

Abstract

Am J Clin Nutr. 2010 Mar 24. [Epub ahead of print]

Dietary vitamin K intake in relation to cancer incidence and mortality: results from the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition (EPIC-Heidelberg).

Nimptsch K, Rohrmann S, Kaaks R, Linseisen J.

Division of Cancer Epidemiology German Cancer Research Center Heidelberg Germany.

BACKGROUND: Anticarcinogenic activities of vitamin K have been observed in animal and cell studies.

OBJECTIVE: On the basis of the growth inhibitory effects of vitamin K as observed in a variety of cancer cell lines, we hypothesized that dietary intake of phylloquinone (vitamin K(1)) and menaquinones (vitamin K(2)) may be associated with overall cancer incidence and mortality.

DESIGN: In the prospective EPIC-Heidelberg (European Prospective Investigation into Cancer and Nutrition-Heidelberg) cohort study, 24,340 participants aged 35-64 y and free of cancer at enrollment (1994-1998) were actively followed up for cancer incidence and mortality through 2008. Dietary vitamin K intake was estimated from food-frequency questionnaires completed at baseline by using HPLC-based food-composition data. Multivariate-adjusted hazard ratios (HRs) and 95% CIs were estimated by using Cox proportional hazards models.

RESULTS: During a median follow-up time of >10 y, 1755 incident cancer cases occurred, of which 458 were fatal. Dietary intake of menaquinones was nonsignificantly inversely associated with overall cancer incidence (HR for the highest compared with the lowest quartile: 0.86; 95% CI: 0.73, 1.01; P for trend = 0.08), and the association was stronger for cancer mortality (HR: 0.72; 95% CI: 0.53, 0.98; P for trend = 0.03). Cancer risk reduction with increasing intake of menaquinones was more pronounced in men than in women, mainly driven by significant inverse associations with prostate (P for trend = 0.03) and lung cancer (P for trend = 0.002). We found no association with phylloquinone intake.

CONCLUSION: These findings suggest that dietary intake of menaquinones, which is highly determined by the consumption of cheese, is associated with a reduced risk of incident and fatal cancer.

PMID: 20335553

