Baylor Clinic Healthletter

Focus On Breast Cancer Advancements **November 2007**

By Jenny Chang, MD, Medical Director, Lester and Sue Smith Breast Center at Baylor College of Medicine

Breast cancer remains the most common cancer in women today, however the disease is no longer the death sentence it once was. While the incidence of breast cancer is actually increasing, since the 1990s, mortality or death from breast cancer has been decreasing for women in the western world. Significant progress has been made; much more will be achieved.

Detection is by far the most important means of decreasing breast mortality. Advancements in screening mammograms, digital mammography, and MRI screening for appropriate women have led to earlier detection of breast cancer, enabling treatment of the disease at a stage where it is imminently treatable. These advancements in early detection are largely responsible for the decrease we have seen in the number of lives lost to the disease.

Equally important are advancements in the prevention of breast cancer. Many studies are now showing that a healthy lifestyle – avoidance of alcohol, increased exercise, good nutrition, etc. – may result in a decrease in breast cancer.

Better treatments for breast cancer, especially early stage breast cancer, have also greatly reduced the death toll. The 1980s were heralded by the arrival of endocrine therapy, the first targeted therapy for breast cancer, directed against the estrogen receptor. Advancements with the drug Tamoxifen and other selective estrogen receptor modulators, and newer endocrine agents like aromatase inhibitors, have decreased a patient's chance of relapse by more than 50 percent. These medications block the activity of estrogen on breast cancer cells.

Research being conducted here at the Lester and Sue Smith Breast Center and elsewhere has also improved our understanding of estrogen receptor pathways, helping us select the right women to get these therapies.

Another very important advancement in early breast cancer is a gene known as HER2/neu, which our research team at the Smith Breast Center, led by Dr. Kent Osborne, actually discovered about 25 years ago. Therapies directed against this HER2 gene, which is related to poor patient prognosis, have resulted in a 50 percent reduction in the risk of relapse in patients with this gene, further decreasing breast cancer mortality.

Significant progress has also been made in the treatment of metastatic breast cancer. Years ago when I was in training, patients with HER2 metastatic breast cancers, for example, had a very poor prognosis because there were no therapies directed against this form of the disease. Today, many patients with HER2 over-expressing metastatic cancers – cancers that have spread throughout the body – can live a very long time with the disease, much like patients do with diabetes or hypertension. The same can be said for patients with estrogen receptor metastatic breast cancer.

All of this progress has been achieved through a better understanding of the biology behind breast cancer. Breast cancer is not just one disease, but rather a very heterogeneous collection of diseases. One breast cancer is not the same as another. Think of breast cancer as many criminals that share the same holding room, but not all the criminals are the same. Some are petty thieves, others are murderers. The same can be said of breast cancer. It has the same organ, but with many, many types of criminals within it.

The advancements we're seeing today are the fruits of decades of research, and that research will continue. Understanding the biology behind what causes behind breast cancer, and directing therapies appropriately to the genes that cause that cancer, will one day enable us to change the disease into a chronic illness, even for those patients with metastatic disease. For early stage breast cancer patients, I believe we will be able to prevent the disease or prevent any form of relapse.

Early detection remains the best possible way to prevent the loss of lives to breast cancer, making it imperative that women follow the recommended guidelines for annual screenings. Every woman should undergo annual mammograms beginning at age 40, so that we can catch this disease at the earliest possible stage, before it becomes invasive. For those women who do get breast cancer, remember the outlook is far better today than ever before in the history of this disease. For the vast majority – 85 percent of cases where cancer is detected through screenings – the cancer is treated and does not relapse within 10 years. Progress is being made. Together, much more can be achieved.

***Jenny Chang, MD**, is associate professor of Medicine at Baylor College of Medicine and medical director of the Lester and Sue Smith Breast Center. Dr. Chang focuses on clinical research of new biologic therapies as well as translational research to identify molecular factors that predict response to various endocrine and chemotherapy treatments. She is particularly interested in identifying markers to predict response to treatments, thereby allowing the best therapy for individual women to be selected.*

The Lester and Sue Smith Breast Center at Baylor College of Medicine brings together a multidisciplinary team of breast care specialists in one location, integrated with an internationally recognized research program, all collaborating to provide life-saving patient care today and a cure for tomorrow. A major component of the Dan L. Duncan Cancer Center, an NCI-designated cancer center, the Smith Breast Center is recognized as one of the top breast centers in the world.

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