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Association Between Inflammatory Diets, Circulating Markers of Inflammation, and Risk of Diverticulitis

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Background & Aims

Lifestyle and dietary risk factors for diverticulitis also have been associated with chronic inflammation. We performed a prospective study of associations among the inflammatory potential of diets, circulating markers of inflammation, and the incidence of diverticulitis.

Methods

We followed up 46,418 men, initially free of diverticulitis, from 1986 through 2014 in the Health Professionals Follow-Up Study. We collected data on empiric dietary inflammatory pattern scores, which indicate the inflammatory potential of diets, and determined their association with the risk of incident diverticulitis using Cox proportional hazards regression. We used blood samples provided by 18,225 participants from 1993 through 1995 to conduct a nested case–control study; we used conditional logistic regression to evaluate prediagnostic plasma levels of markers of inflammation, including C-reactive protein (CRP), interleukin 6 (IL6), and tumor necrosis factor–receptor superfamily member 1B, in 310 diverticulitis cases and 310 matched diverticulitis-free individuals (controls).

Results

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We documented 1110 cases of incident diverticulitis over 992,589 person-years of follow-up evaluation. Compared with participants in the lowest quintile of empiric dietary inflammatory pattern scores, men in the highest quintile had a multivariable-adjusted hazard ratio for diverticulitis of 1.31 (95% CI, 1.07–1.60; $P_{\text{trend}} = .01$). The association did not differ significantly by strata of body mass index or vigorous activity (P for interaction $> .05$ for each). In the nested case–control study, plasma levels of CRP and IL6 were associated with risk of diverticulitis. When we compared extreme quintiles, the multivariable-adjusted relative risk for diverticulitis was 1.85 for CRP (95% CI, 1.04–3.30) and 2.04 for IL6 (95% CI, 1.09–3.84).

Conclusions

In a large prospective cohort of men, we found that the inflammatory potential of diet and prediagnostic plasma levels of markers of inflammation were associated with incident diverticulitis.

Keywords

EDIP; Diverticular Disease; Colon; Food

Abbreviations used in this paper

BMI, body mass index; CRP, C-reactive protein; EDIP, Empiric Dietary Inflammatory Pattern; FFQ, food frequency questionnaire; HPFS, Health Professionals Follow-Up Study; HR, hazard ratio; IL, interleukin; TNFRSF1B, tumor necrosis factor–receptor superfamily member 1B

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Conflicts of interest This author discloses the following: Andrew T. Chan previously served as a consultant for Janssen Pharmaceuticals, Pfizer, Inc, and Bayer Pharma AG for work unrelated to the topic. The remaining authors disclose no conflicts.

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