IUSCC PINK

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Dear Friends,

All of us have certain rituals associated with the December holidays and the start of the New Year. Though we often complain that we don't have time to put up the tree or the outdoor lights, we know deep down that the season wouldn't be complete without these tasks – and the complaining is in fact part of the ritual. Like many of you, I spend time reflecting on the year that's gone by and anticipating the year ahead. I think about the many amazing and courageous women I've had the privilege of caring for in the past year. Most of these women are doing well, and I say a prayer of thanks for that.

But unlike those of most people, my reflections include remembrances of my patients who've passed away in the last 12 months. And … dare I say … I can't help listing in my mind the patients who are likely to lose their battles with breast cancer in the 12 months to come.

When I reflect on those who have died, I find myself remembering not the pain and suffering, but rather the smiles and the laughter, the incredible warmth and vibrancy. And now silence. The silence is deafening and the loss is very, very personal. Personal not just for me but also for the husbands, mothers, daughters, sons, and friends. I mourn not only the dear women, but I also mourn the many, many relationships that are cut short and the many lives that will never be the same again. Then I think of the women who are near the end of their struggles now, and I find it almost unbearable.

You see, breast cancer is not just a disease to me. It's personal. Though this part of my year-end ritual is not easy, I would argue that it's necessary. Grief is transformed to resolve. Anger refuels my passion to do whatever I can to help end this destroyer-of-lives.

My passion expresses itself in many ways, but I want to highlight two of them here. Since 2001, I have served as the clinical arm of the Catherine Peachey Breast Cancer Prevention Program. What does that mean? I see women who, for a variety of reasons (see inset), are at increased risk for developing breast cancer. Together we discuss their risk, try to quantify it, and then draw up a plan to reduce it. We discuss fixing the fix-able risk factors, possible genetic testing, individualized surveillance plans, possible chemoprevention with Tamoxifen or Raloxifene, and even surgery. Most of these women leave my office feeling relieved, first because someone else besides them now "owns" their worries about breast cancer and also because now they have a battle plan. Many know that though close surveillance with frequent clinical breast exams, mammograms, and MRIs can't guarantee that they won't get breast cancer, if they should develop the disease, it is likely to be at a very early stage. But to quote a dear friend and muse, "That's not good enough." **Continued on page 2**

Breast Cancer Risk Factors

- Older age
- Family history of breast cancer
- Personal history of specific benign breast conditions (e.g., atypical hyperplasia, lobular carcinoma in situ)
- Early menarche, nulliparity/late first birth, late menopause
- Radiation exposure
- Menopausal hormone therapy
- Alcohol use
- High-fat diet (possible)

ASCO

Table of Contents

A New Year's Resolution continued.....2
San Antonio Breast Cancer Symposium 2007.....4-5
In the News.....7
Breast Cancer Targets.....3
Featured Web site.....6
Breast Cancer Q & A... 7

A New Year's Resolution

Continued from page 1

I want to be able to stop the disease altogether. The only way to do this is to stop the malignant process "in the act", before the development of a full-fledged cancer, complete with the ability to grow and eventually metastasize. Many superb scientists in labs all over the world are working to "decipher" the malignant process. We finally have the tools and technology we need to elucidate the molecular pathways that cause the normal breast cells to become "rogue agents". But what is normal? It is this question that now stymies even the most brilliant minds. We have the technology, we have an abundance (unfortunately) of malignant tissue, but until recently we've had no "normal" tissue and blood, from women without breast cancer, for comparison. How can you figure out what abnormal is without first understanding what is normal?

The Susan G. Komen for the Cure Tissue Bank at the IU Simon Cancer Center (yes, it's a mouthful) has been established to answer those questions. The only such tissue repository of its kind, it consists of blood and breast tissue samples from women without breast cancer. Yes, women have volunteered to donate blood and even small samples of breast tissue, as well as key medical and personal history information, so that scientists can finally piece together the puzzle that is breast cancer. As new information is discovered, it will be shared openly via an ever-growing "Breast Cancer Encyclopedia" on the Web. By sharing discoveries and data openly, we are bound to accelerate finding the answers -- and the cure.

I am looking ahead (and not too far ahead) to a time when my year-end reflections are of women and their families who no longer have to worry about breast cancer.

-Anna Maria Storniolo, MD

The Catherine Peachey Breast Cancer Prevention Program

The Catherine Peachey Breast Cancer Prevention Program of the IU Simon Cancer Center was created to assess breast cancer risk in women, aid in risk reduction, and provide early detection of breast cancer. The multi-disciplinary program is named in honor of Catherine Peachey who taught us not how to win a battle, but how to fight one. Cathy's wish was that science would progress to a point that would prevent her daughters and family members from walking her path in life. The program is a comprehensive research, treatment, and education program.

Services for women with strong family histories of breast cancer and others who may be at risk include:

- **Genetic Counseling**
- **Genetic Testing**
- **Risk factor assessment**
- **Individualized surveillance plans**
- **Monitoring for signs and symptoms**
- **Chemoprevention**
- **Prophylactic or preventative surgery**

For more information or to schedule an appointment contact Laurie Carlson at 317-278-7576.

Program Mission

1. Providing women and their families' comprehensive multidisciplinary breast cancer risk assessment and the latest prevention strategies.
2. Conducting basic and translational research related to causes and prevention of breast cancer.
3. Educating healthcare professionals, patients, families, and the public about breast cancer detection and prevention.

Breast Cancer Targets

How does your cancer specialist know what drugs to use to treat your cancer, either for early stage disease (adjuvant therapy) or advanced disease (metastatic therapy)? In recent years scientists have developed many targeted therapies. But what are the targets, and how do we locate them in a woman's cancer?

When a woman is diagnosed with breast cancer, her tumor tissue is examined for several proteins. First, the sensitivity of the cancer to hormonal therapy (drugs blocking estrogen's growth effects) is tested by examining estrogen receptor and progesterone receptor content (often abbreviated as ER and PR). If a woman's cancer is ER or PR positive, she is much more likely to benefit from hormonal therapy. Drugs like tamoxifen and aromatase inhibitors block estrogen's effects in these women. If her tumor lacks ER and PR, it is unlikely to respond to hormonal treatments.

Secondly, the tumor is tested for HER2 (Human Epidermal Growth Factor Receptor Type 2). If this protein is present on the breast cancer cell (as occurs about 20% of the time), a woman's tumor tends to be more aggressive, and more likely to spread outside the breast. Fortunately, HER2 also signals physicians to treat the breast cancer with drugs targeting this protein. Two available drugs target HER2 at present: trastuzumab (Herceptin) and lapatinib (Tykerb). Targeting HER2 has led to important improvements in survival for breast cancer patients in recent years.

We are always researching new targets also called biomarkers and drugs that can work on these targets. By knowing what targets each patient's cancer has we can individualize therapy to treat their specific targets.

ExCel
Working together to prevent breast cancer

Worldeide, every 30 seconds another woman is diagnosed with breast cancer. You can help find a way to prevent it. Be part of the ExCel research project.

IU Simon Cancer Center's Breast Care and Research Center is proud to announce its participation in the ExCel trial. This is an international prevention trial geared to confirming the hypothesis that Aromatase Inhibitors (AIs) will be as effective at preventing breast cancer as tamoxifen, with fewer side effects. For more information about the ExCel trial, visit www.excelstudy.com. Women who are 35 years of age or older and at increased risk for the development of breast cancer are encouraged to contact the Catherine Peachy Breast Cancer Prevention Clinic at 317-278-7576 for more information.

Eating Well Through Cancer

By: Holly Clegg & Gerald Miletello, MD

Oatmeal Chocolate Cake

1 ½ cups boiling water
1 cup old-fashioned oatmeal
½ cup sugar
¼ cup canola oil
1/3 cup buttermilk
1 large egg
2 large egg whites
1 teaspoon vanilla extract
1 ½ cups all purpose flour
1 teaspoon baking soda
1 tablespoon cocoa
½ cup semisweet chocolate chips

Preheat oven to 350 degrees. Coat a 9x13 pan with nonstick cooking spray. Pour the boiling water over the oatmeal in a bowl; let stand for 10 minutes. Add the brown sugar, sugar, oil and buttermilk, stir well. Add the egg, egg whites, vanilla, and mix well. In another bowl, combine dry ingredients. Add dry ingredients into the sugar mixture. After mixing, stir in chocolate chips. Pour batter into pan and bake for 30 minutes. Let cool in pan.

This recipe has a good amount of fiber. Fiber helps with constipation that you may experience during treatment. Many pain medications and some chemotherapies can cause constipation. Constipation will decrease your appetite and make you feel bad.

The Charles A. Coltman, Jr.
San Antonio Breast Cancer Symposium
30 Years

This year's San Antonio Breast Cancer Symposium opened with a look at the advances that have been made in the treatment of breast cancer over the past 30 years. Women diagnosed today have half the risk of dying from breast cancer that their mothers had. And with our growing knowledge of how breast cancer works, the risk of dying from breast cancer will only go down.

So what has contributed to the decrease in risk? Chemotherapy is a large contributor. It reduces the risk of death by nearly 50 percent in women under age 50 and by 30 percent in older women. Other drugs such as Tamoxifen have added to the risk reduction. And lastly, combining surgery, radiation therapy and chemotherapy has contributed to a decrease in mortality from breast cancer.

Many of the presentations at the breast cancer symposium focused on the biological aspects of the breast cancer puzzle. This type of research has led to the identification of hormone receptors for Estrogen (ER) and Progesterone (PR) and biomarkers such as HER2. The understanding of HER2 led to the development of the drug Herceptin. Herceptin can be credited with preventing 10,000 breast cancer recurrences per year. This aspect of breast cancer research has proven the need for individualized cancer treatment because not all breast cancers are the same.

This year's symposium had many interesting sessions on these biological aspects of breast cancer. Topoisimerase II alpha (topo IIa) is a gene that can be found on some HER2+ breast cancers. With further study, Topo IIa amplification in a cancer tumor could help doctors identify which chemotherapy drugs will work best at killing the cancer. Another biomarker that is being studied is MDR1/gp170. This marker may be able tell doctors if the chemotherapy a patient has received is working. Many other biological pieces of the breast cancer puzzle are also being studied. And although we may know where many of the pieces are supposed to go, researchers are still trying to fit them all together.

Indiana University was well represented at this year's symposium with multiple poster presentations of our work and trials that have been conducted here. Over the years, our oncologists have focused their research on anti-angiogenesis, the prevention of blood vessel growth to cancer cell. Preventing blood supply should slow or stop the growth of many cancer cells. Their work has lead to the discovery of biomarkers for VEGF and VEGFR-2 (Vascular endothelial growth factor) substances made by cells that stimulate new blood vessel formation. They have also been instrumental in the development and testing of the drug bevacizumab (Avastin), which targets these cells and helps prevent new blood vessel growth to cancer cells.

SABCS is one of the largest meetings specifically focused on breast cancer. In its 30 years, the symposium has grown from 141 attendees to more than 8,000 attendees from 83 countries. The symposium provides information on a wide variety of topics from breast cancer biology to prevention.

Dr. Bryan Schneider presented some of his work on genetic polymorphisms of VEGF and VEGFR-2. He studied tumor tissue from the E2100 trial, which demonstrated an improvement of progression-free survival when the drug bevacizumab (Avastin) was combined with the chemotherapy drug paclitaxel. More information on this trial can be found on pg 7 In the News section Unfortunately, many of the women in this trial who received bevacizumab had increased blood pressure (hypertension). Dr. Schneider and his colleagues were able to identify biomarkers that predicted which women would have severe hypertension. His hope is that with further testing this information can be used to help determine who will derive the most benefit with the least harm from bevacizumab.

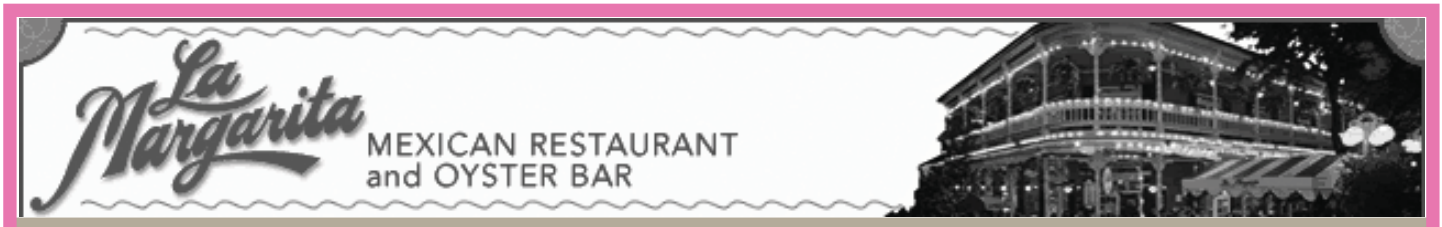
Dr. Kathy Miller also presented data on a trial that used bevacizumab. The E2104 trial combined bevacizumab with a standard chemotherapy regime of dose dense doxorubicin (Adriamycin), cyclophosphamide and paclitaxel (Taxol) also know as AC>T. This study specifically looked at the safety of combining the chemotherapy drugs with bevacizumab. Dr. Miller reported that this combination is safe, although cardiac monitoring and further follow up are important. Dr. Miller has designed a follow-up to this trial, E5103, which is now open to enrollment at IUSCC. E5103 will continue to look at the safety of this combination along with efficacy.

Dr. Monet Bowling and fellow breast surgeons presented data from the study "The Effect of Dedicated Breast Surgeons on the Short Term Outcomes in Breast Cancer." This study looked back at breast cancer surgeries at Wishard Hospital from January 1997 to January 2006. During this time, breast cancer surgeries were initially preformed by general surgeons, and then in July 2003, breast surgeons began performing all breast cancer surgeries. The data demonstrated that more specialized surgeons resulted in better outcomes for patients.

Dr. Mangesh Thorat and colleagues from the IU School of Medicine's Department of Pathology presented results from the study "Characterization of Estrogen Receptor Positive Breast Cancers: Gene Expression Analysis of Archived Tumors." Estrogen Receptor (ER) is one of the most important predictive and prognostic factors in breast cancer. Clinical data also shows that ER and tumor grade are interrelated, however, the exact relationship is not well known. Using a new microarray analysis technique, researchers identified genes that connect ER status with tumor grade. This information should aid in further understanding the biology of breast cancer and help to identify targets for new therapy.

Dr. Laura Norton, chief resident from the IU School of Medicine's Department of Surgery, and colleagues presented a poster on "Differences in Care of Breast Cancer Patients in Underinsured Populations." This study compared breast cancer care at Indiana University Hospital, which serves mostly insured patients, and Wishard Hospital, which serves mostly uninsured patients. Both hospitals are staffed by the same surgeons, oncologists, pathologists, and radiologists; therefore this study looked at patient-related differences. The results demonstrated that patients at IU Hospital were more likely to undergo contralateral prophylactic mastectomy and/or reconstructive surgery, while Wishard Hospital patients were more likely to refuse surgical intervention. Both groups were equally likely to undergo neoadjuvant (before surgery) chemotherapy, but patients at Wishard were only half as likely to receive adjuvant (after surgery) chemotherapy as their counterparts at IU Hospital.

The IUSCC staff is very involved in many aspects of breast cancer research. The San Antonio Breast Cancer Symposium offers not only a forum for us to share our research, but it also a place to learn more about this complex puzzle called breast cancer.



It is not all work when the IUSCC staff is at the SABCS. The "Trek to La Margarita" has become an annual tradition. Everyone makes time to spend an evening at Dr. Sledge's favorite Mexican restaurant enjoying fajitas and margaritas!

Congratulations!

The Breast Cancer Research Foundation awarded more than $32 million in grants to 150 researchers to support scientists at leading medical institutions worldwide who are conducting the most advanced and promising breast cancer research.

The following IU Simon Cancer Center physicians and researchers were named grant recipients:

- Dr. Kathy Miller, an associate professor of medicine hematology/oncology
- Dr. Susan Clare, an assistant professor surgery
- Dr. George Sledge, Ballve-Lantero Professor of Oncology also received the Jill Rose Award for Distinguished Scientific Achievement
- Dr. Anna Maria Storniolo, a professor of medicine hematology/oncology

The Breast Cancer Research Foundation was founded in 1993 by Evelyn H. Lauder and has raised more than $180 million to support research.

Featured Web site

www.curetoday.com

This Web site is a wonderful resource for patients, survivors, and caregivers. The complement to CURE magazine -- which provides scientific information in an easy-to-read and understandable format -- www.curetoday.com is just as easy to read and navigate. Although this site and magazine are not specific to breast cancer, they offer clear explanations of breaking breast cancer news and e-mail updates. They also publish a special breast cancer issue, which is available on the Web site.

Other Features:
-Free subscriptions for cancer patients, survivors and caregivers.
-Find a clinical trial that is right for you. Answer a few questions and receive a listing of trials in which you might qualify.
-Need help with treatment options? This feature provides pros and cons and side effects of each treatment. It also provides you with questions to ask your doctor about each treatment.

For more information about the presentations at the San Antonio Breast Cancer Symposium, check out the Breaking News section at www.curetoday.com. CURE & Heal magazines provided day-by-day coverage of the symposium, with articles on the presentations and videos from many of the presenters.

cure
CANCER UPDATES, RESEARCH & EDUCATION

Tell everyone you know to take one more step on race day to help find a cure!

The Susan G. Komen for the Cure Tissue at IU Simon Cancer Center needs you!

Everyone is invited to donate a blood sample to the Susan G. Komen for the Cure Tissue Bank at IU Simon Cancer Center on April 19th during the Susan G. Komen Indianapolis Race for the Cure. We will be located in Military Park. It will take approximately 30 minutes for women 18 years and older to donate to the bank. Samples will be stored for use by researchers studying breast cancer.

Breast Cancer Q & A

What is the most important thing a women should do to prevent recurrence?

To prevent recurrence, women should optimize their treatment after surgery- whether it be radiation, chemotherapy, anti-estrogen therapy, Herceptin or a combination of these. There are decades of data supporting the positive effects of these therapies.

In terms of lifestyle, the following general guidelines have been shown to decrease recurrence:

- Diet: Adjust diet so that far accounts for no more than 20% pf your total daily calories
- Activity: Moderate exercise ("enough to increase heart rate and break a sweat"), at least 30 minutes 3-5 times per week.
- Limit alcohol intake

What factors would contribute to developing Her-2 cancer in a postmenopausal woman?

Her-2 is a characteristic of the breast cancer itself, like estrogen receptor and progesterone receptor. We do not understand why one cancer is Her-2 positive and another isn't.

What is new for triple negative tumors?

Scientist have recently found that the HER2-, ER-, PR- (triple negative) tumors are genetically different cancers. Much research is currently being preformed to find better therapies for these specific tumors.

Why do breast patients that are hormone negative (Estrogen receptor negative) not take cancer drugs?

ER negative cancer is not affected by estrogen, therefore hormonal therapy does not aid in its treatment. However many patients with ER- tumors do go on to receive therapy which is not hormone based.

In the News.....

Kathy Miller, M.D., associate professor of medicine and Sheila D. Ward Scholar at the Indiana University School of Medicine and a researcher at the IU Simon Cancer Center reported the positive results of the first nationwide clinical study showing the benefits of an antiangiogenic agent in breast cancer therapy are reported in the Dec. 27 issue of the New England Journal of Medicine.

The study with Avastin showed the biggest improvement in metastatic breast cancer ever reported in a chemotherapy-based clinical trial. It nearly doubled the time between initiation of chemotherapy for metastatic disease and progression of the breast cancer tumors. The study, E2100 was coordinated by the Eastern Cooperative Oncology Group (ECOG).

Dr. Miller said she found the results exciting because this was the first study to show that an antiangiogenic agent can delay progression of advanced breast cancer. The study looked at Taxol (paclitaxel), which is one of the standard agents for metastatic disease, with and without the addition of Avastin (bevacizumab).

"This study not only achieved the longest progression-free survival in advanced disease but the therapy achieved that improvement without adding to the day-to-day treatment burden and with only minor increases in toxicity," said Dr. Miller.

"The next step is to move Avastin into the initial treatment of breast cancer in hopes that it will prevent recurrence in the first place," said Dr. Miller.

Avastin is a human monoclonal antibody that acts to reduce the development of blood vessels that feed tumors. Cancer tumors need an increasing supply of blood to grow and the development of the blood vessels to supply the tumor is a process called angiogenesis. Avastin already has been approved by the Food and Drug Administration for treatment of colorectal and lung cancer.

ARE YOU INTERESTED IN LEARNING MORE ABOUT BREAST CANCER?

Sign up to receive the *IUSCC Pink* Newsletter

Name: _____ *E-mail: _____

Street: _____City/Zip: _____
*Newsletters will be sent by e-mail when applicable.

Return to Casey Allen at:
IU Simon Cancer Center
535 Barnhill Drive, RT 473
Indianapolis, IN 46202

INDIANA UNIVERSITY
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INDIANA UNIVERSITY

Clarian Health

Or send an e-mail to calallen@iupui.edu with the above information.

Do you have a story idea or just something to say about a story you've read in *IUSCC Pink*? Tell us about it! Would you like to share a personal experience? Contact us via e-mail calallen@iupui.edu, call 317-274-0594 or send mail to the address above.

Past editions of *IUSCC Pink* can be viewed at the IU Simon Cancer Center Web site, cancer.iu.edu, by selecting breast cancer in the cancer type section (http://cancer.iu.edu/programs/breast/iuccpink/).

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