CORRESPONDENCE

Re: Effect of Age on Risk of Second Primary Colorectal Cancer

Patients with a history of colorectal cancer are at increased risk of second primary colorectal cancer, with an overall excess risk of 1.5-fold to twofold compared with the general population *(1–4)*.

On the basis of the large SEER[1] database, Shureiqi et al. *(4)* reported that the standardized incidence ratio (SIR) of second colorectal primary cancer decreased with age at diagnosis, from 160 at age 20–29 to 1.1 at age 80 or older. Since information on this issue is limited *(1,5,6)*, we exploited data from the Swiss Cancer Registry of Vaud for 1974 through 1999. The registry covers a population of 601 000 inhabitants in 1990; it is tumor-based, and multiple primary cancers in the same person are registered separately. Both passive and active follow-up are recorded *(2,3)*.

A total of 6579 subjects with primary colorectal cancer (excluding anorectal and anal primary cancers) were registered and followed for a mean follow-up of 4.3 years. Overall, 90 second primary colorectal cancers were observed versus 61.6 expected, corresponding to an SIR of 1.5 (95% confidence interval = 1.2 to 1.8). The SIRs, however, substantially declined with age at diagnosis, being 38.3 at age 30–39, 7.6 at age 40–49, 2.2 at age 50–59, and 1.2 at age 60 or older (Table 1). In contrast, no pattern of risk was observed with time since diagnosis of the first primary cancer; the SIR was 1.4 at less than 1 year, 1.3 at 1–4 years, and 1.7 at 5 years or more since diagnosis.

This study, therefore, adds further quantitative evidence that younger patients have a strong general predisposition to develop second primary colorectal cancer. This points to microsatellite instability and other hereditary defects in mismatch repair genes *(7)*, including those observed in hereditary nonpolyposis colon cancer *(5)*.

Switzerland, 1974 through 1999

Age, y	Observed	Expected	SIR (95% confidence interval)
30–39	3	0.1	38.3 (7.7 to 111.9)
40–49	7	0.9	7.6 (3.0 to 15.7)
50–59	13	5.9	2.2 (1.2 to 3.8)
60–69	16	15.9	1.0 (0.6 to 1.6)
70–79	40	26.7	1.5 (1.1 to 2.0)
⩾80	11	12.1	0.9 (0.5 to 1.6)
Total	90	61.6	1.5 (1.2 to 1.8)

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NOTES

[1]*Editor's note:* SEER is a set of geographically defined, population-based, central cancer registries in the United States, operated by local nonprofit organizations under contract to the National Cancer Institute (NCI). Registry data are submitted electronically without personal identifiers to the NCI on a biannual basis, and the NCI makes the data available to the public for scientific research.

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RESPONSE

The very informative correspondence of Dr. Levi and his colleagues provides further confirmation of the striking inverse correlation between age at diagnosis of a first colorectal primary cancer and the risk of a colorectal second primary tumor *(1,2)*. Consistent studies in three very large cohorts—ours in the United States *(1)*, one in Sweden *(2)*, and now another in Switzerland—validate the finding that younger age at the time of colorectal primary cancer diagnosis predicts a significantly increased risk for a colorectal second primary tumor. The Swedish cohort data *(2)* showed that the inverse correlation between age and risk of colorectal second primary cancer was more evident in sporadic colorectal cancer cases than in familial cases, whose high risk remains fairly constant across age groups. Furthermore, the majority of the Swedish familial cases did not have hereditary nonpolyposis colorectal cancer *(2)*. These data support the need for increased surveillance for colorectal second primary tumors in younger sporadic cancer patients (notwithstanding the absence of a family history of colorectal cancers) *(1)*. These younger patients also should be encouraged to participate in colorectal cancer chemoprevention studies *(1)*. Of course surveillance in familial cases is necessarily high at any

age. These findings substantiate our initial hypothesis that young patients' increased risk of colorectal second primary tumors is related to biologic phenomena that are independent of the currently known familial cancer syndromes. Clearly, further studies are warranted to identify the molecular basis of increased second primary tumor risk of young colorectal cancer patients.

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