

Racial disparities persist in the diagnosis of advanced breast cancer and colon cancer in the U.S.

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The incidence of advanced breast cancer diagnosis among black women remained 30 percent to 90 percent higher compared to white women between 1992 and 2004, according to new findings by researchers at Fred Hutchinson Cancer Research Center. In addition, the disparity in the incidence of advance colorectal cancer actually widened over this time period as rates fell among whites but increased slightly among blacks.

The findings are published online in the inaugural issue of Springer's journal *Hormones and Cancer*, a publication of the Endocrine Society.

"While we could not determine the exact contributors to the trends we saw in this study, it is interesting to note that for breast cancer, mammographic screening rates were quite similar among African American and white women in the United States during the time period we studied. This suggests that factors other than screening may be contributing to this persistent disparity, including differences in both lifestyle and genetics," said senior author Christopher I. Li, M.D., Ph.D., an associate member of the Public Health Sciences Division at the Hutchinson Center.

A potential explanation for this disparity, he said, is that overall, black women have more-aggressive tumors that are more difficult to detect and treat as compared to non-Hispanic white women. Specifically, they

have higher rates of hormone-receptor-negative breast cancers. Such tumors, while relatively rare, grow quickly and therefore often are not detected during screening mammograms. These tumors also are more resistant to therapy because they don't respond to estrogen-blocking drugs such as tamoxifen.

The study included data on 7,237 women with newly diagnosed distant-stage breast cancer. Of these women, 1,364 were black and 5,873 were white. Overall, rates of advanced breast cancer remained essentially constant among women of both races throughout the study period, affecting about 18 out of 100,000 black women and 12 out of 100,000 white women.

The study also looked at rates of advanced-stage colorectal and prostate cancer in an attempt to deduce how screening practices may have impacted the magnitude of racial disparities in these malignancies during this 12-year period, an era of increased use of breast, colorectal and prostate cancer screening in the U.S.

For colorectal cancer, the researchers saw a widening of the racial disparity gap. Distant-stage incidence rates among non-Hispanic whites declined over time but increased somewhat among blacks. "It is possible that differing rates of colorectal endoscopy screening between African American and non-Hispanic whites could contribute to this widening disparity," said lead author Jean McDougall, M.P.H., a doctoral student in epidemiology at the University of Washington School of Public Health.

The study looked at data from 8,920 people diagnosed with distant-stage colorectal cancer. Of these, 1,669 were black and 7,251 were white. The black colorectal cancer patients were slightly younger at diagnosis and were more likely to be female as compared to whites. The relative risk of advanced colorectal cancer was significantly elevated in blacks

throughout the study period. In 1992, blacks were 60 percent more likely to be diagnosed with late-stage colorectal cancer as compared to whites, and by 2004 that likelihood had doubled.

However, for prostate cancer, the disparity gap narrowed somewhat over time, as advanced-stage prostate cancer incidence rates declined for both black and non-Hispanic whites. The study included data from 2,801 men with late-stage cancer, 791 black and 2,010 white. The incidence of distant-stage prostate cancer among black men fell from 50 cases in 100,000 at the start of the study to 19.8 cases in 100,000 at the end of the data collection process. This level was still three times higher than that of white men, but it was a significant decline nonetheless.

"During this time period it became increasingly apparent that prostate cancer was an important public health problem in the African American community and there was a lot of effort to address this issue by raising awareness of screening," Li said. "I think that maybe we're seeing some of the benefits of that work here."

For the study, the researchers analyzed data from 12 population-based urban cancer registries throughout the continental U.S. and Hawaii, representing about 14 percent of the population. They focused on distant-stage cancers for which screening tests were widely available.

Data included female breast cancer cases between ages 40 and 64, male prostate cancer cases between ages 50 and 64, and male and female colorectal cancer cases between ages 50 and 64. The age ranges were chosen to reflect American Cancer Society screening guidelines and Medicare eligibility.

The study did not evaluate late-stage cancer rates among Asians/Pacific Islanders, American Indians/Alaska Natives or those of Hispanic ethnicity because of insufficient numbers of cases within each

racial/ethnic group to conduct a statistically significant analysis of cancer trends over time.

Because the analysis was based on population-based data on incidence rates of advanced cancer but not on individual data that would reflect tumor biology or screening practices, the authors caution that the findings cannot predict individual risk but should be interpreted as a broad view of cancer trends over time.

"Epidemiologic studies such as this one are an important first step in understanding trends in disease rates on a population level," McDougal said. "However, we cannot draw strong conclusions regarding the factors contributing to the trends observed from this study, as its goal was to describe trends over time without using detailed data on individual cases and the complex factors that contribute to disease."

The authors concluded that blacks continue to have a disproportionately high cancer burden, and therefore "continued multipronged efforts aimed at improving access to breast, colorectal and prostate cancer prevention, screening, diagnostics and treatment services are warranted."

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