

# Abstract

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## Clinical and biochemical effects of coenzyme Q<sub>10</sub>, 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 Q<sub>10</sub> (ubiquinone acetate, 50 mg/d), vitamin E (natural  $\alpha$ -tocopherol, 50 mg/d), and selenium (aspartate salt, 48  $\mu$ g/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 ( $10.0 \pm 0.5$ ,  $2.9 \pm 0.2$ , and  $1.5 \pm 0.1$  nmol/L per  $10^6$  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 ( $0.3 \pm 0.0$ ,  $1.8 \pm 0.1$ , and  $2.2 \pm 0.2$  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 Q<sub>10</sub>, vitamin E, and selenium could be feasible for the management of patients with severe forms of psoriasis.**