Medical Xpress

Rise of colorectal cancer in young people: Why minorities are more vulnerable

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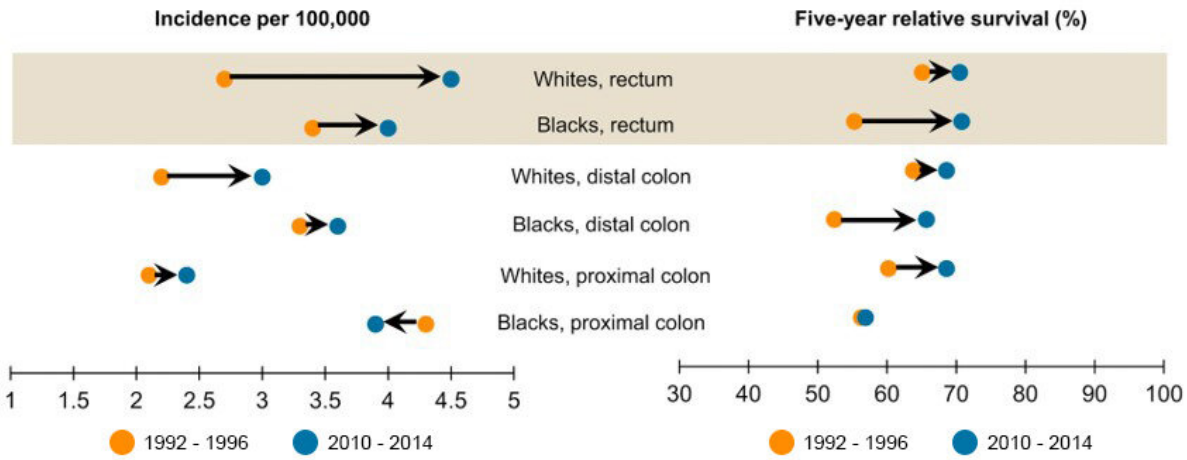


While early onset colorectal cancers are on the rise, most survival rates have also improved, except for young African Americans diagnosed with proximal colon cancer. Credit: Medical University of South Carolina

They are troubling questions that have researchers across the country stumped—why are more young people being diagnosed with colorectal cancer, and why do some people have worse outcomes than others? It's a topic of particular interest for Kristin Wallace, Ph.D., and Marvella Ford, Ph.D., MUSC Hollings Cancer Center researchers who study colorectal cancer rates and disparities.

The trend concerns Wallace, who published a study in Frontiers in

Oncology in April looking at genetic markers that could explain differences in diagnoses and outcomes between African Americans and whites. Wallace found that African Americans more often had proximal adenomas, or noncancerous tumors, than whites and a lower prevalence of rectal adenomas. Her group also found that these lesions were more likely to possess immunosuppressive signatures, suggesting a compromised immune response to the cancer.

In earlier work, they found that the disparities were particularly pronounced in younger patients and a differential immune response could play a role. "There needs to be a push to look at the reasons why we're seeing such a difference in survival in young African American patients under 50 versus younger Caucasians."

Colorectal cancer was what claimed the life of "Black Panther" star and South Carolina native Chadwick Boseman, who died at the age of 43 after being diagnosed with stage 4 colon cancer. It's a trend becoming all too common, especially in South Carolina where numerous counties were identified as hot spots for early onset colorectal cancer in a study published in *Clinical and Translational Gastroenterology* in December.

Ford is interested in what behavioral, geographical and socioeconomic factors could be leading more young people, especially African Americans, to die from colorectal cancer in South Carolina.

"Chadwick Boseman was a young man who was below the recommended screening age for colorectal cancer," Ford said. "Clearly, there is something going on here. The fact that South Carolina is such a hot spot, and he's from South Carolina, makes me want to look at the markers associated with his cancer to determine what may have caused it."

Possible causes

Raymond N. DuBois, M.D., Ph.D., director of Hollings Cancer Center, received a grant from the Department of Defense to investigate how dietary fat affects the development of colon cancer. DuBois' research is focused on better understanding the disease, its progression and finding more effective treatment options.

"Exactly how dietary fat intake contributes to colorectal cancer remains elusive," DuBois said. "It is also unknown whether dietary fats suppress a host's immune response against tumor cells."

Another area researchers are studying is the affect antibiotics have on early onset colorectal cancer. A Scottish study published in the *Annals of Oncology* was recently presented at the World Congress on Gastrointestinal Cancer. It found that antibiotic use was associated with an increased risk of colon cancer for older patients and especially younger patients under the age of 50.

The same results were found by researchers at the University of South Carolina in a May 2018 study published in *Cancer Medicine*. Wallace said long-term antibiotic use may alter the microbiota in the colorectum.

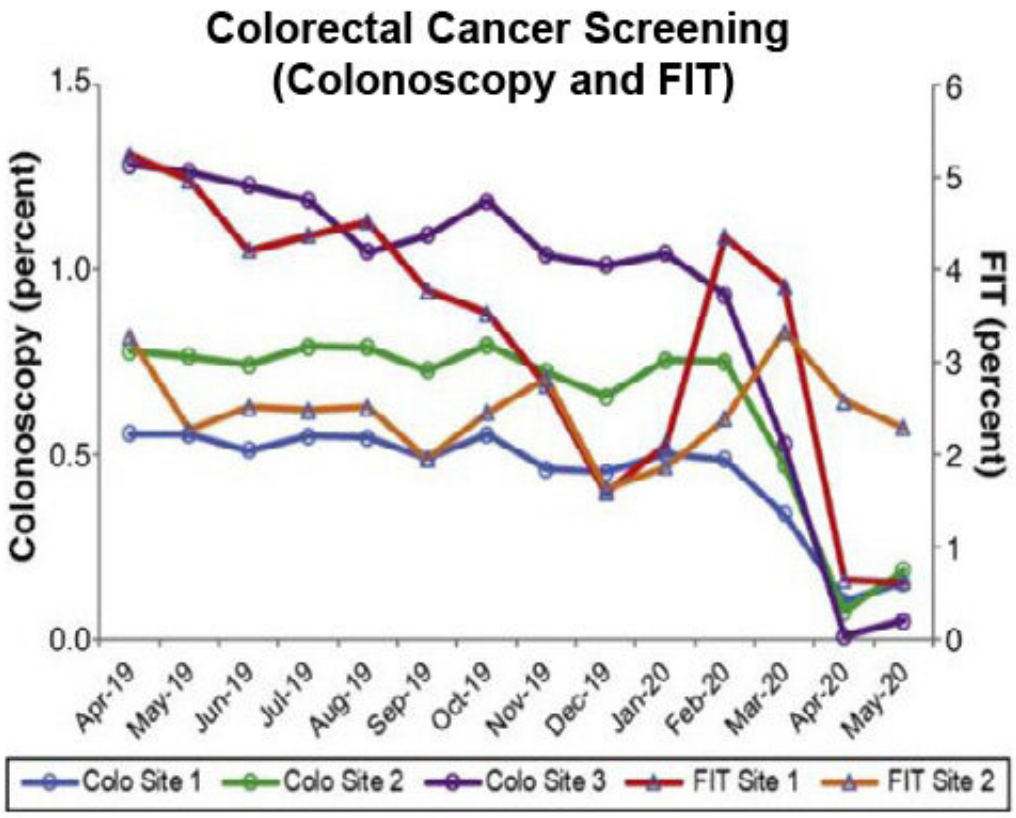
"Antibiotics, given at certain ages over an extended amount of time could change the composition of the microbes within the colon," Wallace said. "There are notable differences in the microbial infiltrates in the rectum, the proximal colon and the distal colon. We depend on this bacteria to behave in a collaborative way. Antibiotics may destroy some of the good bacteria, allowing pathogenic bacteria a growth advantage."

Wallace said that routine use of antibiotics could reset how the gut functions and reduce the bacterial diversity that is present.

Wallace was part of a 2019 study that found cases of young onset rectal

cancer in whites increased dramatically between 1992 and 2014. Ford argues that if prescribing antibiotics are to blame, it makes sense that more cases are being diagnosed among whites than African Americans.

"We know that to get an antibiotic, you have to see a doctor," Ford said. "If you don't have insurance, you're less likely to be seen by a doctor. We know that there are disparities and access to care issues impacting African Americans."



The COVID-19 pandemic caused colorectal cancer screenings to plummet in early 2020. Credit: Medical University of South Carolina

Minorities at risk

Another area of concern for researchers is why some populations seem to have worse outcomes than others. In the 2019 study, Wallace showed that although rectal cancer among young whites saw the biggest increase, survival rates for all early onset colorectal cancers have improved since 1992 except for one group—young African Americans diagnosed with proximal colon cancer.

"The differences may be partially attributed to ancestry and genetics but lifestyle and behavioral factors, such as obesity, diabetes, smoking and stress, likely play a larger role and can contribute to the earlier aging that we see in African Americans," Wallace said.

Early aging, or "weathering," among minorities is a particular topic of interest for Ford. Ford said there are possible interrelationships among environment, stressors, negative health behaviors and physical and mental health disorders. She argued that everyday stressors faced by African Americans cause them to age quicker, which in turn causes earlier diagnoses of diseases.

"When you look at just about any disease type, including diabetes, cardiovascular disease and cancer, Black people on average are diagnosed 10 years earlier than whites," Ford said.

Other factors affecting minority populations are access to care and early detection through screenings like colonoscopies, which are key in colorectal cancer outcomes. Those living in rural and underserved communities struggle with many of these issues, including insurance coverage. Ford said the National Cancer Institute hopes to address these issues by introducing alternative screening tools that don't require a person to pay for a colonoscopy at a doctor's office.

"There are fecal tests and kits that people can use at home now that can detect colon cancer, and then a colonoscopy can be done to confirm the

diagnosis," Ford said. "Providing this greatly improves access to underserved communities."

Screening guidelines

Whatever the causes, clinicians agree that the best outcomes will be for those who catch colorectal cancer early. The Centers for Disease Control and Prevention recommends regular screening beginning at the age of 45. However, for those with an inflammatory bowel disease, genetic syndromes such as familial adenomatous polyposis or a family history of colorectal cancer, earlier and more frequent screenings may be needed.

No effective therapy exists to treat advanced-stage colorectal cancer. The five-year survival rate for advanced cases is only 5% to 15%, compared to more than 90% if the colorectal cancer is caught in stage 1 or stage 2.

Doctors are worried that the COVID-19 pandemic may cause more advanced colorectal cancers to be diagnosed due to a dramatic decrease in the number of screenings completed in 2020. A chart published in the June 18 edition of *The Cancer Letter* showed rates of colorectal screenings plummeting between March 2020 and April 2020.

Locally, doctors saw around a 55% reduction in screening examinations during 2020, according to Brenda Hoffman, M.D., and Thomas Curran, M.D., both gastrointestinal specialists at Hollings.

"Many people had fears about an increased risk of catching COVID-19 in the medical environment," Curran said. "On top of that, people were dealing with a number of economic and social stressors that likely put colorectal cancer screening on the back burner. It can be difficult to focus on your health when you are worrying about your loved ones and livelihood. Yet, as more time passes, the potential risks to further delays

in colorectal cancer screening also increase."

Curran published a study in *Cancer Medicine* in March detailing colon cancer disparities and found that there may be a more aggressive phenotype in African American patients that plays a role in worse survival outcomes. He's also concerned about younger people he's seeing with colorectal cancer. Curran said that one in three new rectal cancers diagnosed are in patients under the age of 55.

"This makes it incredibly important that patients don't delay in getting their first screening, which should now be at the age of 45 for average risk patients, according to the American Cancer Society."

Screenings become even more important because the majority of colorectal cancers don't cause any symptoms at all, said Curran. "There are things that patients should bring to the attention of their health care providers right away, such as blood in the stool, change in bowel habits or unintended weight loss. Those type of symptoms would often prompt consideration of a colonoscopy or other tests to understand more fully the reason for those symptoms."

Wallace is hopeful that further research will reveal why more young people are dying from colorectal cancer. Until then, she and other doctors stress the importance of listening to your body and getting screened.

"Colon cancer is almost all preventable," Wallace said. "That's the beauty of it—but also the tragedy of it."

More information: Kristin Wallace et al, Preinvasive Colorectal Lesions of African Americans Display an Immunosuppressive Signature Compared to Caucasian Americans, *Frontiers in Oncology* (2021). DOI: 10.3389/fonc.2021.659036

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Provided by Medical University of South Carolina