Using TMAs (Tissue MicroArrays) to Evaluate GLS, GLUL, and CAV 1 Immunostaining in Breast Cancer

Courtney Finnearty[1], Ayesha Shajahan-Haq[2], Hari Nakshatri[2], George E. Sandusky[1]

[1] Dept. of Pathology & Surgery, IU School of Medicine, Indianapolis, IN

[2]Lombardi Cancer Center, Georgetown University, Washington, DC

Indiana University-Purdue University Indianapolis

Approximately 1 out of 8 women in the United States will develop invasive breast cancer over the course of their lifetime. Breast cancer has a greater potential of being cured if diagnosed in the earlier phases. We evaluated three well-recognized biomarkers, GLUL, GLS, and Cav 1(glutamine synthetase, glutaminase, caveolin-1) in 14 TMA (tissue Microarrays). The tissues were normal breast and various subtypes of breast carcinoma by immunohistochemistry (IHC) to determine expression and localization in cancerous tissues in breast carcinoma cases. Approximately 80 to 90 breast biopsies in each of the 14 breast TMA immunostaining were evaluated with the GLUL, GLS, and Cav 1 antibodies. With GLS, immunostaining was seen in most tumor cells (mainly cytoplasm and nucleus) and the stain was clean with no background except in cases that had lymphocytes in the core along with the tumor cells. With GLUL, immunostaining was seen in most tumor cells (mainly cytoplasm and nucleus) and the stain was clean with no background except in cases that had lymphocytes in the core along with the tumor cells. Cav1 was seen only in the endothelial cells in blood vessel walls and some smooth muscle cells in small arterioles in the stroma and surrounding normal ducts, DCIS, and some invasive carcinoma tumor clusters. This information from the immunostains was obtained after analyzing 14 tissue microarrays which is not only time effective but cost effective when analyzing multiple research cases from cancer patients. The data for the three antibodies are currently being analyzed by the biostatistics core group and correlated with the severity of the breast cancer disease with multiple patient demographics.