

Bedsore Revitalization By - Laser Therapy (Low Level Laser: LED-Ga-Al- As,660 nm) :



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Background:
In 1967 a few years after the first working laser was invented, Endre Mester in Semmelweis University Budapest, Hungary wanted to find out if laser might cause cancer. He took some mice, shaved the hair off their backs, divided them into two groups and gave a laser treatment with a low powered ruby laser to one group. They did not get cancer and to his surprise the hair on the treated group grew back more quickly than the untreated group. That was how "laser biostimulation" effects were discovered.
(Effect of laser on hair Growth of mice (in Hungarian). Mester, E. Szende, B. and Tota, J.G. (1967). Kiserl Orvostud 19. 628-631).

Purpose of the work:
The effects of pulsed monochromatic light, with fixed pulsations and wavelengths, on the healing of pressure ulcers were evaluated in this prospective, randomized, controlled study.

Method:
A placebo-controlled, double-blind study using low energy photon therapy (LLLT) was performed in ten patients with bedsore on the back. Treatment was given three times a week for 10 weeks, using monochromatic (red) optical sources; diode 660nm (GaAl-660). The patients who were randomized to placebo treatment received sham therapy from an identical-appearing light source from the same delivery system.

Results:
Ten patients with bedsore were randomized to receive LLLT or placebo therapy. At the conclusion of the study, the percentage of the initial ulcer area remaining unhealed in the LLLT and placebo groups was 24.4% and 84.7%, respectively (P = 0.0008). The decrease in ulcer area (compared to baseline) observed in the LLLT and placebo groups was 193.0 mm2 and 14.7 mm2, respectively (P = 0.0002). One patient dropped out of the study, complaining of lack of treatment efficacy; he was found to be randomized to the placebo group. There were no adverse effects.

Conclusions:
In this placebo-controlled, double-blind study LLLT was an effective modality for the treatment of bedsore which were resistant to conventional medical management.
The results are encouraging as pulsed monochromatic light increased healing rate and shortened healing time. This will positively affect the quality of life in elderly patients with pressure ulcers.

Keywords:
Bedsore Healing, Soft Tissue Healing, Decubitus Ulcer, Ulcer Healing, Wound Healing, Low Level Laser, Laser Therapy.

- Visualization of treatment Progress by LLLT (LED- Ga-Al- As 660 nm) of a patient- (Chronological Picture View of a Laser (LLLT) Treated Patient).




1st DAY, 24th OCTOBER/2009
Pretreatment photograph of wound showing irregular margins, Necrotic tissue and pus discharge.






F-1: At the end of 1st Week. F-2: At the end of 2nd week. F-3a: At the end of 3rd week. F-3b: At the end of 3rd week.






F-4: At the end of 4th week. F-5: At the end of 5th week. F-6: At the end of 6th week F-7: At the end of 7th week






F-8b: At 9th week F-10a: At 10th week. F-10b: At The End Of 10th Wk. F-10c: At The End Of 10th Wk

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Dr. Mohammad Nazrul Islam has completed his MBBS degree from Dhaka University, and later M.Sc.(BME) from Gono-biswabidyalaya, Dhaka, Bangladesh. His professional intern/training was done at Carnegie Hill Institute, New York, USA.

He is the foundinding head of Biomedical and Medical Biotechnology Department of Shaheed Suhrawardy Medical College and Hospital, Dhaka. He has published papers in reputed professional, national/international forum/ journals and continues academic/ research work at Shaheed Suhrawardy Medical College and Hospital since 2007.

Here is a brief description of his academic achievement and work placement over the past years.

Education:

- Bachelor of Medicine & Surgery, University of Dhaka-1989.
- M.Sc., Biomedical Engineering, Gono-Biswabidyalay, Dhaka, Bangladesh.

Work Placement:

- Sher-E-Bangla Medical College Hospital, 1990-91.
- Dhaka Shishu (Children) Hospital, Dhaka-1207, 1991-94.
- Dhaka Community Hospital, Dhaka, 1995-1996.
- Shaheed Suhrawardy Medical College and Hospital, Dhaka-1207, 1997-2005.
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