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Histological assessment of the effect of ginger on the healing of chemically-induced aphthous ulceration in rabbits

ABSTRACT:

Background: An aphthous ulcer is a painful and recurrent oral mucosal inflammation that is retractable to treatments and resistant to healing. Conventional treatments include a variety of antiseptic, anti-inflammatory, and analgesic therapies, yet their efficacy remains inconsistent. *Aim:* The present study was conducted in order to evaluate the effects of ginger powder on the healing of chemically-induced aphthous ulcers in rabbits. *Methodology:* Twelve healthy rabbits were divided into control and ginger-treatment groups. Aphthous ulcers were induced in both groups. The treatment group received ginger powder topically in the socket every 24 h, for 7 days. Subsequently, all animals were sacrificed, and specimens were collected for macroscopic and histological examination. *Results:* Histological analysis of the ulcer sites on days 3 and 7 post-induction revealed that ginger-treated ulcers exhibited enhanced healing, as evidenced by increased collagen deposition, fibroblast proliferation, and re-epithelialization. Macroscopic observations also confirmed a faster regression of necrotic tissue and a reduced ulcer size in the ginger-treated group (as compared to the control group). Histological analysis has indicated significant differences in inflammation and blood vessel congestion between the two groups, particularly on day 7. *Conclusion:* The findings of this study reveal that locally applied ginger can enhance the healing in chemically-induced aphthous ulcers in rabbits, which may support its use in clinical practice.