

Oxidative-inflammatory damage in cirrhosis: Effect of vitamin E and a fermented papaya preparation

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Background and Aim: Oxidative DNA damage occurs as an early event in hepatitis C virus (HCV) infection and is an indication of the potential for carcinogenesis. The aim of this study was to test a novel antioxidant/immunomodulator in patients with HCV-related cirrhosis.

Methods: The study group consisted of 50 patients with HCV-related cirrhosis with transaminase values less than twofold increased (alanine aminotransferase [ALT] < 80 IU/L). Patients underwent a standardized food-vitamin composition assessment and were assessed for dietary intake, nutritional status and iron level. Patients were randomly allocated into two groups and then given either α -tocopherol 900 IU/day or 9 g/day of a fermented papaya preparation (FPP, Immun-Age, Osato Research Institute, Gifu, Japan) at bedtime for 6 months. Ten healthy subjects served as controls. Patients were checked monthly for: routine tests, redox status (reduced glutathione, glutathione peroxidase, oxidized glutathione, malondialdehyde), plasma α -tocopherol, 8-hydroxy-deoxy-guanidine (8-OHdG) level in circulating leukocyte DNA and serum levels of cytokines.

Results: Patients with cirrhosis showed a significant imbalance of redox status (low antioxidants/high oxidative stress markers) ($P < 0.005$ vs controls). Neither treatment regimen affected transaminases as a whole. However, vitamin E supplementation almost normalized ALT only in the limited vitamin-E-deficient subgroup. A significant improvement of redox status was obtained by both regimens. However, only FPP significantly decreased 8-OHdG and the improvement of cytokine balance with FPP was significantly better than with vitamin E treatment ($P < 0.05$).

Conclusions: Although the present data seem to suggest a potential supportive role of antioxidants/immunomodulators as FPP in HCV patients, more studies are needed to substantiate their effect on the natural history of the disease.

Keywords: antioxidants, cytokines, fermented papaya preparation, liver cirrhosis, oxidative stress

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