Organic Chem Curr Res 2016, 5:3(Suppl)
http://dx.doi.org/10.4172/2161-0401.C1.014

The effect of low-level laser on healing of jaw fracture: An experimental study

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Aim: The current study was conducted in an attempt to accelerate the healing process and minimizing the period of fixation of jaw fractures using low level laser therapy in respect to rate of callus formation.

Material & Methods: This study was performed on twenty dogs, all of them were subjected to intentional fracture in their mandibles in both sides (right and left) and then were fixed using intra-osseous wiring , they were divided into 2 groups. Group I (3weeks groups) has received Low Level Laser Therapy (LLLT) to their left sides for the area of fractures post-surgery for 9 sessions while the right sides not subjected to laser and served as a control. Group II (6weeks group) has received Low Level Laser Therapy (LLLT) to their left sides for the area of fractures post-surgery for 15 sessions, while the right sides not subjected to laser and served as a control. The left sides were subjected to diode laser of 980nm wavelength for 2 minutes touching the outer surface of skin towards the fracture line.

Results: There was a significant increase in bone density in the laser sides (left sides) of both groups comparing with the control sides (right sides).

Conclusion: Low level laser therapy was proved to have the ability to assist and accelerate the healing process of jaw fractures. It has a bio-stimulatory effect on osteoblast-like cells after laser irradiation and so shortens the duration of fixation of fractured bone.

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Observers agreement in perception of non-cavitated approximal dental caries by CCD digital radiography at different exposure parameters

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Ionizing radiations used in dental practice can cause biologic damage due to somatic or genetic effects on the living system and reducing the dose delivered to the patient should always be a concern for the practitioner. Therefore, implementation of dose indicators and dose monitoring is mandatory for dental radiography. Moreover, proper selection of exposure parameters to avoid re-exposure to patients due to poor image quality should always be taken in consideration. The use of digital systems in dentistry yielded the way for dose reduction and provided flexibility and ease of use permitting the production of adequate images optimized for each diagnostic task. Radiographic detection of early proximal caries is one of the most difficult tasks in dental radiographic diagnosis; it is very technique-sensitive and needs adequate exposure parameters such as identifying and survey parameters that allow the detection of artificial lesions or the semi-quantitative assessment of subjective image impression, as a surrogate for image quality and relate these parameters to a reference of dose. Then, accuracy of CCD systems in early detection of proximal caries in regard to the required radiation dose is determined.

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