

ACNE, ROSACEA, AND RELATED DISORDERS (INCLUDING HIDRADENITIS SUPPURATIVA)

EFFECTS OF GLYCERYL-OCTYL-ASCORBIC ACID (GOVC) ON MELANIN AND TYROSINASE, AND THE CLINICAL EFFICACY OF GOVC AND ASCORBYL-PHOSPHATE PALMITATES, AND TOCOPHERYL PHOSPHATE FOR PIH AND PIE IN ACNE VULGARIS

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Introduction: Ascorbyl phosphate (AP) has been used as the treatment for PIH in acne. Although amphiphilic APs such as APP have been developed, their oxidative-degradation vulnerabilities remain as an issue. Glyceryl-octyl-ascorbic acid (GOVC) is able to solve APP's oxidative-degradation vulnerabilities by its sustainable anti-oxidative ability and enhance APP's effects on pigmentation.

Objective: To elucidate the suppressive mechanism of PIH of GOVC, this study was performed to clarify the effect of GOVC/APP/TP-complex treatment.

Materials and Methods: After human dermal fibroblasts were cultured with GOVC, the proliferation of cells was measured, and the amount of collagen type I was also measured by a quantitative-enzyme-linked-immunosorbent assay. After B16 melanoma cells were incubated with GOVC and AP, the melanogenesis-suppressing abilities of GOVC and AP were measured. The tyrosinase suppressing activities of GOVC and AP were obtained by measuring the produced amount of DOPA in B16 melanoma cells. The amounts of TRP-1 protein and tyrosinase were quantified by Western-blotting, and the expressed amount of mRNA for tyrosinase was also measured. The amount of mRNA for myosin-Va, a melanosome-transporting protein, was also measured. Clinical trial of a lotion sample containing 0.05% GOVC, 1% APP, and 2%TP was applied to PIH in acne patients twice a day for 3 months.

Results: GOVC allowed fibroblasts to proliferate dose dependently, and increased the production of collagen type I. GOVC significantly reduced the amount of melanin in B16 melanoma cells, and decreased tyrosinase activity, the amounts of tyrosinase, TRP-1 protein, and the expression of mRNA for tyrosinase. GOVC inhibited the activity of myosin-



Va. Lotion containing GOVC, APP and TP enabled to improve PIH in acne patients without any adverse effects.

Conclusion: The effect of GOVC on pigmentation was speculated to be enhanced by suppressing both tyrosinase production and melanosome-transporting protein. GOVC/APP/TP-complex treatment was available for PIH in acne.

