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Effect of low-level laser therapy on types I and III collagen and inflammatory cells in rats with induced third-degree burns.

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Author information

Abstract

Low-level laser therapy (LLLT) has been increasingly used to accelerate wound healing in third-degree **burns**. This study investigated the effects of **lasers** on the tissue repair process of third-degree **burns**. **Burns** were produced on the backs of male Wistar rats. The animals were divided into four groups (n = 12): control, injury, LLLT 3 J/cm(2), and LLLT 4 J/cm(2). Each group was further divided into two subgroups; the rats in one subgroup were killed on day 8 and those in the other, on day 16 after injury. The animals in LLLT 3 J/cm(2) and LLLT 4 J/cm(2) were irradiated 1 h after injury, and irradiation was repeated every 48 h. **Laser** (660 nm, 35 mW) treatment at fluences of 3 and 4 J/cm(2) were used. After killing the rats, tissue fragments from the burnt area were removed for histological analysis. The LLLT-treated groups showed a significant decrease (p <0.05) in the number of inflammatory cells and increased collagen deposition compared to the injury group. **Laser** irradiation (both 3 and 4 J/cm(2)) resulted in reduction in the inflammatory process and improved collagen deposition, thereby ameliorating the healing of third-degree **burns**.

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