Comparative Evaluation of Gum Rosin-Based Ointment and Betamethasone-Salicylic Acid in Treating Imiquimod-Induced Psoriasis in Rabbits

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Psoriasis is a chronic immune-mediated inflammatory disorder affecting over 125 million individuals worldwide, characterized by keratinocyte hyperproliferation and dysregulated inflammatory pathways. The existing treatments, such as corticosteroids and biologics, are associated with systemic immunosuppression and skin atrophy. This study introduces Rosiderm Ointment, a novel formulation containing gum rosin, a natural resin predominantly composed of abietic acid with distinct bioactive properties. Prior studies demonstrated that abietic acid, dehydroabietic acid, and some resin acids possess anti-inflammatory, antiproliferative, and immunomodulatory effects via PPAR? activation, NF-?B modulation and cytokine regulation. The formulation combines gum rosin with salicylic acid (keratolytic agent), glycerol (humectant), and olive oil (Antioxidant and penetration enhancer). The efficacy of Rosiderm was comparatively evaluated in an Imiquimod-induced psoriasis in rabbits, by employing clinical assessments (PASI score, erythema, Scaling), histological analysis (H&E staining, Ki-67, CD3+ IHC), and statistical analysis. Through the experiment, Rosiderm achieved 88.24% efficacy, while the standard treatment, Diprosalic (betamethasone dipropionate and salicylic acid ointment), achieved 48.02%. Rosiderm accelerated the process by 184% ($p < 0.0001$, Cohen's $d = 0.83668$). Notably, psoriasis symptoms reappeared in the Diprosalic-treated group after one month, whereas no symptoms were observed in the Rosiderm-treated group. Toxicological assessment confirmed the ointment safety with dermal LD50 >10 000 mg/kg bw in rabbits. Rosiderm Ointment offers a more effective, cheaper and non-steroidal psoriasis treatment by harnessing gum rosin's properties to restore epidermal homeostasis.

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