75% of wounds of the treatment group, wound area reduction of 30-50% was observed. In contrast, for the control group, ~80% of wounds showed a wound area reduction of <20% on day 15. Further, the wounds with initial wound area 1000-2000 mm² seems to have better final outcome than the groups with larger areas. The treated groups showed higher amount of granulation than the control group.

The results suggest that LLLT is beneficial as an adjunct to conventional therapy in the treatment of diabetic foot ulcers.

Conclusion

The treated groups showed higher amount of granulation than the control group. The results suggest that LLLT is beneficial as an adjunct to conventional therapy in the treatment of diabetic foot ulcers.

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