



CONTACT DERMATITIS AND OCCUPATIONAL DERMATOSES

ASTAXANTHIN EFFECT ON THE ELICITATION OF ALLERGIC CONTACT DERMATITIS TO HAIR DYE CONTAINING P-PHENYLENEDIAMINE

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Introduction. Hair dyes containing p-phenylenediamine constitute a significant cause of allergic contact dermatitis. Application of antioxidant substances, such as astaxanthin, which possesses a potent antioxidant activity, as pretreatment, could reduce allergic reactions.

Objectives. We compared the results of skin reactions to p-phenylenediamine in sensitized subjects when treated with astaxanthin and placebo.

Methods. Thirteen subjects with contact allergy to p-phenylenediamine, who had a history of skin reactions to hair dye and a positive patch test to p-phenylenediamine were tested. Skin areas on the upper back were exposed to an emulsion with astaxanthin and an emulsion without astaxanthin, and then to 1% p-phenylenediamine. Skin reactions were interpreted on D2, D3, and D7.

Results. On D2, pretreatment with astaxanthin emulsion resulted in a reaction in 7 out of 12 patients ($p = 0.025$); this result was statistically significant. On D7, pretreatment of skin sites with astaxanthin reduced the cutaneous allergic reaction to p-phenylenediamine in 6 out of 12 patients ($p = 0.046$) as compared with untreated skin. There were no serious adverse effects with patch testing.

Conclusions. Astaxanthin emulsion pretreatment could reduce reactions to p-phenylenediamine in sensitized subjects.

