Researcher Investigates Pathways Regulating Breast Cancer Metastasis

Approximately 10-15% of diagnosed breast cancers are classified as “triple negative.” Triple-negative breast cancer (TNBC) is defined by a lack of the three most common receptors that influence the growth of most breast tumors - estrogen, progesterone, and Her2/Neu. Unlike other breast cancer patients, those with triple-negative breast cancer have not benefited from advances in therapeutics that target these receptors. They do not respond to hormonal therapy (such as tamoxifen or aromatase inhibitors) or therapies that target HER2 receptors, such as Herceptin (trastuzumab).

TNBC is more prevalent in African-American women, occurs more frequently in younger patients, and has an aggressive clinical history, as is evidenced by its rapid progression and shorter life expectancy. Therefore, it is critical to identify novel targets for treating this unique sub-population of breast cancer patients.

Emerging evidence has begun to define pathways that may represent targets for novel therapeutic intervention. Metastasis - or the spread of cancer from one organ or part of the body to another - is ultimately responsible for 90% of human cancer deaths. Dr. Bridgette Collins-Burow, M.D., Ph.D., associate professor of medicine at Tulane, believes the roles and mechanisms of metastasis-regulating pathways present an opportunity to target and control a key feature responsible for the lethality of this disease.

Her work, supported by a recent five-year, $1.7 million grant from the National Cancer Institute, aims to identify a signaling pathway mechanism involved in the suppression of breast cancer metastasis. “The identification of an anti-metastatic mechanism in triple-negative subtype breast cancer would enable us to develop targeted therapy for this population of patients, which could have a profound impact in the clinical setting,” said Dr. Collins-Burow. "This targeting of an anti-metastatic pathway in conjunction with current cytotoxic or targeted therapy could effectively and significantly impact the progression of this disease."

Dr. Collins-Burow's research is also supported by a generous philanthropic donation from Krewe de Pink, a grassroots organization of concerned and passionate individuals based in New Orleans and dedicated to fighting and finding a cure for breast cancer. Their annual fundraiser - The Pink Bra Run - is a 5K walk/run along the Mississippi River levee in Algiers. It will take place on Saturday, May 13, this year - the Saturday before Mother's Day. All participants - men and women alike - are encouraged to costume in pink bras for the event! Visit the Krewe de Pink website - www.krewedepink.org—for fun photos of last year's event and more information on the Pink Bra Run.

"By defining pathways that distinctly regulate breast cancer metastasis, we hope to define novel avenues of therapeutic targeting and earlier interventions that target the primary tumor, preventing the metastatic spread of the disease."

--- Bridgette Collins-Burow, MD, PhD