Putting Prevention into Practice

An Evidence-Based Approach

Medication Use to Reduce Risk of Breast Cancer

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Case Study

E.F., a 40-year-old woman, comes to your office for a routine gynecologic visit. She is not taking any medications and is generally healthy. She is sexually active, and her last menstrual period started 10 days ago. She tells you that her mother was diagnosed with bilateral breast cancer at 49 years of age and that she would like to discuss her options for reducing the risk of breast cancer.

Case Study Questions

1. According to the U.S. Preventive Services Task Force (USPSTF) recommendation on medication use to reduce risk of breast cancer, who should be offered risk-reducing medications?

- ☐ A. A 40-year-old woman with a first-degree relative with breast cancer.
- ☐ B. A 50-year-old woman with a first-degree relative who developed breast cancer at 55 years of age.
- ☐ C. A 40-year-old woman with a 5% risk of developing breast cancer in the next five years.
- ☐ D. A 50-year-old woman with a second-degree relative with bilateral breast cancer.
- ☐ E. A 60-year-old woman with a 1% risk of developing breast cancer in the next five years.

2. Based on her increased risk for breast cancer, E.F. decides to take a risk-reducing medication. Which one of the following is the most appropriate next step for the physician?

- ☐ A. Offer the patient raloxifene (Evista).
- ☐ B. Offer the patient tamoxifen.
- ☐ C. Offer the patient anastrozole.
- ☐ D. Offer the patient exemestane.
- ☐ E. Do not offer any medications.

3. Which of the following statements are correct about the harms of risk-reducing medications?

- ☐ A. The use of tamoxifen is associated with an increased risk of endometrial cancer.
- ☐ B. The use of raloxifene is associated with an increased risk of fractures.
- ☐ C. Both tamoxifen and raloxifene are associated with an increased risk of thromboembolic events.
- ☐ D. All risk-reducing medications are associated with an increased risk of vasomotor and musculoskeletal symptoms.

Answers appear on the following page.

See related U.S. Preventive Services Task Force Recommendation Statement at https://www.aafp.org/afp/2020/0315/od1.html and related Editorial on page 330.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and supporting documents on the USPSTF website (https://www.uspreventiveservicestaskforce.org). The practice recommendations in this activity are available at https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/breast-cancer-medications-for-risk-reduction1.

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CME **This clinical content** conforms to AAFP criteria for continuing medical education (CME). See CME Quiz on page 337.

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Answers

1. The correct answer is C. The USPSTF recommends that clinicians offer to prescribe risk-reducing medications to asymptomatic women at increased risk for breast cancer and at low risk for adverse medication effects (B recommendation).[1] Physicians may use formal clinical risk assessment tools or assess breast cancer risk factors without using a formal tool. If a formal clinical risk assessment tool is used, there is no single cutoff for defining increased risk for all women.[2] Women at greater risk, such as those with at least a 3% risk of breast cancer in the next five years, are likely to derive more benefit than harm from risk-reducing medications and should be offered these medications if their risk of harms is low. Physicians may also use combinations of risk factors to identify women at increased risk, including, but not limited to, older than 65 years with one first-degree relative with breast cancer; 45 years of age or older with more than one first-degree relative with breast cancer or one first-degree relative who developed breast cancer before 50 years of age; 40 years of age or older with a first-degree relative with bilateral breast cancer; and presence of atypical ductal or lobular hyperplasia or lobular carcinoma in situ on a prior biopsy.

2. The correct answer is B. The USPSTF found evidence that risk-reducing medications such as tamoxifen, raloxifene, and aromatase inhibitors provide benefit in reducing risk for breast cancer in women at increased risk; however, of these medications, only tamoxifen is indicated for use in premenopausal women.[1]

3. The correct answers are A, C, and D. Harms associated with risk-reducing medications include increased risk of thromboembolic events (tamoxifen and raloxifene), endometrial cancer (tamoxifen), cataracts (tamoxifen), and vasomotor or musculoskeletal symptoms (all medications).[1,2] The risks of endometrial cancer and thromboembolic events are higher in older women than in younger women and return to baseline after discontinuation of tamoxifen. Tamoxifen and raloxifene can decrease the risk of fractures in women with osteoporosis.

The views expressed in this work are those of the authors and do not reflect the official policy or position of Case Western Reserve University/University Hospitals Cleveland Medical Center, the U.S. Department of Health and Human Services, or the U.S. government.

References

1. Davidson KW, Krist AH, Barry MJ, et al. Medication use to reduce risk of breast cancer: US Preventive Services Task Force recommendation statement. *JAMA*. 2019;322(9):857-867.
2. Nelson HD, Fu R, Zakher B, et al. Medication use for the risk reduction of primary breast cancer in women: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2019; 322(9):868-886. ■