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Persistent antigenic components of circulating immune complexes, a factor influencing chronic inflammation and poor prognosis in breast tumors

Michael C Ezeani, Charles C Onyenekwe, Samuel C Meludu, Confort A Akujobi, Martin O Ifeanyichukwu and **Ujuamala U Ezeani**
Nnamdi Azikiwe University, Nigeria

Statement of the Problem: The role of microbial agents in development of breast tumors, is not yet fully evaluated. Thus, persistence of microbial antigens as component of circulating immune complexes is considered to be a predisposing factor to chronic inflammation and breast cancer poor prognosis. This study determined the expression of proinflammatory molecules and sex hormones between female subjects with evidence of microbial antigenic components and without microbial antigenic components of circulating immune complexes.

Methodology: Total of 99 female subjects was randomly recruited for this study; 24 subjects with benign; 25 with malignant breast tumors and 50 female subjects without breast tumor. The subjects age rang were 18 to 68 years. Blood sample was collected from the subjects for precipitation and dissociation of immune complexes using polyethylene glycol 6000; characterization of the antigens/antibodies using immunoassay techniques; determination of tumor necrosis factor-alpha, immunoglobulin G, 8-hydroxy-2'-deoxyguanosine, estrogen, progesterone levels and DNA extraction for determination of nuclear factor kappa B, using ELISA.

Findings: Significant expression of immune complexes, nuclear factor kappa-B, immunoglobulin G, tumor necrosis factor alpha, 8-hydroxy-2'-deoxyguanosine, estrogen and progesterone, was seen between the 3 subject groups with combined antigenic components and those with evidence of microbial antigenic components of circulating immune complexes. Only expression of immune complexes, tumor necrosis factor alpha and 8-hydroxy-2'-deoxyguanosine were found at significant levels between the 3 subject groups without microbial antigenic components.

Conclusion & Significance: Presence of circulating immune complexes with or without microbial antigenic components would enhance pro-inflammatory activities and encourage chronic inflammation and poor prognosis in breast cancer. Presence of microbial antigen however would enhance activation of more molecular pathways compared to its absence. The knowledge of microbial or non-microbial antigenic components and their retention in circulation would expose the hidden part of tumor development and the problem of cancer poor prognosis in most environmentally challenged world.

Biography

Michael C Ezeani is basically a Biomedical Scientist with interest in Immuno-oncology in sequence with infection/immunity, inflammation and tumor development. He is a prominent researcher with several publications in the areas of infection, inflammation and tumorigenesis. He is currently, a Senior Staff of Immunology department at the Nnamdi Azikiwe University, Nigeria, where he heads the technical crew. His interest in Circulating Immune Complexes has begun to unfold the intrinsic roles of microbial agents in tumorigenesis and cancer poor prognosis. He is a Member of America Association of Clinical Chemist (AACC), American Association Immunologist (AAI) and American Society for Microbiology (ASM).

mikezeani@yahoo.com

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