

MEDLINE Abstract

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BACKGROUND: Polymorphous light eruption (PLE) is the most common photodermatosis. While its etiology still remains elusive, pathogenesis seems to involve UVA-induced oxidative stress and subsequent deregulation of antioxidative immune responses. Only few and often ineffective prophylactic and therapeutic measures exist to date. **METHODS:** In our randomized, double-blind, placebo-controlled clinical study, we compared the efficacy of a new topical formulation, consisting of 0.25%alpha-glucosylrutin (AGR) (a natural, modified flavonoid), 1% tocopheryl acetate (vitamin E) and a broad-spectrum, highly UVA-protective sunscreen (SPF 15) in a hydrodispersion gel vehicle, to a sunscreen-only gel and vehicle. Thirty patients with a history of PLE were pretreated with either the above formulation, a similar preparation (with the same concentration for vitamin E and AGR, but a different UV filter system), placebo or a SPF 15 sunscreen-only gel, 30 min prior to daily photoprovocation with UVA irradiations of 60-100 J/cm(2) to 5 x 5 cm(2) areas on the upper arms. **RESULTS:** After 4 days, results revealed a statistically highly significant difference (P<0.001) between the antioxidant containing formulations and placebo, and sunscreen-only formulation, respectively, in experimentally eliciting PLE. While only one patient developed clinical signs of PLE with accompanying itch in the area treated with the new antioxidant UV-protective gel formulation, 62.1% of the placebo-treated areas and 41.3% of the sunscreen-only treated areas showed mild to moderate signs of PLE. **CONCLUSION:** Combining a potent antioxidant with a broad-spectrum, highly UVA-protective sunscreen is far more effective in preventing PLE than sunscreen alone or placebo and should thus be employed as the prophylaxis of choice for PLE.

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