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Breast cancer subtypes overview with emphasis on racial disparities

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Breast cancer remains a common cancer diagnosed in women. Its treatment is currently determined by expression of predictive and prognostic markers ER, PR and HER2. More than 50% of breast cancer are ER+/PR+/HER2- and have the best prognosis, due to effective targeted hormonal therapies and a more indolent clinical course. The two HER2+ subtypes represent approximately 20% of breast cancer and prior to targeted therapy, had some of the worst prognosis. The TNT (triple negative tumor) defined as ER/PR/HER2 negative, comprise 10-30% of breast cancers. It has recently emerged as a highly aggressive subtype arising in younger women, prevalent among some ethnic groups (African-American (AA) and Hispanics) and with no available effective targeted therapy using unsupervised gene clustering TNTs may be further subclassified (basal-like, claudin low, p53 mutated BRCA1 associated etc.), mirroring the different histopathologic appearance, with a range of prognoses and responses to treatment.

At molecular levels they show differential expression, by race, of basal cytokeratin, stem cells markers, claudins, growth factors and proliferative genes. In AA women these tumors show signs of aggressivity: clinically are larger at presentation and have a poor outcome; at molecular level they show higher proliferation activity and p53 expression. The high prevalence of TNT, with their accompanying poor survival and unique protein expression patterns, among younger women and particularly younger AA women suggests varying differences in gene-environment.

This difference between the TNTs in different ethnic groups is of interest in view of their different biologic behaviors, indicating the need for personalized therapy.

Biography

Gabriela Oprea-Ilies has a medical degree from The Institute of Medicine and Pharmacy, Bucharest, Romania. She completed pathology residency at the University of Minnesota, Twin Cities and Cytology fellowship at Emory University, Atlanta, GA. She studied breast cancer with Dr. Schnitt, Collins and Mallory, in Boston. Currently she is a Pathologist, Assistant Professor and Principal Investigator of the breast tissue bank at Emory University, Director of the Immunolab at Grady Memorial Hospital and Adjunct Professor at Georgia State University. She has published in reputed journals, has been reviewing papers and serving in the editorial board member of repute.

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