عنوان مقاله:

A Comparative Study of ۶۶۰ nm Low-Level Laser and Light Emitted Diode in Proliferative Effects of Fibroblast Cells

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خلاصه مقاله:

Abstract Background: In recent years the use of low-power lasers has been widely used in medicine. With the introduction of affordable LED light, clinical application of LED light has become more and more popular. However, some researchers believe that because of the lack of coherence of the LED light, it can be different in biological effects in comparison to laser. In this study, we compared the biological effects of low level laser to those of LED light. Methods: Human skin fibroblast cell line Hu۰۲ was irradiated with low level laser and LED light with a wavelength of ۶۶۰ nm, power output of ۳۵ mW and in continuous mode and the control group was not irradiated. The biological effects were compared through the analyzing of cell proliferation, production of reactive oxygen species within the cell and the rate of cell division.Results: Our findings showed that production of reactive oxygen species within the cell was linearly increased both in the LED and laser light irradiated cells. However, laser light is more increment in comparison the LED light. The MTT results showed that laser light at low energy density (less than ۵ joules per square centimeter) was increased the rate of cell proliferation after ۲۴ hours. Although, the rate of cell division was increased in energy density of ۱ J/cm۲ compared to the control group, but this increasing was not statistically significant.Discussion: The findings indicated that the coherence properties of laser light provided more energy for the cells, and in a constant energy density, laser light created more oxidative stresses in compared with LED light. Keywords: Low level laser LED light Reactive oxygen species fibroblast cell

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا: