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Effects of Melatonin on Primary Oral Wound Healing in Rats

ABSTRACT:

This study aimed to investigate the effects of melatonin on primary wound healing of the oral mucosa in rats. Thirty healthy male albino rats were used in this study, almost at the same weight, age, and circumstance. All animals were submitted to operation in the buccal mucosal region. Each animal was given a mixture of xylazine and Ketamine hydrochloride Intraperitoneal (I.P.). After about 5 minutes, anesthetic integrity was checked by testing rats' reflexes. After complete anesthesia, each animal was laid down on the dorsal recumbency, via intraoral approach, a full-thickness soft tissue incision 0.5cm length in the right buccal mucosa. The incision was closed by a single simple interrupted stitch using a 5/0 silk suture to heal by primary intention. The animals were randomly divided into two main groups: control group (n=15) and melatonin (n=15) group, which receives melatonin (10 mg/kg/daily) solution orally, then each main group were subdivided into three subgroups (each group 5 rats) according to the time of sacrifice 3rd, 7th and 9th days after surgery respectively. Biopsies were taken from the site of operation and examined by three histopathologists. The statistical analysis showed significant differences in the inflammatory response between the melatonin-treated and control group at all periods of healing. There were significant differences in granulation tissue formation between the melatonin-treated and control groups at the 7th and 9th day healing times. Also, a significant difference existed in reepithelialization between the melatonin-treated and control groups at the 9th day periods of healing. This study concluded that the melatonin appeared good healing accelerator of oral soft tissue healing in rats