High-Risk Women Can Benefit From Medications to Prevent Breast Cancer

Task force says some women can benefit from risk-reducing drugs like tamoxifen, but women at average risk should not take them.

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The U.S. Preventive Services Task Force (USPSTF) has issued updated recommendations on the use of medications to reduce the risk of breast cancer. The experts recommend that clinicians should offer preventive medications to women with an elevated risk of developing breast cancer due to factors such as family history or harmful BRCA mutations, but women who are not at increased risk should not use them.

"There are medications available that can help some women prevent breast cancer, but they are not for everyone," task force member Michael Barry, MD, of Harvard Medical School and Massachusetts General Hospital, said in a press release. "For women who are at increased risk for breast cancer, these medications can be beneficial and reduce their risk."

The panel of volunteer experts based their recommendations on a review of more than 40 scientific studies, with a combined total of more than 5 million participants, that evaluated the accuracy of risk-assessment methods to identify women likely to develop breast cancer and the effectiveness and adverse effects of preventive medications. A draft of the recommendations was released in January, and, after a public comment period, the final version was published in the Journal of the American Medical Association on September 3.

The latest recommendations apply to women age 35 or older who do not currently have breast cancer; however, they may have had biopsies showing benign breast lesions, such as atypical ductal or lobular hyperplasia or lobular carcinoma in situ. The recommendations do not apply to women who have already been diagnosed with breast cancer or ductal carcinoma in situ, including those who have been treated and are now considered cancer-free.

An estimated one in eight women will develop breast cancer during their lifetime. Women at increased risk include older women, those with a family history of breast cancer (especially occurring at a young age), those who carry harmful BRCA gene mutations, those with a history of chest radiation to treat other cancers and those who have had previous abnormal biopsy results. These and other factors should be considered together to determine whether a woman is likely to benefit from preventive therapy and has a low likelihood of adverse side effects, the panel said.

Risk-assessment tools are available, but they have only a modest ability to predict who will develop breast cancer.

Medications that may be used to reduce the risk of developing breast cancer include two types of hormone therapy: selective estrogen receptor modulators, orSERMs, such astamoxifen (Nolvadex and generic equivalents) andraloxifene (Evista and generics), and aromatase inhibitors, such as anastrozole (Arimidex and generics) and exemestane (Aromasin and generics). In most studies, these drugs were taken for three to five years. The previous version of the recommendations in 2013 did not include aromatase inhibitors.

A majority of breast tumors carry receptors for estrogen, and the presence of this hormone can spur cancer growth. SERMs block the effects of estrogen in breast tissue, while aromatase inhibitors interfere with an enzyme that converts other hormones to estrogen.

Treatment for estrogen-receptor-positive cancer typically includes these and other hormone therapies that inhibit the production of estrogen or block its activity. These may be given either to shrink tumors before surgery and radiation (known as neoadjuvant therapy) or to prevent cancer recurrence afterward (known as adjuvant therapy).

Hormone therapy can cause side effects including hot flashes, insomnia, muscle and bone pain, bone loss (osteoporosis), blood clots, cardiovascular problems, cataracts and an increased risk of endometrial cancer. For this reason, these medications should not be used by women who are not at increased risk for developing breast cancer.

The recommendation that clinicians should offer preventive medications for high-risk women received a B grade, meaning there is evidence that the intervention has at least a modest net benefit that outweighs the harms. Under the Affordable Care Act insurers are required to cover preventive services recommended by the USPSTF with an A or B rating. The recommendation against preventive therapy for women not at elevated risk for breast cancer received a D grade, meaning the evidence indicates that it either has little or no benefit or that the harms outweigh the benefits.

“We all want to find better ways to help prevent breast cancer, and it’s important that clinicians talk with patients about their level of risk and carefully consider the best approach,” said task force member Carol Mangione, MD, MSPH, of the David Geffen School of Medicine at the University of California, Los Angeles.

“Given the barriers to use, including the harms associated with a preventive treatment with moderate benefit, more accurate identification of women most likely to benefit or experience harm could help to focus preventive efforts on the clinical situations in which these medications will have most effect,” Lydia Pace, MD, MPH, of Brigham and Women’s Hospital in Boston, and Nancy Keating, MD, MPH, of Harvard Medical School, wrote in an accompanying editorial. “Meanwhile, considering risk-reducing medications for women with five-year risk greater than 3% seems reasonable, as well as for women with atypical hyperplasia and lobular carcinoma in situ.”

Click here to read the full USPSTF recommendations and accompanying editorials.

Click here to read a summary of the recommendations for patients.

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