

Letters to the Editor

Diabetes Mellitus and Subsite-Specific Colorectal Cancer Risks in the Iowa Women's Health Study¹

To the Editors: In the Iowa Women's Health Study, Limburg et al. (1) found that diabetes increased the risk of cancer of the proximal colon (relative risk = 1.4), but not that of the distal colon (relative risk = 1.1) or the rectum (relative risk = 0.8). Epidemiologic evidence on the subsite-specific risk of diabetes on colorectal cancer is limited. A case-control study from Hawaii reported a stronger association in distal than in proximal colon (2). Similar associations throughout the colorectum were found in a Swedish cohort, although the risk was slightly higher in the proximal than in the distal colon or rectum (3). The Nurses' Health Study found higher risk of cancer in the proximal than in the distal colon or rectum (4). We report the subsite-specific results of a multicentric case-control study conducted in Italy and Switzerland between 1992 and 2000 (5, 6).

Cases were 1,859 patients (1,079 men and 780 women) below age 75 with incident, histologically confirmed colorectal cancer with known subsite-specific location of cancer. Controls were 4,765 patients (2,403 men and 2,362 women) admitted to hospital for acute, nonneoplastic, and non-gastrointestinal diseases (5, 6). Trained interviewers questioned cases and controls during their hospital stay; the proportion of refusals was <5%. Odds ratios (OR) and 95% confidence intervals (95% CI) were obtained using multiple logistic regression analysis, including terms for age, sex, center, education, body mass index, physical activity at work, intake of total energy, fats, fibers and alcohol, and family history of colorectal cancer in first-degree relatives.

Table 1 shows the distribution of cases and controls according to history of diabetes in patients with subsite-specific colorectal cancer. Overall, 8.9% cases of proximal colon cancer, 6.3% cases of distal colon cancer, 7.4% cases of rectal cancer, and 4.4% controls reported a history of diabetes. The multivariate OR for all colorectal cancers was 1.50 (95% CI, 1.18-1.90). We found a direct association for all three subsites of colorectal cancer, with a stronger association with risk of proximal (2.05) than distal (1.32) colon cancer. Allowance for a large number of confounding factors did not materially modify the risk estimates.

When the results of our study were taken together with those of the other four studies reporting information on the relation between diabetes and risk of cancer at colorectal subsites (1-4), the summary risk estimates were 1.51 (95% CI, 1.39-1.64) for cancer of the proximal colon, 1.33 (95% CI, 1.20-1.47) for cancer of the distal colon, and 1.25 (95% CI, 1.15-1.36) for cancer of the rectum (*P* for heterogeneity = 0.005),

suggesting a progression from a stronger to a weaker association of diabetes with cancer risk throughout the colorectum.

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Table 1. Distribution of subsite-specific colorectal cancer cases and controls according to history of diabetes

Diabetes	Controls		Proximal colon cancer		Distal colon cancer		Rectal cancer	
	<i>n</i>	<i>n</i>	<i>n</i>	OR (95% CI)*	<i>n</i>	OR (95% CI)*	<i>n</i>	OR (95% CI)*
No	4,555	297		1 [†]	612	1 [†]	815	1 [†]
Yes	210	29		2.05 (1.33-3.16)	41	1.32 (0.92-1.90)	65	1.59 (1.17-2.15)

NOTE: Italy and Switzerland, 1992-2000.

*Estimated from multiple logistic regression equations including terms for age, sex, center, education, body mass index, physical activity at work, intake of total energy, fats, fibers, and alcohol, and family history of colorectal cancer in first-degree relatives.

[†]Reference category.

¹ The authors of the original article were invited to respond but did not do so.

BLOOD CANCER DISCOVERY

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