Epidemiology

Total antioxidant intake in relation to prostate cancer incidence in the Health Professionals Follow-Up Study

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Epidemiologic evidence on the association of antioxidant intake and prostate cancer incidence is inconsistent. Total antioxidant intake and prostate cancer incidence have not previously been examined. Using the ferric-reducing antioxidant potential (FRAP) assay, the total antioxidant content (TAC) of diet and supplements was assessed in relation to prostate cancer incidence. A prospective cohort of 47,896 men aged 40–75 years was followed from 1986 to 2008 for prostate cancer incidence ($N = 5,656$), and they completed food frequency questionnaires (FFQs) every 4 years. A FRAP value was assigned to each item in the FFQ, and for each individual, TAC scores for diet, supplements and both (total) were calculated. Major contributors of TAC intake at baseline were coffee (28%), fruit and vegetables (23%) and dietary supplements (23%). In multivariate analyses for dietary TAC a weak inverse association was observed [highest versus lowest quintiles: 0.91 (0.83–1.00, $p$-trend = 0.03) for total prostate cancer and 0.81 (0.64–1.01, $p$-trend = 0.04) for advanced prostate cancer]; this association was mainly due to coffee. No association of total TAC on prostate cancer incidence was observed. A positive association with lethal and advanced prostate cancers was observed in the highest quintile of supplemental TAC intake: 1.28 (0.98–1.65, $p$-trend < 0.01) and 1.15 (0.92–1.43, $p$-trend = 0.04). The weak association between dietary antioxidant intake and reduced prostate cancer incidence may be related to specific antioxidants in coffee, to nonantioxidant coffee compounds or other effects of drinking coffee. The indication of increased risk for lethal and advanced prostate cancers with high TAC intake from supplements warrants further investigation.
Total antioxidant intake in relation to prostate cancer incidence in the He...