

The Prevalence of Breast Cancer Molecular Subtypes and Associated Risk Factors Among Women at a Tertiary Hospital in Dar Es Salaam, Tanzania

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ABSTRACT

Breast cancer is the leading cause of cancer deaths among women globally and ranks the second most cause of cancer mortalities among women in Tanzania. In the present study, we provide the first report on the prevalence of BC molecular subtypes and associated risk factors among BC women seeking BC management at a tertiary cancer facility in Dar es Salaam. A hospital-based cross-sectional study consisting of 288 histologically confirmed BC patients was conducted between 2019-2020. IHC characteristics showing ER, PR, and HER-2 statuses, socio-demographic characteristics, anthropometric measurements, and reproductive factors were collected. Chi-square test and one-way ANOVA were used to examine categorical and quantitative variables, respectively. Binary logistic regression was used to estimate the odds ratio and associated 95% confidence interval for the association between risk factors and each BC molecular subtype. The mean age at BC diagnosis was 44.49 ± 10.81 years.

Luminal A was the most prevalent molecular subtype (44.5%), followed by luminal B (22.4%), triple-negative (22.1%), and HER-2 enriched (11%). Invasive ductal carcinoma was the most common histologic type accounting for 89%. Analyses of the association of BC risk factors and molecular subtypes revealed that the age of 40 years was a risk factor for the luminal A subtype. Post-menopausal women had an increased risk of luminal A subtype, whereas premenopausal women had luminal B subtype. Additionally, the age of 30 years was a risk factor for the luminal A subtype. Our study demonstrated that having at least one child and breastfeeding were protective factors against only the luminal A subtype. However, family history of BC or age at menarche showed no association between BC molecular subtypes. Conclusively, most BCs encountered were found to be invasive ductal carcinoma with patients presenting in Stages III and IV. Moreover, we demonstrated that the parity and breastfeeding were protective against the luminal A subtype. It is imperative to improve the awareness of women on the burden of BC, carry out an early screening of BC, and strengthen the women's healthcare system in Tanzania.

