

عنوان مقاله:

A Guinea Pig Model of Acute Skin Injury Using Mega Voltage Radiotherapy

محل انتشار:

سومین کنگره بین المللی و پنجمین کنگره ملی زخم و ترمیم بافت (سال: 1397)

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خلاصه مقاله:

Background: The most complication of radiotherapy is the skin radiation injury. To study this issue and create modalities for intervention and due to lack of experimental models, Has been suggested a novel model of acute Skin radiation injury. Methods: On this study female guniea pig with an average weight 250 gr were used. They were distributed in two groups. The control group did not receive radiation. Guinea pigs were exposed to a single fraction of X-ray irradiation of 20, 30, 50, 60, 80 Gy to a 3.0×3.0 cm area with 1.3 cm bolus on 100 cm SSD in dorsal and abdominal skin. The skin was isolated using a low_pressure clamp and irradiated. Guniea pig was followed for 4 weeks with serial Photographic analysis and sonographic evaluation of the irradiated areas. skin changes were measured using clinical assessments defined by the Kumar scale. Tensiometry was performed and was obtained Young's modulus. Results: Loss of dermal integrity was shown after a single dose of Mega Voltage X-ray radiation above 30 Gy. At 20 and 30 Gy healing was observed after the peak injury. At dose of 60 Gy and higher, ulceration and full thickness dermal injury was observed starting around day 14 and did not heal in abdominal skin. Changes in the skin were time- and radiation dose-dependent. Fullthickness injury occurred without animal mortality or gross changes in the underlying organs. Conclusion: The guinea pig is a small animal model for the short-term screening of acute skin radiation injury. This technique can be used to study radiation _induced injury and suggested to evaluat .skin wound healing, cell therapy and transplant for these clinical issues

کلمات کلیدی:

Radiation Skin Injury, Guinea Pig Model, Megavoltage Radiotherapy

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