

Abstract

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Complementary therapy in diabetic patients with chronic complications: a pilot study.

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BACKGROUND: Oxidative stress and dysregulation of antioxidant function play a pivotal role in the diabetic complications.

METHODS: Fifty-nine patients with diabetes were randomly assigned into three groups. 1) PL group (n = 19): Polarized light (PL) was applied to neuropathic ulcers of diabetic foot twice daily for ten minutes in pulse regimen during three months. 2) QALA group (n = 20): Antioxidants (60 mg hydrosoluble CoQ10, 100 mg alpha-lipoic acid (ALA) and 200 mg vitamin E) were used in two daily doses for three months. 3) QALAPL group (n = 20): Patients used antioxidants along with PL applications. To test for differences in means, paired Student's t-test (before and after three months) was used.

RESULTS: Three months application of PL significantly increased plasma concentrations of coenzyme Q10, alpha-tocopherol, tau-tocopherol and beta-carotene, and decreased lactate dehydrogenase (LDH) activity. Supplementation with antioxidants decreased plasma lipid peroxides, increased concentration of CoQ10 and improved echocardiographic parameters. Simultaneous application of PL and antioxidants significantly stimulated plasma CoQ10 and alpha-tocopherol concentrations, decreased LDH activity and contributed to improvement in heart left ventricular function in diabetics.

CONCLUSION: Thus the data show that supportive therapy with PL along with the antioxidants hydrosoluble CoQ10, alpha-lipoic acid and vitamin E is an effective way of controlling the complications of type 2 diabetes (Tab. 7, Fig. 2, Ref. 44).

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