The Seventh International Symposium on the Intraductal Approach to Breast Cancer

Pre-symposium Workshop
Crossing the Chasm from Animal Models to Women: Everything You Need to Know

The Dr. Susan Love Research Foundation is committed to advancing research and developing resources that explore the normal breast. As part of this effort, the Foundation hosted The 7th International Symposium on the Intraductal Approach to Breast Cancer in Santa Monica, Calif., Feb. 23-26, 2011.

More than 100 clinicians, epidemiologists, pathologists, basic scientists, translational investigators, and breast cancer advocates from 11 countries attended this year’s conference, “The Normal Human Breast: Building Our Understanding from Mice to Women.”

The conference began with a pre-symposium workshop. This daylong program, “Crossing the Chasm from Animal Models to Women: Everything You Need to Know,” was focused on helping researchers move their research from animal models to humans. It addressed topics ranging from resources for tissue and recruitment to the role advocates can play in translational research and opportunities for funding.

The workshop opened with a panel designed to address the benefits and challenges of research in humans. The first panelist was, Pepper Schedin, PhD, a professor of medical oncology at the University of Colorado, in Boulder, who studies pregnancy-associated breast cancer. She discussed the challenges she encounters collecting the tissue she needs for her research, noting that even when hospitals do collect breast tissue, “they don’t always handle it in the same way, which can cause heterogeneity in tissue that can generate false data.” Dr. Schedin described her experience working with a clinical collaborator who sees breast cancer patients, and she encouraged others to move out of their silos and develop similar partnerships. “Silos are in individual labs and they can also be individual PIs,” she said. “To do translational research, you need to let go of ownership and expand to true team collaborative science.”

Thea Tlsty, PhD, a professor in the department of pathology at the University of California, San Francisco, then discussed the advantages and disadvantages of working with mice and rats. Dr. Tlsty noted that the molecular pathways leading to cancer development differ in mice and humans, and that mice don’t typically get spontaneous tumors. Furthermore, when they do, these tumors are typically estrogen receptor (ER)-negative. Like Dr. Schedin, Dr. Tlsty underscored how hard it can be to get breast tissue from women, noting that she spends about 30 to 45 percent of her time trying to
obtain breast tissue for her group’s research. Melissa Troester, PhD, an assistant professor of epidemiology at the University of North Carolina, Chapel Hill, studies breast cancer genomics and biomarker development in normal breast tissue. Although she has access to the specimens she needs from women who are having breast surgery at her hospital, she emphasized the challenges researchers face in controlling factors related to tissue processing, and, like the other presenters, emphasized the importance of developing collaborations and conducting interdisciplinary research.

In an effort to educate basic scientists on clinical breast cancer, two talks reviewed our current understanding of the disease from the clinical perspective. Leslie Bernstein, PhD, a professor of cancer etiology at the City of Hope in Duarte, Calif., reviewed, “The Epidemiology of Breast Cancer: Opportunities for Prevention.” She discussed many of the known breast cancer risk factors as well as the modifiable risk factors that can affect hormonal patterns that contribute to increased risk. She noted that the latest research suggests that aspirin, green tea, oral bisphosphonates, metformin, and vitamin D might also have a role in risk reduction, but that more studies are still needed. Next, Ellen Mahoney, MD, a breast surgeon at St. Joseph’s Hospital in Eureka, Calif., summarized our current understanding of clinical breast cancer from screening and detection through treatment. The goal of treatment for early-stage disease, she noted, is to keep metastatic disease from occurring. Yet when it comes to choosing treatment, she said, “we are really good at guessing for groups but are terrible for individuals.” As a result, removing the tumor and determining if the cancer has spread to the nodes “is the last point where decision making is clear.” After that, she said, “it’s a probability stew” in which treatment decisions are made based on the tumor’s stage, proliferative rate, grade, estrogen and progesterone receptor status, and HER2 status. Dr. Mahoney noted that patients are often surprised to learn that there is no straightforward answer regarding treatment. “We cure the vast majority of women with breast cancer,” she said, “but we can’t tell them who they are. So many of them have to figure out how to conquer fear, which is the product of this disease.”

In an effort to help basic scientists design research to address current clinical concerns, the next panel focused attention on the research questions that must be answered to move clinical care forward. Dr. Mahoney pointed to the need for primary prevention, ways to determine which DCIS and LCIS needs to be treated and which does not, and better methods of choosing cancer therapies and mitigating side effects. Frank Vicini, MD, a radiation oncologist at the Beaumont Cancer Institute in Royal Oak, Mich., stressed the need for a better understanding of cancer biology and the different types of breast cancer, which would move the field forward and, importantly, provide ways for radiation oncologists, like himself to differentiate between which women will benefit from radiation and which do not need it. Sherry Goldman, MSN, a nurse practitioner and breast cancer advocate discussed the importance of advocate involvement in the breast cancer research process as well as the need for researchers to make their results understandable to the lay public.

Having established the need for research in women which moves from the bench to the bedside, Marion Kavanaugh-Lynch, MD, MPH, director of the California Breast Cancer Research Program (CBCRP), in Oakland, Calif., discussed the current understanding of translational research. Dr. Kavanaugh-Lynch explained that translational research is best thought of as the “missing link” between conducting basic science and making that research applicable for use in
human populations. She emphasized that foundations and programs that are interested in funding translational research are looking for proposals that not only advance our understanding of breast cancer but have an application in human health and solve problems clinicians want answered.

One of the barriers to translational research is the need for tissue, body fluids, and even women for a particular project. This was addressed by a panel representing different resources available to investigators. Susan Clare, MD, PhD, an associate professor of surgery at the Indiana University School of Medicine in Indianapolis opened the session with a presentation on the Susan G. Komen for the Cure Tissue Bank at IU’s Simon Cancer Center, which can provide researchers with blood, saliva, and breast tissue from women who have not been diagnosed with breast cancer. Karen Duvall, MD, MPH, an assistant clinical professor at the University of California, Los Angeles, discussed the 47,000 ductal lavage samples from the Serial Evaluation of Ductal Epithelium (SEDE) study that recently were donated to the Dr. Susan Love Research Foundation. The SEDE study was started to determine the relationship between early cellular changes seen in breast ductal fluid and long-term breast health in high-risk women, but the research wasn’t completed. Dr. Duvall has begun collaborating with the Foundation on a follow up study of the SEDE participants. The last presentation in this session was by Susan Love, MD, president of the Dr. Susan Love Research Foundation. She provided information about the Foundation’s Love/Avon Army of Women, which was specifically developed to help investigators find women (both with and without breast cancer) who are interested in taking part in research studies exploring what causes breast cancer and how to prevent it from occurring.

A second barrier to translational research can be regulatory. Researchers that plan to recruit human volunteers must obtain approval from an Institutional Review Board (IRB) before they can begin their studies. Burt Wilkins, JD, director of Regulatory Affairs for the Western Institutional Review Board discussed the role the IRBs play in protecting the rights and welfare of human subjects and provided information about the procedures required to obtain IRB approval.

Many funders require participation of advocates in the planning and execution of translational research. Most basic researchers have no idea how to find these trained survivors or how best to use them. To address this issue two experienced advocates Michele Rakoff, the executive director of the Breast Cancer Care and Research Fund, and Sandy Walsh, president of the California Breast Cancer Organization, discussed the important role advocates play in developing breast cancer research studies, translating research findings, and disseminating research results.

Zena Werb, PhD, a professor in the department of anatomy at the University of California, San Francisco, gave the final scientific presentation of the pre-symposium workshop. She discussed the similarities and differences between the mammary fat pad in rodents and the breast in women and explained why mice models are good for exploring some specific research questions prior to their translation into women.

The pre-symposium workshop closed with a panel of funding opportunities for breast cancer researchers. This session included presentations by Marc Hurlbert, PhD, the executive director of the Avon Foundation for Women; Marion Kavanaugh-Lynch, MD, MPH, the director of the
California Breast Cancer Research Program; Gayle Vaday, PhD, program manager for the Breast Cancer Research Program, one of the congressionally directed medical research programs at the Department of Defense; and Diana Rowden, survivorship and outcomes vice president at Susan G. Komen for the Cure.

Dr Love concluded the pre-symposium expressing her hope that addressing the barriers and benefits of translational research will encourage more basic scientists to succeed in Crossing the Chasm from Animal Models to Women and accelerate the eradication of the disease once and for all.