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Aloe vera juice-related photodermatitis: the importance of avoiding sun exposure after applying Aloe vera

Jen-Yu Hsu, Ming-Ling Wu, Chen-Chang Yang.

Division of Clinical Toxicology & Occupational Medicine, Taipei Veterans General Hospital, Taipei, Taiwan

Introduction: The *Aloe vera* plant has been used for centuries for its health, beauty, medicinal and skin care properties. Most people use it topically as a remedy for skin conditions, including the treatment of dermatitis, burn, sunburn, anti-wrinkles and skin-whitening. However, it may cause skin irritation, allergy, or phototoxicity in sensitive individuals.

Case Report: A 61-year-old woman with a history of hyperthyroidism and no known history of drug allergy was observed to have progressive pigmentation in her face, neck and scalp in the last two months. She had received management from dermatology, allergy-immunology-rheumatology clinics. However, the disease progressed and she attended our clinical toxicology clinic for assessing the possibility of poisoning. Detailed history noted that she experienced mild sunburn after excessive sun exposure and began to apply homemade and commercially available *Aloe vera* juice to the sunburn area, hoping to ease skin itching and burning sensation. She also took a Chinese herbal decoction for treatment of sunburn for one month. Her skin itching did improve, but the color of her face and neck became darker progressively. There were also some skin pimples on her upper limbs. From history taking and physical examination, tentative diagnosis was *Aloe vera*-related photodermatitis. We reassured the patient, strongly discouraged continued use of *Aloe vera* products and prescribed topical steroids for symptom relief. Laboratory studies conducted for suspicion of poisoning or allergy were all normal except for slightly higher blood IgE, 173.1 IU/mL (reference range <100 IU/mL). The skin papules gradually improved and did not recur during one month of follow-up. Her skin pigmentation also gradually diminished within a few months.

Conclusions: Amino acids, organic acids and related compounds in *Aloe vera* are considered to inhibit tyrosinase activity and melanin formation which can gradually eliminate pigmentation of the skin. However, photoactive substances in *Aloe vera* such as emodin may cause hyperpigmentation when exposed to sunlight after application of *Aloe vera*. Topical application of *Aloe vera* in sunlight exposed skin therefore should be used cautiously.

References:

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