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The effect of Salvadora persica ethanolic extract on oral tissue healing in rats: An in vivo study
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Abstract
Introduction: Invasive surgical procedures in the oral cavity inevitably cause trauma to the soft and hard tissues. The healing process in the oral cavity tissue occurs in a complex manner involving different types of cells, maturation process, and the time of healing. Salvadora persica (miswak) has been found to exert various positive effects on the oral cavity, including antimicrobial, anti-gingivitis, anti-cariogenic, gingival healing, and teeth whitening properties. This study aims to investigate the potential of miswak as an adjunctive therapy in promoting wound healing. Materials and methods: 30 live Sprague-Dawley rats were used in this study. The rats' mandibular first molar tooth was extracted, and an incision wound was made on the tongue. The extraction socket and incision wound were irrigated using normal saline and different concentrations of locally processed miswak plant extracts (0.05%, 10%, and 20%) for 7 days. The rats were sacrificed for gross examination of the tooth socket and tongue healing. Both soft tissue and alveolar bone were examined microscopically. Results: Complete closure of the incision wound was observed on all rats' tongues; miswak groups showed better wound healing than control and placebo groups in the oral mucosa overlying the alveolar bones. 0.05% and 20% miswak extracts showed prominent wound healing effects in the sagittal sections of the tongue, with moderate formation of connective tissue under the wound site and notable wound contraction. The 20% miswak extract group showed the highest percentage of healed oral mucosa on the alveolar bone and higher bone deposition at the alveolar base. Conclusion: A concentration of 20% miswak extract enhances the initial phase of wound healing both in oral soft and hard tissues. Miswak extract at this concentration was not toxic to the tissues and had potential therapeutic effects in oral tissue healing. © 2023 King Saud University

Author Keywords
Extraction; Miswak; Salvadora persica; Wound healing

Index Keywords
ketamine, plant extract, Salvadora persica extract, unclassified drug, wound healing promoting agent, xylazine; alveolar bone, animal experiment, animal model, animal tissue, Article, connective tissue, controlled study, histopathology, in vivo study, incision, mandibular first molar, mouth tissue, nonhuman, rat, Salvadora persica, soft tissue, soft tissue injury, tongue, tooth extraction, tooth socket, wound contraction, wound healing

Chemicals/CAS
ketamine, 1867-66-9, 6740-88-1, 81771-21-3; xylazine, 23076-35-9, 7361-61-7

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