

ABSTRACT

Breast cancer is a disease that affects both men and women and currently the leading type of cancer in women globally, commanding a huge social and health impact. Approximately 52.5% of breast cancer cases express estrogen receptors (ER). ER is a receptor proteins type of breast cancer and it fuels growth of breast cancer. ER breast cancer which has been shown to be the most aggressive and misdiagnosed thus, leading to overtreatment. However, it has not been study in Africans Kenyan women. Age is one of the factors that contribute to breast cancer conditions. Women of 40 years and above have been shown to be the most vulnerable group to breast cancer among the Caucasian women. However, it has not been shown in sub-Saharan African women. Metastasis is the spread of primary tumor to the secondary site and it is the major cause of mortality among breast cancer patients. Differential-Related Gene-1 (DRG1) is a suppressor gene that prevents the spread of tumor to the secondary site without affecting primary tumor. Poor prognosis, prediction of recurrence and management of breast cancer in clinics is a major challenge. However, studying the expression of DRG1 as a biomarker in tissue sections in predicting metastasis and recurrence is necessary. This study evaluate the viability of *DRG1* gene as a prognosis biomarker in breast cancer using cancer tumor blocks and determine, the distribution of age, ER and survival rate of breast cancer patients at Moi Teaching and Referral Hospital (MTRH). Using Cochran (1963) formula, a sample size of 37 tumor blocks was used in this study. The tumor blocks were subjected to histological grading to ascertain the presence of a tumor. Immunohistochemistry technique was used to determine the expression of DRG1 and ER. Rabbit polyclonal anti-DRG1 and rabbit monoclonal anti-ER was used in this study. Data were recorded in a form and images captured on a camera. The most affect age group was between 35 and 50 years and vulnerable to breast cancer due to effects of estrogen hormone. Of the total percent breast cancer, 50% were in grade 2 a second stage of breast cancer. 56.8% were ER positive and all the tumor sections tested for DRG1 were all positive. Even though, all expressed DRG1 and clinically proofed to have metastasis, it was not significant statistically as sample size tested did reach calculated sample size. In addition there was no association between age and DRG1 (p value 0.493). Survival rate of breast cancer patients is 2.18 years thus, it's poor. This study guides clinicians in prognosis, treatment and management of breast cancer patients.