

Wound healing induces VEGF expression stimulated by forest honey in palatoplasty Sprague Dawley

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Abstract	<p>Background: Cleft palate is a craniofacial disorder with definitive therapy using the V-Y pushback technique palatoplasty, which has the impact of leaving the bone exposed on the palate with long wound healing and a high risk of infection. Forest honey has high antioxidants and the ability to accelerate wound healing. Purpose: This study aims to determine the effect of forest honey on vascular endothelial growth factor (VEGF) expression to accelerate the wound healing process after palatoplasty biopsy. Methods: Posttest only control group design using Sprague Dawley palatoplasty was performed on 15 rats which were divided into three groups, namely the honey treatment (KP), Aloclair as a positive control (KPP), and aquadest as a negative control (KKN). As much as 25 mg of honey was given therapeutically, and VEGF expression analysis post-biopsy palatoplasty was measured using the ELISA test. ANOVA analysis was carried out to determine the significant differences between each treatment, and in silico analysis was conducted to determine the compounds' role in honey on the mechanism of VEGF expression. Results: Statistical analysis of VEGF expression in the KP group was 41.10 ng/ml \pm 0.26, the KKP was 39.57 \pm 0.27, while the KKN was 33.26 \pm 0.62 ($p < 0.01$). In silico study, genistein (C₁₅H₁₀O₅) targets several signaling pathways such as PI3K-Akt, AMPK, and mTOR, affecting accelerated proliferation and angiogenesis. Conclusion: In wound healing acceleration, forest honey induced VEGF expression through the genistein mechanism of angiogenesis and cell proliferation.</p>
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