Abstract

BACKGROUND: Dietary fiber may reduce the risk of prostate cancer, possibly by increasing circulating concentrations of sex hormone-binding globulin and improving insulin sensitivity. However, results from previous epidemiologic studies of fiber intake and prostate cancer are inconsistent, and to our knowledge, no study has comprehensively evaluated the effects of soluble and insoluble fiber on prostate cancer in Asia.

OBJECTIVE: The objective was to examine the association between fiber intake and prostate cancer in Japanese men.

DESIGN: We conducted a population-based prospective study in 43,435 Japanese men aged 45-74 y. Participants responded to a validated questionnaire, which included 138 food items. Follow-up was from 1995 through 2009. HRs and 95% CIs of incidence were calculated according to quartiles of fiber intake.

RESULTS: During the 11.6-y follow-up, of the 825 men newly diagnosed with prostate cancer, 213 had advanced-stage cancer, 582 had organ-localized disease, and 30 had an undetermined stage of disease. Among them, 217 cases were detected by subjective symptoms. Total fiber was not associated with total or advanced prostate cancer, with respective multivariable HRs for the highest and lowest quartiles of 1.00 (95% CI: 0.77, 1.29; P-trend = 0.97) and 0.67 (95% CI: 0.42, 1.07; P-trend = 0.30). Total fiber and insoluble fiber intake were associated with a decreased risk of advanced cancers detected by subjective symptoms, with multivariate HRs (95% CIs) across increasing quartiles of 1.00, 0.58, 0.62, and 0.44 (0.21, 0.92; P-trend = 0.05) for total fiber and 1.00, 0.60, 0.52, and 0.46 (0.22, 0.93; P-trend = 0.04) for insoluble fiber. Soluble fiber intake showed no association with prostate cancer.

CONCLUSIONS: Dietary fiber is inversely associated with advanced prostate cancer detected by subjective symptoms even among populations with relatively low intake, such as Japanese. These results suggest that a very low intake of dietary fiber is associated with an increased risk of prostate cancer.


KEYWORDS: JPHC Study; Japanese men; fiber intake; prospective study; prostate cancer

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