SOARNEWS

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Newsletter of the Survivorship, Outcomes And Risk Program at MSK

Experts Discuss Challenges in Triple-Negative Breast Cancer

Symposium Addresses Personalized Medicine in Underserved Communities

In April, MSK hosted a Translational Research Symposium focusing on scientific, clinical and sociological aspects of triple-negative breast cancer. The event brought together experts in basic science, engineering, clinical genetics and community engagement from MSKCC, City College of New York (CCNY) and other local organizations.

Debra Auguste, Professor of Biomedical Engineering at CCNY

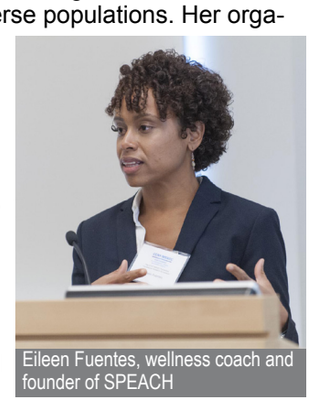
So called "triple-negative" breast tumors are those whose cells have low or no estrogen receptors (ER), low or no progesterone receptors (PR), and low or no HER2 protein expression or gene amplification. Because these cancers are ER- and PR-negative, they do not respond to hormonal therapies such as tamoxifen and aromatase inhibitors. Because they are HER2-negative, they are not candidates for trastuzumab and other HER2-targeted therapies. Women with triple-negative breast cancer have fewer effective treatment options than other breast cancer patients and generally have a poorer prognosis.

In her keynote address, Dr. Debra Auguste, Associate Professor of Biomedical Engineering at CCNY, described molecular mechanisms of targeted therapy and emphasized the distinction between targeted and personalized medicine. Summarizing her comments, Auguste said, "targeted therapy refers to a drug delivery vehicle recognizing an overexpressed receptor present on a diseased cell. In contrast, a personalized therapy refers to a therapy that would benefit a subset of a patient population due to specific traits of that group." Auguste also described a novel potential therapeutic target in triple-negative breast cancer, the intercellular adhesion molecule-1 or ICAM-1.

Joseph Osborne (Radiology) and Melanie Steele (Office of Diversity)

In a discussion following the keynote speech, experts addressed other issues related to triple-negative breast cancer, in particular, the needs of minority women and underserved communities. These issues are critical to improving outcomes in triple-negative disease, which represents 15-20% of all breast cancers in the US, but disproportionately affects African-American women, women under age 50, and those with a *BRCA1* gene mutation. Panelist Michael Berger (Pathology) discussed the use of genetic testing to personalize therapies and the importance of including individuals of different races and ethnicities in clinical research. **Mark Robson** (Medicine) spoke about ways to improve access to genetic testing and personalized therapies in underserved communities, and invited audience members to share their ideas with the group. Eileen Fuentes, founder of SPEACH (Self Promotion Empowerment Advocacy and Care Haven), related her own experience as a breast cancer survivor, and emphasized the importance of linguistic and cultural competence when treating diverse populations. Her organization works to make quality cancer care accessible to all members of underserved communities by building partnerships with healthcare institutions, integrative practitioners and other organizations through specialized lectures, workshops and wellness programs.

Mark Robson, Clinic Director, MSK Clinical Genetics Service



Eileen Fuentes, wellness coach and founder of SPEACH

The symposium, sponsored by a partnership between CCNY and MSKCC, concluded with poster presentations from partnership-funded investigators. Symposium organizers **Francesca Gany** (Immigrant Health & Cancer Disparities), **Tim Ahles** (Psychiatry & Behavioral Sciences) and Karen Hubbard (CCNY) hope the event will lead to action plans for collaborative research in the areas of risk eduction, early detection and targeted treatment for triple-negative breast cancer and other diseases.

National Study Highlights Breast Cancer Heterogeneity

Report Finds Geographic and Racial Variation in Tumor Subtypes

For the first time in its seventeen-year history, the *Annual Report to the Nation on the Status of Cancer* addressed etiologic subtypes of breast cancer. The report, published online in March in *JNCI*, found substantial variation in the prevalence of different breast cancer subtypes among women of varying age, race and geographic region.

In addition to stage classification based on tumor size, lymph node involvement and distant metastases, breast cancers are typically characterized by specific tumor markers; levels of estrogen and progesterone receptors (ER and PR) and overexpression or amplification of the HER2 protein or gene. The recent report analyzed information from breast cancers diagnosed in 2011 in 42 states and the District of Columbia in women younger than 85 years.

Across racial and ethnic groups, hormone receptor (ER or PR)-positive, HER2-negative cancers were the most common, representing almost 73% of all invasive breast cancers. But the age-specific incidence of these cancers varied from more than 90 per 100,000 in some states (including New York) to less than 80 per 100,000 in other states. Consistent with prior studies, the report found that triple-negative cancers – those that are ER-negative, PR-negative and HER2-negative – were most common in non-Hispanic black women, with an incidence of 27 per 100,000, nearly double the incidence in non-Hispanic white women (14 per 100,000). Compared with other subtypes, these cancers have a poorer prognosis and fewer effective treatment options (see article above). The incidence of triple-negative cancers was greatest in the Southeastern US.

The immunohistologic characteristics of breast tumors correspond roughly to subtype categories based on gene cluster analyses, first described in 2000. The four intrinsic subtypes − luminal A, luminal B, HER2-related, and basal-like – vary in their etiology, therapeutic sensitivity and prognosis. According to **Mark Robson** (Medicine), "one value of tumor subtyping is that it allows us to look for epidemiologic risk factors that may play a role in specific types of breast cancer." Robson also noted that there is substantial heterogeneity within the four intrinsic subtypes.

The *Annual Report to the Nation on the Status of Cancer* is a collaboration of the American Cancer Society, US Centers for Disease Control and Prevention, the National Cancer Institute and the North American Association of Central Cancer Registries.

SOAR Grants

Shrujal Baxi (Medicine) and **Talya Salz** (Health Outcomes) and received an R21 grant from the National Cancer Institute for “Simplifying Care for the Complex Cancer Survivor.”

Lisa Diamond (Immigrant Health & Cancer Disparities) received a K07 award from the National Cancer Institute for “Clinician Use of Non-English Language Skills in Cancer Care.”

Andrew Epstein (Medicine) and colleagues at Weill Cornell Medical College received a grant from the National Center on Minority Health and Health Disparities for “Latino vs Non-Latino Disparities in Advance Care Planning & End-of-Life Care.”

Lee Jones (Cardiology) received an R21 grant from the National Cancer Institute for “Phase II Trial of Aerobic Training in Metastatic Breast Cancer.”

Jennifer Leng (Psychiatry & Behavioral Sciences) was awarded a two-year fellowship in the NCI’s program for Mentored Training for Dissemination and Implementation Research in Cancer for her study, “Increasing Lung Cancer Screening Uptake among High-Risk Chinese Taxi Drivers.”

Andrew Vickers (Health Outcomes) received a philanthropic award through a partnership between the Livestrong Foundation and the November Foundation for his project entitled “A Survivorship Action Plan.”

SOAR Seminars

Howard McLeod, Moffit Cancer Center, presented *Using the Genome to Guide Therapy* on April 14th.

Mark your calendar

May 29-June 2	**ASCO Annual Meeting** Chicago, IL
June 14-15	**AcademyHealth Annual Research Meeting** Minneapolis, MN
June 16 4:00PM RRL-101	**SOAR Seminar** Immaculata De Vivo, PhD Harvard School of Public Health
August 8-13	**Joint Statistical Meetings** Seattle, WA

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Predicting Late Effects of Cancer Treatment

Review Finds Few Models to Aid Risk Stratification

Talya Salz

Long-term cancer survivors may experience side effects years after completing treatment, but the risk and severity of late effects vary considerably. In light of this variability, recent recommendations call for risk-stratified approaches to follow-up care in cancer survivors. However, according to a systematic review led by **Talya Salz** (Health Outcomes), there are few tools available to help clinicians predict which cancer survivors are at greatest risk of late effects.

Salz and her colleagues identified 14 studies that described prediction models for nine different adverse effects occurring or persisting at least one year after cancer treatment. Among these, the most commonly studied population was prostate cancer survivors, and the most frequently studied late effect was erectile dysfunction. Other studies evaluated prediction models for lymphedema, cardiac events and psychosocial morbidity in breast cancer survivors; swallowing dysfunction in head and neck cancer survivors; and second cancers in Hodgkin lymphoma and other childhood cancer survivors. Only two of the prediction models were externally validated.

Asked about strengths and weakness of the prediction models she and her colleagues reviewed, Salz emphasized the importance of clinical utility. Models that require only readily accessible information are the most useful to survivorship care providers, who often were not involved in a survivor’s original cancer treatment. She also noted that the value of a prediction model depends on the modifiability of risk for the late effect. For example, cancer survivors with a high predicted risk of cardiovascular disease may benefit from risk-reducing behavior change or medication.

A multidisciplinary group of scientists and clinicians worked with Salz on the systematic review, including several other SOAR investigators: **Shrujal Baxi** (Medicine), **Chaya Moskowitz** (Biostatistics), **Kevin Oeffinger** (Medicine) and **Andrew Vickers** (Health Outcomes). The paper was published online in the *European Journal of Cancer* in February.

SOAR Honors

Deborah Korenstein (Medicine) was appointed the Director of Clinical Effectiveness at Memorial Hospital

Germline Testing Approved for MSK Patients

Protocol Expanded to Include Multi-Gene Panel

The institutional protocol for tumor genetic profiling was recently amended to include germline genetic testing in eligible MSK patients. Part C of protocol 12-245 now allows germline DNA analysis using the multi-gene IMPACT (Integrated Mutational Profiling for Actionable Cancer Targets) panel. Patients who consent to Part A for cancer tissue profiling will now have an opportunity to consent to Part C for germline testing using normal serum DNA.

Only patients seen in the breast, gynecology and prostate cancer clinics are currently eligible to participate in Part C for germline genetic testing. Prior to consent, these patients must view an educational video that explains germline testing. The video features Dr. David Hyman (Gynecology) and fulfills a New York state law requiring informed consent for germline genetic testing. Patients will also be offered genetic counseling prior to consent.

The MSK IMPACT panel is a genomic profiling assay of 410 genes. Only pathogenic mutations in 76 genes associated with inherited cancer susceptibility or high clinical utility will be reported to patients, consistent with recommendations of the American College of Medical Genetics and Genomics. Variants of unknown significance and mutations that do not have implications for the health of the carrier will not be reported. MSK-IMPACT results will be recorded in the electronic medical record and communicated to the patient’s primary MSK physician. Patients and their family members may be offered post-test counseling as appropriate.

Investigators interested in using protocol 12-245 for profiling in a research setting must submit a project plan to Dr. Hyman and the protocol’s clinical research manager. The protocol currently does not allow investigators to re-contact participants for research purposes.

MEET THE REPORTER

Claudia Ayash is a Program Manager in the Immigrant Health and Cancer Disparities Service. She received her MPH degree from New York University. With Francesca Gany, she co-directs the Arab Health Initiative, the only program of its kind in NYC. The initiative aims to reduce health disparities in local and international Arab communities through education, health and social services and community based participatory research.