

Lunch & Learn: Dr. Vogel

What's preventing us from preventing breast cancer?

April 2, 2008

General Information/Dr. Vogel's Thoughts

Magee sees about 1,200 to 1,300 new breast cancer patients a year, which helped influence the decision to open a high-risk cancer center. Magee is a world-class resource for pathology and breast cancer imaging, but also has a lot of clinical activity and committed scientists.

When Dr. Vogel's alarm clock goes off at 5:45 a.m., he hopes one day the radio personality will say "Dr. Vogel, you don't have to go to work today. We figured out breast cancer."

Genetic counseling was mentioned and Dr. Vogel highly recommends genetic counseling if you're the right candidate for it. To find out whether you're a good candidate, you should consult your physician or the Cancer Genetics Program of UPCI.

Current Research

There are two genes, *BRCA1* and *BRCA2* that increase the likelihood that you will get breast and/or ovarian cancer.

In laymen's terms genes are the recipe and the proteins they code for are the gene's products. The proteins do things and make things work, so proteins are studied widely in cancer research. Dr. Vogel states you have to look at proteins in small quantities, one millionth of one billionth of a gram small!

Some questions Magee researchers ask when studying proteins include "Are proteins in the blood of those with breast cancer different than those without breast cancer? Will this signal an increased likelihood of getting breast cancer in the future?"

"We get too soon old and too late smart" is a Pennsylvania Dutch proverb Dr. Vogel says sums up his motivation for doing women's cancer research. Treatment for women's cancers has changed dramatically in the past ten years and although smarter, we are still getting older and there still isn't a cure for women's cancers. He also goes on to state that *nothing* Magee does to treat breast cancer today is the same as twenty years ago. That's progress through research because today's treatments are both safer and more effective.

Some additional research questions posed by Magee researchers include "Why do some women with benign but abnormal cells get cancer? Why do some women respond well to

getting their ovaries removed (in terms of not getting breast cancer after the ovarian surgery) and others don't?"

At one level, breast cancer is about hormones, so one has to ask "Why are some women affected and not others? Why are some women affected before menopause? Why are others affected after menopause?" More recently, the rates of premenopausal breast cancer diagnoses are increasing. "How do hormones get metabolized? is another question being studied at Magee and the University of Pittsburgh Cancer Institute. One way this is being studied is looking at urine samples for estrogen metabolites in women who are at increased risk of developing breast cancer.

One advantage of Magee is that the Magee-Womens Research Institute is across the street from the hospital where patients are seen. The Institute has researchers studying the posed research questions and are seeking answers on microscopic, genetic, and protein levels.

Cocktail Party Facts

Women's bone mass peaks at the age of 30.

By the time a woman is 65, there are as many deaths from hip fractures than there are from breast cancer.

In accordance, you should have 1,200 milligrams of calcium daily to prevent bone loss and reduce the risk of fractures.

Drugs like raloxifene, developed for the reduction of breast cancer risk in a major international study led by Dr. Vogel, are also effective in reducing fractures and preventing osteoporosis.

Question & Answer

Why do clinical research?

Dr. Vogel simply states it's a great way to find better ways of doing things. He goes on to say he's been involved with clinical trials for 20 years. "If you don't do clinical trials, you won't learn anything" he states. Focused, translational trials using material collected from patients are the best way to get information. All treatment drugs for breast cancer have gone through clinical trials. Currently, there are about 36 clinical trials in breast cancer going on at the Women's Cancer Center at Magee.

There are 800 clinical trials today at University of Pittsburgh and 10 Institutional Review Boards (IRB) oversee those trials.

How are clinical trials funded?

- a) pharmaceuticals industry
- b) tax money (i.e. National Institute of Health (NIH), NIH Department of Defense, National Cancer Institute)
- c) the institution because Magee is considered an academic hospital because of the University of Pittsburgh's collaboration
- d) individual gifts

Can you comment on known breast cancer risk factors?

Known breast cancer risk factors only account for 50 percent of breast cancer risk. Half of the women who get breast cancer have no known risk factors other than being women. As far as we know, most environmental exposures don't increase the risk. In Asia, there is a lower risk of breast cancer. Some suggest this is because of something environmental, but whatever it might be has not been identified.

What is Gamma-specific breast imaging?

This is a nuclear medical image of the breast. It doesn't necessarily offer advantages over an MRI or mammogram, and is more costly than a mammogram. It is less expensive than an MRI and is being used by centers that do not have MRI (which Magee has and uses daily). This procedure hasn't been around long enough to evaluate fully. Because this technique is still in the early stages, we may have to wait 10 years to see what happens after tens of thousands of women use this; it may take that long before precise evaluation can occur.

The staff of the Magee-Womens Research Institute and Magee-Womens Hospital of UPMC is working diligently for our patients to find good outcomes without overwhelming side effects. Dr. Johnson explained the benefits of the Women's Tissue Bank at Magee where specimens and data on pre-cancerous and cancerous tissue are collected and stored. This resource will assist in new life-saving and life-preserving discoveries. With concerned donors, we will have the expertise, tools, time, determination and financial support needed to eradicate breast cancer in our lifetime.