

## **GENETIC POLYMORPHISMS IN ESTROGEN METABOLISM ENZYMES IN PATIENTS DIAGNOSED WITH ESTROGEN RECEPTOR POSITIVE BREAST CANCER AT A TERTIARY HOSPITAL IN NAIROBI**

Breast cancer is a deadly disease. It is reportedly the most prevalent type of cancer in females and is the chief contributor of cancer related mortalities in women globally. Estrogen receptor positive (ER+) breast cancer constitutes the highest percentage of breast cancer cases. Estrogen is a key risk factor associated with the ER+. Therefore, its metabolism is fundamental to understanding the aetiology of the disease. Studies carried out on populations of different ethnicities report contradicting findings on the association of genetic polymorphisms of estrogen metabolism enzymes to breast cancer. There is scanty of information on the effects of these polymorphisms and ER+ breast cancer in populations of African descent. This study will employ a hospital based case control design. Study participants will be patients visiting Aga Khan University hospital, Nairobi (AKUH,N). Case and control samples constitute formalin fixed paraffin embedded tissues of women diagnosed with ER+ and benign bloods from women diagnosed with benign blood disorders respectively. The ratio of case: controls will be 1:1. Single nucleotide polymorphisms will be genotyped using PCR-RFLP and sequencing. Association of Genotypes to key risk factors and to clinicopathological characteristics in relation to ER+ breast cancer will be evaluated using the logistic regression analysis. The odds ratio at 95% confidence intervals will be determined. This study seeks to inform on the polymorphisms associated with ER+ breast cancer as well as their relationship to risk factors and clinicopathological parameters and susceptibility to the disease in the patients diagnosed with the disease at AKUH, N. The findings will inform on development of policies as well as public health and medical practices and strategies that will aid in prevention of ER+ in the local population.

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