

Why Is Colorectal Cancer Targeting the Young?

Cynthia J. Gordon, PhD | January 20, 2016

A 36-year-old father of two on dialysis, a health-conscious 25-year-old woman with suspected pelvic inflammatory disease, and a fit 31-year-old woman with a history of Crohn disease. All of these people shared something unexpected in common: colorectal cancer (CRC).

Long considered a disease of an aging population, CRC is now targeting individuals younger than 50 years, sometimes decades before the recommended age for undergoing the first screening colonoscopy.

In a special session at the sixth annual Ruesch Center Symposium held in December, experts addressed the disturbing facts about early-onset CRC.

Among individuals aged 50 years or older, CRC incidence and mortality rates have been declining in recent years,^[1] largely because of screening and surveillance programs that promote colonoscopy and stool testing in this population, said symposium speaker Tom Weber, MD, professor of surgery, SUNY Downstate Medical Center, and chief of surgery, Department of Veterans Affairs New York Harbor Healthcare System, Brooklyn Campus.

For reasons we don't fully understand, the incidence...of CRC under the age of 50 has been increasing at an incredible pace.

"But for reasons we don't fully understand, the incidence in the United States and other developed countries of CRC under the age of 50 has been increasing at an incredible pace," Dr Weber said.

On the basis of data from the Surveillance, Epidemiology, and End Results registries, US incidence rates of CRC per 100,000 young adults increased 1.5% in men and 1.6% in women per year from 1992 to 2005.^[2] Going back further, from 1973 to 1999, the incidence of colon cancer and rectal cancer in young adults increased by 17% and 75%, respectively.^[3] Currently, the number of new cases of CRC in patients younger than 50 years is estimated at 13,000 per year and is growing, Dr Weber said.

Compounding the trends in incidence rates is the fact that mortality in young adults with CRC is high, mainly because these patients tend to be diagnosed with late-stage disease, Dr Weber said. A single-center study of individuals aged 50 years or younger diagnosed with primary CRC revealed that 86% were symptomatic at the time of diagnosis.^[4]

Both patients and physicians contribute to delays in diagnosis, noted symposium speaker Stephanie Guiffre, director of the Never Too Young Coalition, an organization dedicated to the growing concern of late-stage, young-onset CRC. Young patients may not always understand the signs and symptoms of CRC, which may delay their seeking medical attention, she said. In addition, physicians often miss symptoms of CRC in young patients. "Initial misdiagnosis occurs in about 15%-50% of cases," she said.^[5]

Armed with these statistics, the symposium speakers agreed that efforts to promote increased research and awareness among patients and physicians about the unique characteristics of early-onset CRC are critical.

Why the Increase in CRC Among the Young?

Historically, physicians have associated CRC in young adults with hereditary syndromes, particularly Lynch syndrome, Dr Weber said. "But we know now that over 75% of CRC cases in young patients are in people who don't have a family history of the disease and are not members of the hereditary syndrome," he said.

Furthermore, Lynch syndrome is predominantly characterized by tumors on the right side of the colon, Dr Weber added. However, nonhereditary, early-onset cancers largely comprise tumors on the left side of the colon and in the rectum.

"So there's something biologically very different about what's going on here," Dr Weber said.

Session moderator Mohamed E. Salem, MD, Assistant Professor of Medicine at Georgetown University, is exploring the unique biology of early-onset CRC.

"Colon cancer is not the same for everyone," said Dr Salem. Tumors, even those within the same organ, have a unique genetic signature, he said, likening CRC to the surname shared by a brother and sister when "everything else is different."

To explore the complexities of CRC, Dr Salem is examining the genetic profile of tumors in a cohort of approximately 5000 patients. His group has identified differences in the tumors of younger vs older patients. They will present their results at the upcoming American Society of Clinical Oncology Gastrointestinal Cancers Symposium.

Other research is focused on the unique epidemiology and risk factors associated with early-onset CRC. In addition to genetic predisposition and family history, CRC in younger people is more common in individuals with inflammatory bowel disease and those of African American descent.^[6] But aside from these known risk factors, researchers are trying to understand other factors that might be driving the marked increase in the incidence of early-onset CRC.

Large increases in the incidence rates of obesity and diabetes in young adults...parallel the increasing incidence of CRC in that age group.

Dr Weber highlighted several trends revealed by epidemiologic data of adults younger than 50 years. Most remarkably, large increases in the incidence rates of obesity and diabetes in young adults during the past three decades parallel the increasing incidence of CRC in that age group.^[2]

"Are they causal?" Dr Weber asked. "We don't know exactly, but the correlation is just impossible to overlook."

Likewise, increases in the consumption of sweetened beverages and decreases in the consumption of milk—containing CRC-protective calcium—also parallel increases in CRC incidence rates and may be a contributing factor.^[2] More effective management of diet, nutrition, and obesity in young adults could lead to a reduction in the incidence of not only diabetes, but also CRC, Dr Weber suggested.

Several other associations between dietary and behavioral factors and CRC have been observed in adults older than 50 years, including lack of exercise, consumption of processed meats, and alcohol use, said Dr Weber. But so far, data on these associations in younger people are lacking.

"We are very keen to look at these issues in the under-50 population group," Dr Weber said.

Current research is exploring potential associations between CRC and variations in the gut microbiome, exposure to environmental toxins, and changing patterns in the use of statins and antibiotics during the past several decades, Dr Weber said.

Facilitating Diagnosis at the Earliest Possible Stage

Considering the unique challenges associated with early-onset CRC and its rapidly increasing incidence, academics and advocacy groups are working together to support research focused on this emerging disease subtype.

"Given that people present late, and given that that can be a challenge in terms of treatment and long-term survival, the question is: How do we facilitate diagnosis for young-adult colorectal cancer at the earliest stage possible?" Dr Weber asked.

"Immediate attention is needed," Ms Guiffre said. "Without increased research and education, CRC in young adults will become a major health issue by the year 2030."

This is where the [Never Too Young Coalition](#) hopes to help.

"The coalition is united to take on young-onset CRC through action, education, and research," Ms Guiffre said. The coalition comprises CRC advocacy groups, comprehensive cancer centers, major research institutions, state health departments, cancer survivors, patients, and caregivers united in supporting research and public awareness of this disease.

Physician education is a key focus of the coalition. Together with the National Colorectal Cancer Roundtable, the group is working to educate physicians about the signs and symptoms associated with early-onset CRC to ensure that cases in young patients are not missed or misdiagnosed. In addition, the coalition is working with the Roundtable's Family History Task Force to help inform the medical community about the importance of family history and the role of genetic testing in young patients at risk for CRC.

To foster a better understanding of this disease, the Never Too Young Coalition has partnered with the American Association for Cancer Research to offer two \$50,000 fellowships for research focused on early-onset CRC. "Those fellowships will focus on the causes associated with the rise in young-onset CRC," Ms Guiffre said, specifically the unique biological features of tumors in individuals younger than 50 years.

The group is also collaborating with Dr Weber and his colleagues in New York City on several epidemiologic research projects aimed at defining the predominant risk factors and clinical symptoms associated with CRC in young adults. "If you combine our knowledge of risk factors and clinical presentation, you have a powerful tool to help our clinicians and healthcare providers make the right decisions when they see young people who have these issues and concerns," Dr Weber said.

The collaboration hopes to develop a risk-stratification scorecard that would aid healthcare providers in the identification of young people with symptoms indicative of CRC.

"Integrating information about clinical presentation and risk could facilitate diagnosis at the earliest stage possible, which would facilitate earlier treatment and reduce mortality from the disease," Dr Weber said.

One of the challenges in identifying the risk factors for young-onset CRC is that most population-based registries are not currently designed to collect risk factor information, Dr Weber noted. He hopes to see the collection of these data in population-based registries in the future. In the meantime, his group is working with the Never Too Young Coalition to design patient surveys that will capture risk factor information.

"We're working together with the coalition on a young-adult CRC patient survey that will explore patients' experiences of trying to get a diagnosis and the extent to which they were counseled about their treatment options," Dr Weber said. "Given the limitations of our population-based cancer registries, survivor surveys are extremely important to help us understand what is going on."

In March, Dr Weber will host the Second Annual Early Age Onset Colorectal Cancer Summit in New York City, where discussions about the unique challenges of CRC in young adults will continue.

References

1. American Cancer Society. Colorectal Cancer Facts & Figures 2014-2016. Atlanta, Ga: American Cancer Society; 2014.

2. Siegel RL, Jemal A, Ward EM. Increase in incidence of colorectal cancer among young men and women in the United States. *Cancer Epidemiol Biomarkers Prev.* 2009;18:1695-1698. [Abstract](#)
3. O'Connell JB, Maggard MA, Liu JH, et al. Rates of colon and rectal cancers are increasing in young adults. *Am Surg.* 2003;69:866-872. [Abstract](#)
4. Dozois EJ, Boardman LA, Suwanthanma W, et al. Young-onset colorectal cancer in patients with no known genetic predisposition: can we increase early recognition and improve outcome? *Medicine (Baltimore).* 2008;87:259-263.
5. Never Too Young Coalition. Know the facts. <http://www.ccalliance.org/young-and-brave/know-the-facts> Accessed December 31, 2015.
6. American Cancer Society. Colorectal cancer prevention and early detection. 2014. <http://www.cancer.org/acs/groups/cid/documents/webcontent/003170-pdf.pdf> Accessed December 31, 2015.

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