Anastrozole may prevent breast cancer in high-risk postmenopausal women

By ACSH Staff — December 13, 2013

Aromatase inhibitors are drugs that block the production of estrogen, a key factor in causing breast cancer. This led to the hypothesis that lowering the estrogen production in this way would prevent breast cancer occurrence. It had previously been shown that aromatase inhibitors could prevent the secondary occurrence of breast cancer: tumors which develop after a primary cancer is treated, but unrelated to the first one. But it was not clear that these drugs could effectively prevent breast cancer in the first place.

In order to study the effects of these drugs, postmenopausal women who were at high risk (anywhere from 1.5 to 4-fold higher than the general population) for developing breast cancer were treated with anastrozole (Arimidex), an aromatase inhibitor, or given placebo pills for 5 years. The study was a randomized, multi-center trial run in 18 countries, and the results were published in The Lancet. The researchers randomly assigned 1,920 women to receive the active drug, and 1,944 to receive placebo (inactive) pills. Participants took a pill daily for a median of five years between 2003 and 2012. On average, the women in the study were initially 59.5 years old, with 18 percent being older than 65 years.

Upon entering the study, each participant was given a mammogram and physical breast examination at a local clinic. The exams were repeated 6 and 12 months later, and then annually for an additional 4 years. The primary endpoint of the study was to determine the incidence of new breast cancers in women on anastrozole compared to that seen in women on the placebo pills. Changes in bone mineral density and fractures were also monitored.

Analysis of the results revealed that there were substantially fewer breast cancers in the group that took anastrozole than in placebo group 53 percent lower in the treated group. The breast cancers in the placebo group included both ductal carcinoma in situ (DCIS) as well as invasive, estrogen-positive tumors. There was no difference in the incidence of estrogen-negative tumors, which is unsurprising, since the effect of the drug blocking estrogen would not likely have an effect on tumors without estrogen receptors.

Further, side-effects seen in the study that could be attributed to estrogen deprivation (due to the
drug or to menopause) were typically also increased in the placebo group, and thus, the authors stated that these couldn't be attributed to the drug treatment.

In their discussion, the authors indicated: Our results strongly support the use of anastrozole for preventive treatment of high-risk postmenopausal women.

ACSH's Dr. Elizabeth Whelan concurs: These are very important results that could both decrease the occurrence of breast cancer in these women, and perhaps avoid the necessity of prophylactic mastectomy.

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