Abstract

Clinical and biochemical effects of coenzyme Q₁₀, vitamin E, and selenium supplementation to psoriasis patients

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OBJECTIVE: The aim of the present study was to evaluate clinical effects of supplementation with antioxidants to patients with severe erythrodermic (EP) and arthropathic (PsA) forms of psoriasis.

METHODS: Fifty-eight patients were hospitalized, treated by conventional protocols, and randomly assigned to four groups. Groups EP1 and PsA1 were supplemented with coenzyme Q₁₀ (ubiquinone acetate, 50 mg/d), vitamin E (natural α-tocopherol, 50 mg/d), and selenium (aspartate salt, 48 μg/d) dissolved in soy lecithin for 30–35 d. Groups EP2 and PsA2 (placebo) received soy lecithin. Clinical conditions were assessed by severity parameters. Markers of oxidative stress included superoxide production, copper/zinc-superoxide dismutase, and catalase activities in the circulating granulocytes, in the affected epidermis, and plasma levels of nitrites/nitrates.

RESULTS: At baseline patients had an increased superoxide release from granulocytes (10.0 ± 0.5, 2.9 ± 0.2, and 1.5 ± 0.1 nmol/L per 10⁶ cells/h for EP, PsA, and donors, respectively), increased copper/zinc-superoxide dismutase and catalase activities in granulocytes in EP patients and decreased in PsA patients, decreased activity of copper/zinc-superoxide dismutase (0.3 ± 0.0, 1.8 ± 0.1, and 2.2 ± 0.2 U/mg protein for EP, PsA, and donors, respectively), and altered activity of catalase in psoriatic epidermis. Plasma levels of nitrites/nitrates were greater than normal in psoriatic patients. Supplementation resulted in significant improvement of clinical conditions, which corresponded to the faster versus placebo normalization of the oxidative stress markers.

CONCLUSION: Supplementation with antioxidants coenzyme Q₁₀, vitamin E, and selenium could be feasible for the management of patients with severe forms of psoriasis.