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RESEARCH ARTICLE

Effectiveness of Sage Leaf Gel on Neutrophil Count in Wound Healing

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Abstract

A wound involves damage to the epithelial layer of the skin, extending to the subcutis and surrounding tissues. The body initiates a healing process starting with inflammation. Neutrophils play a crucial role in this phase; excessive neutrophils can cause tissue necrosis, while insufficient neutrophils may lead to infection. Neutrophils are essential for bacterial eradication during inflammation. Sage leaf extract, known for its anti-inflammatory, antioxidant, and antibacterial properties, may aid in wound healing. This study evaluates the effectiveness of 5% sage leaf extract gel on neutrophil count during the wound healing process in Wistar rats. This study was conducted in several Universitas Jenderal Achmad Yani Cimahi laboratories from 29 May 2023 to 23 February 2024. A post-test-only control group design was used with 25 samples divided into five groups: (K-1) no treatment, tissue sampled at 13 minutes; (K-2) no treatment, tissue sampled at 103 minutes; (KN) healthy/normal control; (KP1) 5% sage leaf extract gel, tissue sampled at 13 minutes; (KP2) 5% sage leaf extract gel, tissue sampled at 103 minutes. Data analysis was performed using the Kruskal-Wallis test followed by the Mann-Whitney post hoc test ($p \leq 0.05$), indicating a statistically significant difference. The highest mean neutrophil count was observed in the KP2 group, which received 5% sage leaf extract gel and had tissue sampled at 103 minutes. The study concludes that a 5% sage leaf extract gel is effective in increasing neutrophil counts during the healing of punch wounds in Wistar rats, which contributes to accelerated wound healing.

Keywords: Neutrophil, sage, wound healing

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