

One in five young colon cancer patients have genetic link



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As doctors grapple with increasing rates of colorectal cancers in young people, new research from the University of Michigan may offer some insight into how the disease developed and how to prevent further cancers. Researchers found that 20 percent of young people diagnosed with colorectal cancer have an inherited genetic abnormality that predisposes to its development – a percentage exponentially higher than those diagnosed over age 50. More than half of them do not have clinical or family histories that would typically indicate the need for genetic testing.

The study, published in *Gastroenterology*, looked at the results of multigene panel testing from 430 people under the age of 50 who were treated for colorectal cancer at the U-M

Comprehensive Cancer Center between 1998 and 2015.

Genetic testing is usually only recommended for colon cancer patients with a strong family history or with tumors with certain features. This study tested a broader sample of patients and looked at a wider variety of genes than are traditionally tested.

“Usually when someone is diagnosed with cancer, if there’s no family history of cancer we think the likelihood of an inherited factor is small,” says Elena Stoffel, M.D. M.P.H., assistant professor of internal medicine at the University of Michigan Medical School and director of the Cancer Genetics Clinic at the U-M Comprehensive Cancer Center.

“But our study suggests that even in the absence of a family history of cancer, the prevalence of inherited factors is so high in young colorectal cancer patients that it makes sense to test everyone, as these heritable alterations can impact their care as well as the care of their family members.”

Stoffel says that the new findings illustrate the shortcomings of algorithms currently used to identify patients likely to benefit from genetic testing.

“I think what we’re finding is the people we used to test in the past were probably the tip of the iceberg,” says Stoffel. “And that there are many other people who may not meet those strict criteria, who are actually at high risk.”

Catching up insurance coverage with research results

“From a public health standpoint, characterizing the genetic contribution to these often deadly cancers is a vital first step in the design of prevention and screening strategies to identify those at highest risk,” says study co-author Laura Rozek, associate professor of Environmental Health Sciences and Nutritional Sciences at U-M’s School of Public Health.

But identifying the need for genetic testing is only half the battle. Insurance companies have strict guidelines about who qualifies for genetic testing, usually involving multiple relatives with colon cancer diagnoses spanning two generations.

“Requiring those criteria in young people means that you’re going to miss people,” says Stoffel. “Missing inherited alterations in young people arguably has a larger impact because of the opportunity to prevent cancers in their at-risk relatives.”

The more extensive – and expensive – multigene panel testing employed by researchers to cast a wider net and identify more genetic mutations that lead to colorectal cancers is also not covered by many insurers, and can run anywhere from \$300 to \$2,000 out of pocket for patients.

“We’re caught in that time frame between where the technology has advanced to the certain point where our tests are now better than they used to be,” says Stoffel. “The insurers are not covering the new technology because they consider it experimental.”

Insurance companies require proof that the new technology is better than the old technology, says Stoffel, and there have now been a number of studies published that suggest that if doctors test for more genes, they will find more alterations. The next step is to show how those findings will impact morbidity and mortality.

“I think whenever we see a patient with colorectal cancer we should be asking why did this person develop cancer,” says Stoffel. “We know that in most cases it’s just plain bad luck, but we always need to look at a patient’s family history, and in young people, consideration of the possibility of an inherited condition should always be there even if there is no family history of cancer. With early intervention, we can

prevent future cancers in these patients as well as cancers in their relatives.”

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More information:

Elena M. Stoffel et al. Germline Genetic Features of Young Individuals with Colorectal Cancer, *Gastroenterology* (2017). DOI: 10.1053/j.gastro.2017.11.004

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