Effect of Curcumin Supplementation During Radiotherapy on Oxidative Status of Patients with Prostate Cancer: A Double Blinded, Randomized, Placebo-Controlled Study.

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Abstract
Curcumin is an antioxidant agent with both radiosensitizing and radioprotective properties. The aim of the present study was to evaluate the effect of curcumin supplementation on oxidative status of patients with prostate cancer who undergo radiotherapy. Forty patients treated with radiotherapy for prostate cancer were randomized to the curcumin (CG, n = 20) or placebo group (PG, n = 20). They received curcumin (total 3 g/day) or placebo during external-beam radiation therapy of up to 74 Gy. Plasma total antioxidant capacity (TAC) and activity of superoxide dismutase (SOD), catalase, and glutathione peroxidase (GPx) were measured at baseline and 3 mo after radiotherapy completion. Analysis of covariance was used to compare the variables between groups following the intervention. Serum PSA levels and MRI/MRS images were investigated. In CG, TAC significantly increased (P < 0.001) and the activity of SOD decreased (P = 0.018) after radiotherapy compared with those at baseline. In CG, however, the activity of SOD had a significant reduction (P = 0.026) and TAC had a significant increase (P = 0.014) compared with those in PG. PSA levels were reduced to below 0.2 ng/ml in both groups, 3 mo after treatment, however, no significant differences were observed between the 2 groups regarding treatment outcomes.

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