Nursing Therapeutic Approach Using Low-Level Laser Therapy on Burns: A Report



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Burns are complex injuries that require specialized care. Lowlevel laser therapy has been used as a therapeutic resource in nursing, promoting pain relief, tissue regeneration, and accelerated wound healing.

Objective: To report the benefits of low-level laser therapy in the healing of a deep partial-thickness burn on the right upper limb and right hand.

Method: This is a case report. P.S.R., 26 years old, with no comorbidities, presented a deep partial-thickness burn on the right upper limb and right hand, caused by fluid from the cooling hose. He reported feeling pain at the time, washed the area with water, felt some relief, and did not seek medical attention. However, in the evening, pain returned and small blisters appeared. The next day, he went to the hospital. Upon receiving this patient with burns on the right upper limb and right hand, presenting with blisters in these regions, swelling, and drainage of dark fluid, with a wound approximately 30 cm long by 15 cm wide. The burn on the right upper limb and right hand was monitored from January 14 to January 28, 2025, totaling fifteen days of low-level laser therapy treatment. Ethical aspects: A signed informed consent form was obtained.



D1: The area was first cleaned with antiseptic chlorhexidine. Blisters were drained, followed by mechanical debridement of necrotic skin. The wound and surrounding area were cleaned with PHMB solution.

Results:

D8: The patient returned and skin regeneration was observed, with granulation tissue and no signs of infection. The wound and surrounding area were cleaned again with PHMB solution. Red laser 1J was applied over the wound using a scanning technique, and infrared laser 2J was applied around the wound, maintaining a 1.5 cm spacing between points. A polyester mesh with TLC healing matrix was used as the primary dressing, and gauze and bandage as the secondary dressing. The patient was again instructed to return in seven days.









Red laser therapy 2J was applied over the entire wound using a scanning technique, and infrared laser therapy 3J was applied around the lesion. The primary dressing consisted of a polyester mesh impregnated with TLC-Ag healing matrix (non-adherent to the skin), and the secondary dressing included gauze and bandage. The patient was instructed to home and return in seven days for reassessment and dressing change.

D15: fully regenerated, epithelialized skin was observed. The wound and surrounding skin were cleaned with PHMB, and a moisturizing, regenerating emulsion was applied. After 15 days of treatment, the patient was discharged with instructions for home care and resumption of normal activities.



Conclusion: Low-level laser therapy proved effective in healing deep partial-thickness burns, promoting accelerated cellular regeneration, pain control, and functional recovery in a short period. The role of nursing professionals in selecting safe and effective treatment and adjunct therapies is highlighted.

I have no conflict of interest moniquevotto@gmail.com