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Effect of exposure time of laser He-Ne 632.8 nm, 1 m/watt on wound healing process in rabbits

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Abstract

The objective of this work was to assess a compare grossly and microscopically, the effect of exposure time of He-Ne 632.8 nm. 1 m/watt
in wound healing in rabbits. For this purpose 15 adult male rabbits were used, divided into 3 groups, 5rabbits in each group. Xylazine 20 mg/kg and ketamine 10mg/kg used I/m to induce general anesthesia. Surgical open wound was made and immediately. The 1st,2nd and 3rd groups were exposure to 632.8 nm. 1 m/watts low level laser during 3,5 and 7minte. All the groups exposure was done on 1st, 3rd , 5th and 7th day. The spacemenst for histological studies taken on 3rd, 5th and 7th days and immediately kept in 10% buffer formaline for 24 hours. The result revealed that among three groups were the wound closed by fifth day under microscopic examination the slide show complete remodeling and natural skin layers of dermis, epidermis in comparison with groups first and 3rd. The 1st group shows fibroblast and collagen fibers fill the gap, while the third group shows mature normal structure at same stage.
Keywords: Laser ,injury, wound healing .

Introduction

Various researchers have studied the influence of chemicals (pharmacitical) agents alone or in combination with physiotherapy (irradiation) on the mechanism of wound healing in comparing with healing take place under natural condition but in recent decade the researchers interest has been dramatically increase in studying the influence of various type of laser rays like Helium-cadimum (He-Cd) 442, Argon (670nm) ,Helium-neon (He-Ne)(632.8nm) Krepton (670 nm) and Galium Alomenium Arsinic (GA ALAS) 780 nm and 830 nm on wound healing. However some of the researchers shows in their study the efficacy of photon on wound healing while others tried to elucidate the mechanism of regarding its effect so they emphasized mainly on He-Ne(632.8 nm) efficacy on wound healing which considered to be the best among all type of irradiation[1].

Historically the first use of laser therapy for biostimulation in 1967 by Endremester in semmelweis Budapest, Hungary. The high energy for healing has been used since earliest medical history, but it has gone out of favor in western medicine with of the exiting paradigm of more surgical and pharmacological basic, recently shift thinking has been emerging with an explosion of research, exploration and utilization of energy medicine modolatis [2]. After first work by Endre master the first demonstration of laser biostimulation done in 1967since then the medical treatment with coherent light sources (laser) has passed through its childhood and dolescence, currently low level laser (or light) therapy (LLLT) also known as, cold laser, soft laser, biostimulation or photobiomodulation which is practiced as part of physiotherapy in many part of the world [3].