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Effect of laser therapy treatment on diabetic peripheral neuropathic pain and quality of life in older adults: A randomized clinical trial

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Statement of the Problem: Diabetic Peripheral Neuropathy (DPN) is one of the most debilitating complications of diabetes mellitus (DM). The pharmacotherapy of DPN is challenging in older adults due to the risk of adverse drug reactions associated with polypharmacy. The purpose of this study was to assess whether deep tissue laser therapy (DTLT) added to standard of care is effective in reducing pain and in improving the quality of life (QOL) of older adults with DPN.

Methodology & Theoretical Orientation: A randomized, double-masked, sham-controlled, pilot clinical trial was conducted at the Department of Geriatric Medicine, All India Institute of Medical Sciences (AIIMS), New Delhi, India. Forty patients randomly assigned to receive DTLT (n=20) or sham laser therapy (SLT, n=20). During the 12-week intervention period participants enrolled were received either DTLT or SLT treatments twice-per-week for 4 weeks and then once-per-week for 8 weeks. QOL, pain, function, and serum concentrations of Interleukin-6 (IL-6) and Monocyte Chemoattractant Protein-1 (MCP-1) proteins were assessed at baseline and after the intervention period. Results were compared using ANOVA in a pretest-posttest design.

Findings: Post intervention there was a significant improvement in the QOL in the LT group and significant reductions in pain and serum concentrations of IL-6 and MCP-1 proteins in both groups. The reduction in pain was significantly greater for the LT group, as compared to the Sham LT group, in all pain scales. The reduction in serum concentrations of IL-6 and MCP-1 were also significantly greater in the LT group when compared to the Sham LT group.

Conclusion & Significance: DTLT significantly impacted pain, QOL, and the inflammatory markers IL-6 and MCP-1 as compared to placebo, suggesting it to be an effective non-pharmacological addition to standard of care in the management of pain and in improving the quality of life of older adults with DPN.

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