

Role of Low Level Laser Therapy in Adult Burn Patient

Kishore Kumar¹, Ravi Kumar Chittoria², Amrutha JS³

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Abstract

Low level laser therapy helps in various aspects of wound healing. It has effect on cell proliferation, metabolism, angiogenesis, apoptosis and inflammation. This study assess the role of Low level laser therapy (*Low Level Laser Therapy*) in adult burns patients

Keywords: Low Level Laser Therapy; Adult Burns; Wound Healing.

INTRODUCTION

Burns injury is one of the important factors contributing to mortality in a developing country like India. Aim of this case report is to assess the role of Low level laser therapy in healing of burn wounds in adult burns patients. Clinical examination of the wound site before and after the use of Low level laser therapy was done. The

normal pace of wound healing and epithelialization is at the rate of Imm/day. Optimum recovery requires the wound bed and the patient to be fit. The advanced wound healing therapies aim to hasten the process of wound healing by expediting the advancement of epithelial edge of the wound. Many newer techniques have been used to advance the epithelialization such as *Low Level Laser Therapy*.

MATERIALS AND METHODS

The study is done in a tertiary care hospital in South India. The subject is a 55 year old male patient, known hypertensive for 3 years, Alleged history of accidental thermal burn with fire flame while saving his wife from burn. Patient sustained 2nd degree Flame Burn 15% TBSA involving Left Hand, Left Thigh and Leg back and Right Leg. Admitted in Burns ICU, managed with antibiotics, IV Fluids, analgesics. Six sessions of Low level laser therapy following which the wound improved well (Fig. 3).

Authors Affiliation: ¹Junior Resident, Department of General Surgery, ²Professor, ³Senior Resident, Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

Corresponding Author: Ravi Kumar Chittoria, Professor, Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry 605006, India.

E-mail: drchittoria@yahoo.com

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Fig. 1: 15% second degree burns at the time of admission

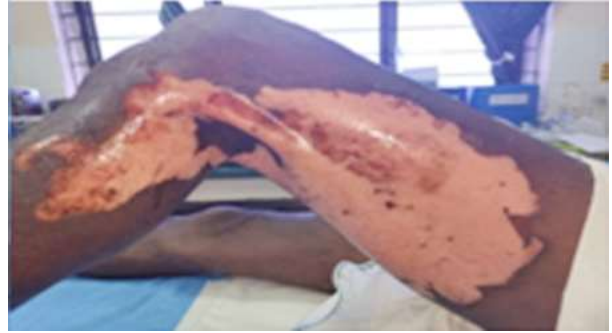


Fig. 2: Low level laser therapy

RESULTS

Low Level Laser Therapy is useful in improving the wound healing of burns in adult patients.

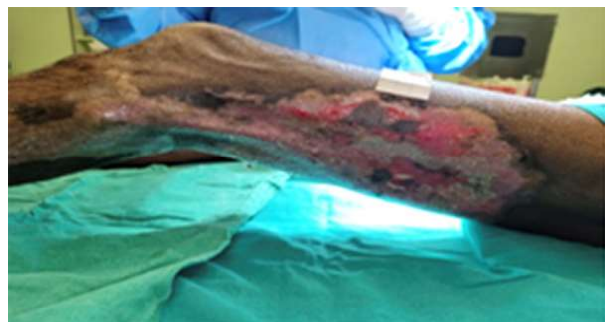


Fig 3: after 6 session of Low level laser therapy

DISCUSSION

Low level laser therapy is generated from G-As (gallium-arsenide) laser. *Low Level Laser Therapy* acts by photo biomodulation. It has effect on cell proliferation, metabolism, angiogenesis, apoptosis and inflammation. Effective *Low Level Laser Therapy* utilises wavelength of red to near infrared (600-1070 nm). *Low Level Laser Therapy* acts on cytochrome c oxidase, promotes nuclear factor kappa b which promotes cell proliferation and anti-apoptotic action. It also upregulates VEGF which promotes angiogenesis. Low level laser is applied by scanning mode and adjusted to cover the region of the wound. Application is for 5-10 minutes per weekly session. It has a stimulatory effect on raw areas and wounds by improving granulation. It softens scars by reducing fibrous tissue formation, improves blood supply and promotes nerve regeneration. It has an anti-inflammatory action, the mechanism of which is not clearly elucidated.

CONCLUSION

Low level laser therapy is found to be useful in promoting wound healing in adult burns patients.

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