Effect of photo biomodulation on the healing process of donor site in patients with grade 3 burn ulcer after skin graft surgery (a randomized clinical trial)

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Skin graft is a standard therapeutic technique in patients with deep ulcers but managing donor site after grafting is very important. Although several modern dressings are available to enhance the comfort of donor site, using techniques that accelerate wound healing may enhance patient satisfaction. Low-level laser therapy (LLLT) has been used in several medical fields, including healing of diabetic, surgical, and pressure ulcers, but there is not any report of using this method for healing of donor site in burn patients. The protocols and informed consent were reviewed according to Medical Ethics Board of Shahid Beheshti University of Medical Sciences (IR.SBMU.REC.1394.363) and Iranian Registry of Clinical Trials (IRCT2016020226069N2). Eighteen donor sites in 11 patients with grade 3 burn ulcer were selected. Donor areas were divided into 2 parts, for laser irradiation and control randomly. Laser area was irradiated by a red, 655-nm laser light, 150 mW, 2 J/cm2, on days 0 (immediately after surgery), 3, 5, and 7. Dressing and other therapeutic care for both sites were the same. The patients and the person who analysed the results were blinded. The size of donor site reduced in both groups during the 7-day study period ($P < 0.01$) and this reduction was significantly greater in the laser group ($P = 0.01$). In the present study, for the first time, we evaluate the effects of LLLT on the healing process of donor site in burn patients. The results showed that local irradiation of red laser accelerates wound healing process significantly.

Biography

I am a MD, PhD, Post Doc in Medical Laser and I have been using photo biomodulation (PBM) and low-level laser therapy (LLLT) for wound healing particularly non healing diabetic wounds candidate for amputation and burn wounds which require split thick ness skin graft, since 2003. I have published 22 international papers and 2 books in this field. I have run several workshops and training courses on PBM in both academic and non-academic courses and have delivered several oral and poster presentations at international conferences.

Currently working as research fellow and laser specialist in St. George Hospital, University of New south wales, Sydney, Australia

SESSION SPEAKER