Breast cancer risk calculator updated for Asian-Americans

May 17 2011

Researchers have developed a more accurate method for estimating breast cancer risk for Asian and Pacific Islander American (APA) women. Most current risk estimates rely on data from non-Hispanic white women, but researchers have now come up with a statistical model that more specifically assesses risk for American women who identify themselves as Chinese, Japanese, Filipino, Hawaiian, other Pacific Islander, or other Asian.

This model, developed by scientists from the National Cancer Institute (NCI), part of the National Institutes of Health, is described in a paper that appeared online May 11, 2011, in the Journal of the National Cancer Institute.

NCI's Breast Cancer Risk Assessment Tool (BCRAT), which estimates a woman's risk of developing invasive breast cancer, is used to counsel women and to determine eligibility for breast cancer prevention trials. It is based on the Gail model, an algorithm that uses information about personal and family medical history to estimate a woman's chances of developing breast cancer, during the next five years and over her lifetime. The BCRAT was initially based on data from white women but was later augmented with a new model for estimating risk in African-American women, called the CARE model. With the publication of this latest model, the BCRAT has been updated again to include the new algorithm, and a disclaimer about accuracy for APA women has been removed.

"The new model is the latest step in our ongoing effort to improve NCI's Breast Cancer Risk Assessment Tool by updating it with newly obtained data for specific subgroups of the population," said senior author Mitchell H. Gail, M.D., Ph.D., after whom the original model is named.

To develop the model, Gail and colleagues used data from the Asian American Breast Cancer Study (AABCS), combined with data from NCI's Surveillance, Epidemiology, and End Results (SEER) program. The AABCS is a population-based study which included more than 1,500 APA women, 38 percent of whom had invasive breast cancer. The resulting algorithm was tested using data from approximately 4,000 APA women in the NIH Women's Health Initiative, a study of health issues among postmenopausal women.

The factors included in the APA model are the same as those for the other models included in the BCRAT. They include age at first menstrual period, age at first live birth, number of first-degree relatives (mother, sisters, or daughters) who had breast cancer, and number of previous benign breast biopsy examinations. However, the weight of individual factors and the calculations used to assess the interactions of multiple factors have been adjusted.

The researchers compared the projections of the model, which they named after the AABCS, with those of the BCRAT. For most risk factor combinations, the BCRAT generated higher risk estimates for APA women than the AABCS model. Compared with the new model, the BCRAT overestimated risk for Chinese and Filipino women, and women in most other groups, but not for Hawaiian women, who have higher breast cancer incidence rates than white women. Overall, they found that the AABCS model more accurately predicted breast cancer risk for APA women.

Each year in the general population, there are about 93.7 new cases of

breast cancer per 100,000 APA women, and 127.3 new cases per 100,000 non-Hispanic white women, according to SEER data. In a 2007 SEER study, researchers found that among APA subgroups, native Hawaiian women had the highest breast cancer incidence rates (175.8 per 100,000), followed by Japanese-Americans (126.5 per 100,000). For Chinese-Americans, the largest subgroup, there are approximately 77.6 new cases per 100,000 women.

The new model may overestimate risk for women who have recently immigrated to the United States from certain regions of Asia where breast cancer risk is low. Further, the tool may not be appropriate for women living outside the United States. Although the authors conclude that there is a need for additional validation studies on the model, they recommend that clinicians and researchers use the AABCS model instead of the previous model when counseling APA women about their risk for breast cancer and determining their eligibility for breast cancer prevention trials.

Like the other risk projection models, the AABCS should only be used in consultation with a physician. The models that make up the BCRAT, including the new AABCS model, are not appropriate for women who have a history of breast cancers, have received radiation treatments to the chest, or who are known to carry a mutation in one of the breast cancer susceptibility genes (BRCA1 and BRCA2).

To access the NCI's Breast Cancer Risk Assessment Tool (BCRAT), please visit: www.cancer.gov/bcrisktool/

More information: jnci.oxfordjournals.org/conten … jnci.djr154.abstract

Medical Xpress

Provided by National Institutes of Health

Citation: Breast cancer risk calculator updated for Asian-Americans (2011, May 17) retrieved 24 April 2024 from https://medicalxpress.com/news/2011-05-breast-cancer-asian-americans.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.