PSORIASIS

PAEONIFLORIN SUPPRESSES INFLAMMATORY RESPONSE IN IMIQUIMOD-INDUCED PSORIASIS-LIKE MICE AND PERIPHERAL BLOOD MONONUCLEAR CELLS (PBMCS) FROM PSORIASIS PATIENTS

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Introduction: Paeoniflorin (PF), the principal component of total glucosides of paeony (TGP), displays anti-inflammatory and anti-oxidant properties in several animal models.

Objective: In this study we investigated the anti-inflammatory effects and mechanisms of PF in imiquimod (IMQ)-induced psoriasis like mouse model.

Materials and Methods: BALB/c mice were randomly divided into four groups: Vaseline group, IMQ group, IMQ + PF 50mg/kg group and IMQ + PF 100mg/kg group. A daily topical dose of 5% IMQ cream or control Vaseline (Vaseline group) was applied to the shaved back skin of the mice for 7 consecutive days. The skin samples of mice were fixed with formalin and embedded in paraffin. Sections were stained by hematoxylin and eosin and immunohistochemistry using antibody against CD3, CD11c and myeloperoxidase (MPO). The effects of PF on inflammatory cytokines expression in peripheral blood mononuclear cells (PBMCs) from patients with psoriasis vulgaris were also observed. The mRNA levels of IL-17, INF-γ, IL-6 and TNF-α from mice skin samples and PBMCs were measured by real-time quantitative PCR.

Results: Our results indicated that PF effectively attenuated the clinical and histopathologic changes in IMQ-induced psoriasis like mouse model. Furthermore, PF reduced the infiltration of T cells, CD11c+DCs and neutrophils in lesional skin. In addition, PF also significantly decreased the mRNA expression of inflammatory cytokines, such as IL-17, IFN-γ, IL-6 and TNF-α in IMQ-induced psoriasis like mouse model and PBMCs from patients with psoriasis vulgaris.

Conclusions: our data suggests that PF can inhibit leukocytes infiltration and decrease the expression of inflammatory cytokines such as IL-17, INF-γ, IL-6 and TNF-α. PF might be a candidate drug for the treatment of psoriasis.