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Pathology of premalignant breast disease

During the last several years, increased public awareness, advances in breast imaging and enhanced screening programs have led to early breast cancer detection and attention to cancer prevention. The numbers of image-detected biopsies have increased and pathologists are expected to provide more information with smaller tissue samples. These biopsies have resulted in detection of increasing numbers of high-risk proliferative breast disease and in situ cancers. The general hypothesis is that some forms of breast cancers may arise from established forms of ductal carcinoma in situ (DCIS) and atypical ductal hyperplasia (ADH) and possibly from more common forms of ductal hyperplasia. However, this is an oversimplification of a very complex process, given the fact that the majority of breast cancers appears to arise *de-novo* or from a yet unknown precursor lesion. Currently, ADH and DCIS are considered as morphologic risk factors and precursor lesions for breast cancer. However, morphologic distinction between these two entities has remained a real issue that continues to lead to over diagnosis and overtreatment. Aside from morphologic similarities between ADH and low grade DCIS, biomarker studies and molecular genetic testing's have shown that morphologic overlaps are reflected at the molecular levels and raise questions about the validity of separating these two entities. It is hoped that as we better understand the genetic basis of these entities in relation to ultimate patient outcome, the suggested use of the term of borderline breast disease can minimize the number of patients who are subject to overtreatment.

Speaker Biography

Shahla Masood is a Persian-born physician, who currently holds the positions of Professor and Chair of the Department of Pathology at University of Florida College of Medicine. She is the founder and Editor-in-Chief of The Breast Journal, the founder and past president of the "International Society of Breast Pathology," the Director of the "Annual Multidisciplinary Symposium on Breast Disease", "The Breast Cancer Public Forum", and is currently the President of "The World Society for Breast Health." She has been named as one of the Top Doctors in America and one of the 20 Top Professors in Oncology at an international level. Dr. Masood is a patient advocate, a partner in community affairs and an accomplished artist and gourmet chef.

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Sherry Bradford

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Breast cancer and personalized medicine: A perspective on how to improve prudence and pioneer cancer treatment reforms

Cancer, per se, remains one of the most challenging diseases to treat. Indeed, breast cancer is the second leading cause of death among women affecting 1 in 8 women in the USA and the most common cancer among women worldwide. Despite increases in the number of people surviving cancer, there yet exists a vast rift in the number who died each year, despite excepted standard treatment regimens. The challenge of standard and generic treatment modalities, ascribed specifically for the various tumor types in some measure, undermines the ability to achieve remission status as there still remains, in 2017, a persistent and steady risk of recurrence post 5 years of treatment. Unachievable remission status is also attributed to the heterogeneity of tumors. Most cancers are monoclonal in origin however, due to innate genetic instability subsequent cell generations take on new characteristics, creating a heterogenic disease well-defined by genetic clonal expansion complete with epigenetic changes. But, tumors cells are not the only contributors of tumor heterogeneity, as the entire micro environmental constituents and its non-tumorous cells further exert have an absolute influence. Thus, there exists a reciprocal and dynamic interaction between tumor cells, microenvironment constituents and non-tumorous cells that produce a well-defined individualized tumor phenotype. The clinical relevance is that the tumor and its micro environmental components contribute significantly to the efficacy of chemotherapy. Further, drug transporter genetic variants cause population-specific differences in drug transport and therefore impart considerable inter-individual variation in pharmacotherapy and thus clinical response to a myriad of agents. This divergence underscores the necessity of personalizing medicine wherein the data garnered from a person's own cancer is utilized to develop a highly individualized therapeutic regimen that encompasses the totality of the tumor mass. This commentary provides an assessment on the advent, progression, challenges and opportunities of one lab's capability to establish an in-vitro assay with the adeptness to predict in-vivo response. A perspective on how to improve prudence and pioneer cancer treatment reforms is presented to provide insight and provoke ideology.

Speaker Biography

Sherry Bradford has completed her PhD at the New York State University at Buffalo Medical School/Roswell Park Cancer Institute Division. She is the founder and Chief Scientific Director of AccuTheranostics, a premier biotechnology research and clinical laboratory services, located in the heart of Buffalo's Medical Corridor. She has published many papers/book chapters, been an invited speaker at many national/international meetings and is currently serving as an Editorial Board Member of peer-reviewed journals. She holds two patents and three pending.

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