Although many women worry about the possibility of breast cancer, a select group of women face especially high odds of developing the disease. New phase 3 clinical trial results presented at the recent 2013 San Antonio Breast Cancer Symposium may point to ways to transform care for such women, as well as for women who already have the disease.

**Antihormone Therapy for Breast Cancer Prevention**

Many women who face particularly high odds of developing breast cancer—including those having 2 or more blood relatives with breast cancer, a mother or sister who developed breast cancer before the age of 50 years, or a mother or sister who had breast cancer in both breasts—are willing to take preventive measures. Some have prophylactic mastectomies. Some opt for long-term use of the antihormone therapies tamoxifen or raloxifene, which respectively lower breast cancer risk by 50% and 38% but can cause significant adverse effects such as blood clots and stroke.

The phase 3 International Breast Cancer Intervention Study II (IBIS-II) Prevention trial investigated whether anastrozole, an alternative antihormone therapy, could reduce breast cancer risk in postmenopausal women. Women 50 years and older were randomly assigned to take preventive measures. Some have prophylactic mastectomies. Some opt for long-term use of the antihormone therapies tamoxifen or raloxifene, which respectively lower breast cancer risk by 50% and 38% but can cause significant adverse effects such as blood clots and stroke.

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to 5% in survival observed in meta-analyses that viewed breast cancer as a single disease. Anthracyclines, which are antibiotics that damage DNA in cancerous and proliferating cells, are linked with adverse effects, including congestive heart failure and leukemia.

Slamon and his colleagues assessed a different postsurgical strategy with the Bevacizumab and Trastuzumab Adjuvant Therapy in HER2-Positive Breast Cancer (BETH) trial, which included more than 3500 patients. After a median of 38 months of follow-up, patients who received docetaxel, carboplatin, and trastuzumab (TCH) or TCH with bevacizumab (an anti-angiogenic agent) had similar disease-free survival rates (92% in each group) as patients who received anthracycline-based therapy plus trastuzumab (89%).

The researchers are continuing to follow up patients to determine whether outcomes remain similar. “These are among the best results we have seen to date in the adjuvant treatment of HER2-positive breast cancer,” said Slamon. “My feeling is that the TCH regimen is driving the very positive responses we are seeing.”

Emerging Data Continue to Find Lack of Benefit for Vitamin-Mineral Supplement Use

Mike Mitka, MSJ

The past year has been a tough one for proponents of long-term use of vitamin and mineral supplements for chronic disease prevention. New findings add to the growing body of evidence suggesting that vitamin and mineral supplements do not provide benefit to individuals in the general public hoping to ward off chronic diseases. In addition, some recent studies have cautioned that excessive intake of certain supplements may be associated with an increased risk of cancer or heart disease.

Findings published December 17 in the Annals of Internal Medicine found long-term multivitamin supplementation does not provide cognitive benefits in men aged 65 years or older and high-dose oral multivitamins and multiminerals do not reduce cardiovascular events in patients who have had a myocardial infarction and who are receiving standard medications. The findings reinforce updated recommendations from the US Preventive Services Task Force (USPSTF), published in the same issue, that found limited evidence supporting any benefit from vitamin and mineral supplementation for the primary prevention of cancer or cardiovascular disease.

In an accompanying editorial, the authors wrote, “Although available evidence does not rule out small benefits or harms or large benefits or harms in a small subgroup of the population, we believe that the case is closed—supplementing the diet of well-nourished adults with (most) mineral or vitamin supplements has no clear benefit and might even be harmful. These vitamins should not be used for chronic disease prevention. Enough is enough.”

But whether enough is enough remains to be seen. US consumers spend almost $12 billion a year on vitamins and mineral supplements. Even as the evidence of lack of benefit increases, the percentage of US adults using multivitamins appears to be increasing, growing from 30% between 1988 and 1994 to 39% between 2003 and 2006.

Editorial coauthor Edgar Miller III, MD, PhD, professor of medicine at Johns Hopkins University in Baltimore, said the juxtaposition of strong vitamin and mineral supplement sales to the general public against the mounting evidence that using them is not helpful in decreasing chronic disease risk prompted the editorial’s tone.

“Because of the large number of trials that have come in showing a lack of benefit and some harm, the evidence is so strongly negative in terms of protecting people against chronic disease, we felt we needed to make a strong statement,” Miller said. “Vitamins and minerals should be promoted based on the evidence, and trials continue to roll in showing no benefit and sometimes harm.”

One of the Annals’ studies was a randomized, double-blind, placebo-controlled trial of multivitamin use from 1997 to June 2011 involving 5947 male

US consumers spend almost $12 billion a year on vitamins and mineral supplements, even as studies continue to raise questions about the effectiveness of supplementation to prevent chronic diseases.