

Disparities in breast cancer persist across all subtypes and stages

October 13 2015

It has been consistently observed that minority women, especially African Americans, Hispanic whites and American Indians, are more likely to be diagnosed at advanced stages of breast cancer, less likely to receive recommended treatment regimens, and more likely to die of the disease. Previous studies have addressed the disparities by stage of disease and survival rates, but did not characterize them by subtypes, Lu Chen, MPH, a researcher in the Public Health Sciences Division at Fred Hutchinson Cancer Research Center in Seattle said.

The study is published in *Cancer Epidemiology, Biomarkers & Prevention*, a journal of the American Association for Cancer Research.

Chen and colleagues drew on data from 18 U.S. population-based cancer registries participating in the Surveillance, Epidemiology, and End Results (SEER) program of the National Cancer Institute. The data include demographic characteristics, stage, tumor grade and size, primary treatment, and health insurance status of 102,064 U.S. women, plus their tumor subtypes, hormone receptor (HR) status, and human epidermal growth factor 2-neu (HER2) status.

The researchers found that non-Hispanic [white women](#) were more likely to have smaller tumors, and more likely to have the less-aggressive HR+/HER2- subtype of breast cancer, compared with African-American women, who were more likely to have large tumors, more likely to have the aggressive triple-negative breast cancer, and 40 to 70 percent more likely to be diagnosed at stage 4 of all subtypes of breast cancer.

Hispanic white women were 30 to 40 percent more likely to be diagnosed at stage 2 and/or stage 3 across all breast cancer subtypes.

The disparities continued across all stages of disease. Compared with non-Hispanic whites, women of all other racial and ethnic groups were more likely to be diagnosed with more advanced stages of breast cancer, researchers found.

They also found that compared with non-Hispanic white women, African-American women were 30 to 60 percent more likely to receive non-guideline concordant (inappropriate) treatment across all subtypes except HR-/HER2+, and Hispanic white women were 20 to 40 percent more likely to receive inappropriate treatment (except HR-/HER2+ and triple-negative cases). Asians and Pacific Islanders showed no disparity with non-Hispanic white patients in receiving guideline-concordant treatment. American Indian and Alaska Native women showed some disparities, but Chen noted that the sample size of this group was small, undermining the ability to detect statistically significant differences. Disparities persisted after adjusting for insurance status, suggesting that other factors also play important roles.

"We found that there is a consistent pattern of late diagnosis and not receiving recommended treatment for some racial and ethnic groups across all breast cancer subtypes," Chen said in an interview. In recent years, increased information about the molecular and genetic characteristics of breast cancer has helped improve treatment for the disease. "The treatment for breast cancer is currently dependent on the type of breast cancer, defined by the estrogen receptor, progesterone receptor, and HER2 status," Chen said. "This is the reason why we think it's important to look at the disparities by subtype."

Chen added, "Given the racial and ethnic disparities, targeted, culturally appropriate interventions in [breast cancer](#) screening and care have the

potential to reduce the disparities and close the existing survival gaps."

Chen said limitations of the study include: Exclusion of 14 percent of the [women](#) in the original sample due to missing data, potential misclassification and variations in the data gathered by cancer registries, and a short follow-up time between the collection of data and the completion of the study.

Provided by American Association for Cancer Research

Citation: Disparities in breast cancer persist across all subtypes and stages (2015, October 13)
retrieved 25 April 2024 from
<https://medicalxpress.com/news/2015-10-disparities-breast-cancer-persist-subtypes.html>

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