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Dietary intake of vitamin K and risk of prostate cancer in the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Heidelberg).

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Abstract

BACKGROUND: Anticarcinogenic activities of vitamin K have been observed in various cancer cell lines, including prostate cancer cells. Epidemiologic studies linking dietary intake of vitamin K with the development of prostate cancer have not yet been conducted.

OBJECTIVE: We evaluated the association between dietary intake of phylloquinone (vitamin K1) and menaquinones (vitamin K2) and total and advanced prostate cancer in the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition.

DESIGN: At baseline, habitual dietary intake was assessed by means of a food-frequency questionnaire. Dietary intake of phylloquinone and menaquinones (MK-4-14) was estimated by using previously published HPLC-based food-content data. Multivariate-adjusted relative risks of total and advanced prostate cancer in relation to intakes of phylloquinone and menaquinones were calculated in 11 319 men by means of Cox proportional hazards regression.

RESULTS: During a mean follow-up time of 8.6 y, 268 incident cases of prostate cancer, including 113 advanced cases, were identified. We observed a nonsignificant inverse association between total prostate cancer and total menaquinone intake [multivariate relative risk (highest compared with lowest quartile): 0.65; 95% CI: 0.39, 1.06]. The association was stronger for advanced prostate cancer (0.37; 0.16, 0.88; P for trend = 0.03). Menaquinones from dairy products had a stronger inverse association with advanced prostate cancer than did menaquinones from meat. Phylloquinone intake was unrelated to prostate cancer incidence (1.02; 0.70, 1.48).

CONCLUSIONS: Our results suggest an inverse association between the intake of menaquinones, but not that of phylloquinone, and prostate cancer. Further studies of dietary vitamin K and prostate cancer are warranted.

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