



The Impact of Oral Administration of Systemic Probiotics “*Lactobacillus rhamnosus*” on IL-1 β and IL-10 Levels and Wound Healing of Oral Mucosa in Rabbits



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Abstract

THE LACK of effective treatment for oral wounds has motivated researchers to explore alternative treatments to improve intraoral wound healing. **Aims:** This study investigates the beneficial role of probiotics *Lactobacillus rhamnosus* in oral wounds. **Material and Method:** Twenty-five rabbits were included and categorized into three groups; The control negative group (five rabbits) who had no surgery and no treatment. The control positive group (ten rabbits), was subdivided equally into two subgroups (a and b) they had an incision of 1cm in their buccal mucosa but had not received any treatment. The third group (ten rabbits), the treatment group, was also subdivided into (a and b) and received probiotic drops of *Lactobacillus rhamnosus* to be swallowed once daily starting from day 1 till the day of euthanizing. The rabbits from group I and subgroups IIa and IIIa were sacrificed on the third day. All rabbits of subgroups IIb and IIIb were euthanized on the seventh day. Serum samples were collected and their mucosal tissue at wound sites was removed for histological analysis. **Results:** The serum levels of proinflammatory Interleukin-1 β and anti-inflammatory Interleukin-10 in the third-day groups presented a significant difference, while in the seventh-day groups, the results of the treated group showed a higher level of IL-10 than IL-1 β indicating less inflammation. In microscopic inspection, the untreated group revealed more inflammatory signs on day 3 than the treated group. On day 7, the treated group presented very good signs of healing as compared to the control-positive group. **Conclusion:** Systemic probiotic *Lactobacillus rhamnosus* enhances the wound healing of oral mucosa.