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INTRODUCTION

This article will focus on 5 areas of patient care (either in an office setting or an urgent care setting) to assist physicians in working with their patients diagnosed with breast cancer. Although oncologists will provide cancer patients special treatments and procedures, it is the internist and/or primary care provider who first interface with the patient. We are the ones who screen patients and identify abnormal mammograms or other markers. With this in mind, it is important for internists and other primary care physicians to know about breast cancer and have enough up-to-date information to comfortably and competently discuss the disease and treatment options with patients.

In our practice, we have identified the following as the 5 leading questions on the minds of patients who want concise, accurate answers to help them cope with breast cancer.

1. Is there a health disparity in the screening, diagnosis, and treatment of breast cancer?
2. Does screening mammography actually save lives?
3. What about genetic testing, is it important for me?
4. Is the use of tamoxifen prophylactically safe?
5. What are the long-term benefits of total mastectomy vs lumpectomy with radiation?

BREAST CANCER STATISTICS

Breast cancer is second in cancer deaths in women and is the most common cancer in women.¹ In 2002, an es-

timated 205,000 American women will be diagnosed with breast cancer; of those, 40,000 will die. The incidence of overall breast cancer diagnosis has increased between 1940 and 1980, with a sharp rise in the early 80s; this is likely due to the increased use of mammography. Deaths attributable to cancer appear to be leveling off and may be due to earlier detection and more effective treatment.² While this is good news for the general population, individual subgroups are not experiencing the same improvement in the death rate due to cancer. The National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) study looked at 1.7 million patients and followed them on cancer-specific survival rates between 1975 and 1997.³ This study included a good sampling of all the different major racial and ethnic groups in various geographical regions across the country. SEER researchers found that Caucasians had the highest number of cases and the highest incidence of breast cancer and, in contrast, Asian Americans had the lowest. As was found with lung cancer, American Indians and Alaskan natives had the least favorable rate of cancer deaths attributable to breast cancer.

The SEER study also found that African-American women had more than one third the rate of breast cancer mortality compared to their White counterparts in all age groups, except the older than 70 years age group. Rates for the older group may be due to a later stage diagnose and thus, a worse prognosis. It has also been postulated that physicians are less likely to recommend mammography screening to Black women because of cost and perceived likelihood of noncompliance.^{4,5} This approach could illustrate why breast cancer survival

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HELPING PATIENTS UNDERSTAND BREAST CANCER

Is there a Health Disparity in the Screening, Diagnosis, and Treatment of Breast Cancer?

To answer this first question, research appears to indicate that there are disparities, yet the overall death rate has been leveling off.² What does this mean to the primary care physicians? There is still much work needed to improve the death rate in various subgroups, which include African Americans, American Indians, and Alaskan natives. The death rate in these groups has been found to be different even after accounting for socioeconomic status, the stage of disease, and the histologic grade of the cancer.³

Does Mammography Save Lives?

The January 2000 *Lancet* article by Grousch and Othen⁶ attempted to make a case against the benefits of mammography. The researchers conducted a meta-analysis of 8 studies that were conducted on the benefits of mammography; 6 studies were dismissed and only 2 were used to reach the study's conclusions, which were later found to be flawed.⁷ In actuality, breast cancer screening with mammography has been proven to reduce mortality from breast cancer.⁷ In a recent edition of *Cancer*,

Swedish researchers published a study that found that when mammography screening was instituted in 2 counties in Sweden, the breast cancer rate of death declined by 29%, compared to breast cancer death rates prior to the study period.⁷

Another important fact is that breast cancers have been reported to be identified 90% of the time by mammography and only 10% of the time by physical examination alone. With this evidence, monthly self-breast exam, although useful for checks between mammograms, are not adequate. The mammogram is still an important diagnostic tool to identify the majority of the breast cancers.

Primary care physicians should keep in mind that mammography does improve the early detection rate, and it does lower the mortality rate of breast cancer. Although there are more screening tests on the horizon, mammography remains the best screening test we have at this time.

As for when mammograms should occur and which patients should receive them, some debate in the field has rendered varying recommendations. In general, however, mammogram screening should occur from age 40 onward, with annual or bi-annual screening. However, for those patients with first-degree relatives with breast cancer, mammograms should begin 10 years earlier than the age of onset for the youngest relative diagnosed with breast cancer. While there is no upper age limit to screening, physicians should recommend mammography as needed on a patient-by-patient basis.

What about Genetic Testing, is it Important for Me?

Genetic testing should be conducted for those who appear to have a high likelihood (greater than 10%) of a specific mutation, namely the BRCA1 or 2. Patients in this high-risk group are: women of Ashkenazi Jewish descent; women with a family member who had

breast cancer at less than age 35; and men with breast cancer. Individuals in these groups are at high risk; genetic testing can be recommended for these individuals to ascertain if they are, indeed, at higher risk genetically than the average person. For individuals where a genetic mutation is found, breast cancer screening should start at age 25, instead of at age 40. A word of caution: be sure that genetic testing and follow-up counseling is conducted by a certified geneticist. Genetic testing and counseling is covered by insurance; however, insurance will not cover for relatives to be screened.

Is the Use of Tamoxifen Prophylactically Safe?

What about tamoxifen? Tamoxifen is an estrogen-receptor modifier with both estrogenic and antiestrogenic properties. It has been on the market for about 20 years and is used as adjuvant chemotherapy. It works against the effects of the estrogen on the cancer cells by slowing or stopping their growth. The estrogenic properties work to reduce the cholesterol profile, as well as help to prevent osteoporosis. As it is used as adjuvant chemotherapy in women who have been diagnosed with breast cancer, researchers explored the possibility of using tamoxifen to prevent cancer in women with high risk.⁸ Through clinical studies, research concluded that, although tamoxifen has the side effects of menopausal symptoms, mood changes, development of cataracts, thrombosis and uterine abnormalities (even endometrial cancer), it can be used prophylactically in people who would have a high-risk of developing breast cancer, but at low risk for the previously mentioned side effects, especially thrombosis.⁸

Studies that supported the safe use of tamoxifen prophylactically included the International Cancer Breast Intervention Study (ICBIS), a clinical trial with more than 7,000 women who were at increased risk for breast cancer.⁸

Study participants were given tamoxifen at a dose of 20 mg a day (the same dose given in adjuvant chemotherapy) for 5 years (the maximum recommended use for tamoxifen). ICBIS found a 32% reduction in the incidence of breast cancer study participants taking tamoxifen, compared to those not receiving tamoxifen.

Before tamoxifen is prescribed as a preventative agent, risk factors for breast cancer need to be thoroughly assessed by the physician. Major risk factors for breast cancer include:

1. Early age at menarche or late age at menopause. This could be related to the longer duration of estrogen in the system.
2. First full-term pregnancy after 30 years of age.
3. Personal or family history, especially if members of the family have developed breast cancer before the 30 years of age.
4. Previous breast biopsy with benign pathology, such as proliferative changes with atypia. Lobular carcinoma is itself a marker for a developing breast cancer at a later date, but in itself does not turn into cancer. Genetics such as BRCA1 and 2 and environmental factors such as weight, smoking or alcohol, and a high-fat diet may place an individual at risk. In terms of the high-fat diet, it has been postulated that Asian Americans may have a low rate of breast cancer due to diets low in fat and high in soy.⁸
5. Other factors, such as socioeconomic and increasing age (especially those older than 70 years of age), contribute to a higher risk of developing breast cancer.

While tamoxifen has been approved for preventive use, a new drug, raloxifene, has recently been in the news as a possible chemopreventative therapy for breast cancer. While it is not yet FDA-approved for chemoprevention, more studies are being conducted to prove its efficacy for breast cancer prevention; in

the meantime, raloxifene has been approved for the treatment of osteoporosis.

In summary, use of tamoxifen as a preventive agent has been the subject of several studies, with the latest study published by the United States Preventive Services Task Force (USPSTF). In this study, the USPSTF recommends discussing chemo-prevention approaches with high-risk patients, with a low risk of adverse effects from tamoxifen. This is based largely on the studies that were done on tamoxifen, especially the Breast Cancer Prevention Trial.⁸

What are the Long-Term Benefits of Total Mastectomy vs Lumpectomy with Radiation?

This question concerning breast cancer patients is related to the long-term benefits of total mastectomy vs lumpectomy plus radiation. In a recent study published in the *New England Journal of Medicine*,^{9,10} breast cancer patients were followed for 20 years after they had surgery as part of their treatments. The result was that they really did not find any difference in the survival rate of the patients who underwent total mastectomy vs lumpectomy or segmental resection, as it was called, plus radiation. The study also examined a third group—patients who had only lumpectomy. While we have now learned that it is not complete treatment to have lumpectomy only, this was the only treatment provided to this group of patients at the time. In the study, the long-term survival rate was found to be similar between both groups. One caveat in the article said that lumpectomy plus radiation is appropriate, as long as the physician is certain that the margins are free of cancer. If it is not free of cancer, a re-resection will be required. Therefore, the researchers did not recommend the more disfiguring surgery of total mastectomy when a lumpectomy plus radiation in stage 1 or 2 breast cancer can achieve the same long-term survival benefits.^{9,10}

In summary, breast cancer is a disease that presents in primary care settings; primary care physicians are at the forefront of diagnosis and treatment of breast cancer.

CONCLUSION

In summary, breast cancer is a disease that presents in primary care settings; primary care physicians are at the forefront of diagnosis and treatment of breast cancer. We must continue to narrow the health disparities found in some ethnic groups by offering wider screening and easier access to treatment and follow-up. It is hoped that this article will serve as a tool for physicians to discuss breast cancer diagnosis and treatment with patients thus leading to improved compliance and health outcomes.

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