

Rectal Cancer

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Increasing Incidence of Rectal Cancer in Patients Younger Than 40 Years of Age: An Analysis of the SEER Database

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Background: An increase in the percentage of rectal cancer patients younger than 40 years of age has been observed at our institution (New York Presbyterian Hospital/Weill Cornell Medical College). To better substantiate these findings, we analyzed the incidence among young patients in the Surveillance Epidemiology and End Results (SEER) database.

Methods: Single-institution cancer registry records were queried for all rectal cancer patients from 1990 to 2006. Based on these results, the SEER database was consequently queried for cases defined as “rectum,” and “rectosigmoid,” between the years of 1973 and 2005. “Sigmoid colon,” “descending colon,” and “colon excluding rectum” were also queried as reference groups. All cases were sorted by age at diagnosis, sex, and year of diagnosis. Only cases younger than age 40 were used for analysis. Cases per 100,000 were calculated using SEER*Stat software and age-adjusted to the 2000 U.S. standard population. The annual percent change (APC) for each anatomic location from 1973 through 2005 was estimated using the weighted least squares method in the SEER*Stat

software. Ninety-five percent confidence intervals (95% CI) for the APC were calculated to assess the precision of the obtained estimates.

Results: Single-institution cancer registry records revealed a total of 699 patients with rectal cancer, of which 38 (5.4%) were under age 40. Between 1990 and 1994, 2% of patients with rectal cancer were under age 40; whereas, between 2002 and 2006, 7% of patients were in this age group. A total of 5,125 patients with colon cancer and 1,923 patients with rectal cancer were identified in the SEER database who were under age 40. The trend in incidence over the 32-year time period was calculated for both colon and rectal cancer and demonstrated an APC for rectal cancer of +2.6% (95% CI = 1.9%, 3.3%; $P < 0.0001$), as compared with a nonsignificant APC for colon cancer of -0.2% (95% CI = -0.6%, 0.3%; $P = 0.50$). When analyzed separately by sex, male rectal cancer patients showed an APC of +2.5% (95% CI = 1.5%, 3.5%; $P < 0.0001$) and females showed an APC of +2.6% (95% CI = 1.8%, 3.4%; $P < 0.0001$). When rectosigmoid, sigmoid, and descending colon tumor locations were analyzed, APC values of +2.2% (95% CI = 1.2%, 3.1%; $P < 0.0001$), +0.4% (95% CI = -0.3%, 1.2%; $P = 0.30$), and -1.8% (95% CI = -2.8%, -0.7%; $P < 0.0001$) were revealed.

Conclusions: The current study demonstrates an increasing percentage of rectal cancer patients younger than age 40 in our single institution. This trend is confirmed by data from the SEER database showing an increasing incidence of rectal and rectosigmoid cancer in patients under age 40. The lack of increase in incidence of cancer of the sigmoid, descending, or total colon in the same population suggests that this is a phenomenon specific to rectal and rectosigmoid cancer. Further investigation into possible etiologies for this increase is therefore warranted.

Table 1. Annual % change in incidence of colorectal cancer: SEER 1973-2005

Site	APC (%)	95% CI		P value
Rectum	+2.6	+1.9	+3.3	< 0.0001
Rectosigmoid	+2.2	+1.2	+3.1	< 0.0001
Sigmoid	+0.4	-0.3	+1.2	0.30
Descending Colon	-1.8	-2.8	-0.7	< 0.0001
Colon excluding Rectum	-0.2	-0.6	+0.3	0.50

