Tamoxifen’s Breast Cancer Benefits Questioned

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Tamoxifen therapy may actually reduce life expectancy slightly in nonhysterectomized women at the low end of the high-risk range for breast cancer, according to an analysis based on hypothetical cohorts.

“The results of our analysis raise questions about the impact of tamoxifen for breast cancer risk reduction on short-term and longer-term mortality,” wrote Dr. Joy Melnikov of the University of California-Davis, Sacramento, and her colleagues.

“Tamoxifen for breast cancer risk reduction is unlikely to have an important effect on overall mortality for women at a 5-year breast cancer risk of 1.67% ... When the effect of the poorer prognosis of the [estrogen receptor-negative] breast cancers that occur among women taking tamoxifen on their breast cancer mortality is accounted for, tamoxifen is projected to reduce life expectancy slightly until women reach a minimum 2.1% 5-year breast cancer risk,” they wrote.

Additionally, studies have found a hysterectomy, tamoxifen becomes a more favorable approach, since the risks of endometrial cancer are eliminated in this group, they added. The study was published in the Sept. 1 issue of the journal Cancer.

Tamoxifen was approved by the Food and Drug Administration in 1998 for breast cancer prevention in women who have at least a 1.67% chance of developing the disease over the next 5 years.

The analysis used a state-transition Markov model to track tamoxifen use over a 5-year period in hypothetical cohorts of women aged 50 years or more whose 5-year breast cancer risk ranged from 1% to 5%. Health outcomes, life expectancy, and costs per life-year saved were estimated based on a 5-year risk of 1.67%, which is the threshold for risk reduction therapy used in the National Surgical Adjuvant Breast and Bowel Project (NSABP) P-1 trial.

Using outcomes described in the NSABP P-1 trial, the study examined tamoxifen’s effect on reducing the risks of invasive breast cancer, ductal carcinoma in situ, and osteoporotic fractures, while increasing the risks of endometrial cancer, deep venous thrombosis, pulmonary embolism, and cataracts that require surgery.

Cost-effectiveness analyses were performed separately for hysterectomized and nonhysterectomized women, because the former no longer face tamoxifen’s increased risk of endometrial cancer.

Additionally, prognostic differences were estimated based on the presence of either ER-positive or ER-negative breast cancers—the latter carrying a worse prognosis. “To our knowledge, no previously published analysis has accounted for the difference in prognosis for women with ER-negative cancers,” they wrote.

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