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Breast cancer survival to 5 years among young (<40 years) women in the sub-saharan African breast cancer-disparities in outcome (ABC-DO) cohort study

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ABSTRACT

Introduction. Breast cancer remains a key global health challenge, accounting for most prevalent cause of cancer-related deaths worldwide. The impact of age at diagnosis on breast cancer survival has not been extensively investigated within the African context. Therefore, this study's objectives were to estimate the breast cancer survival time among women <40 years and investigate the factors associated with a 5-year survival differential between younger (<40 years) and older (>40 years) women in the ABC-DO Cohort Study in SSA.

Methods. Secondary data analysis of breast cancer patients from the multi-country ABC-DO Prospective Cohort Study of 5 African countries was carried out. Baseline characteristics of study participants were summarized using descriptive statistics. Kaplan Meier curves were generated to evaluate breast cancer survival time by age group "<40 years, 40-64 years, 65+ years". With the aid of Cox Multivariate Regression Modelling, factors correlated with a 5-year survival differential between younger and older women were investigated and Hazard Ratios were calculated adjusting for confounders.

Results. This study had a total number of 2158 participants, 462 (21.41%) were <40 years at diagnosis, 1314 were between 40-64years (60.89%), while 382 patients were 65 years and above (17.70%). A total of 1211 deaths were recorded at 5 years. The total time at risk and incidence rate at 5 years was 6086.73 person years and 33 per 100 women respectively. The lowest overall survival at 5 years was found among women <40 years (33.46%; CI = 0.28-0.38), followed by women aged 65 years+ (37.63%; CI = 0.32-0.42), and highest overall survival was among women in the 40-64 years age group (42.66%; CI=0.39-0.45). For each country, the 5-year probability of survival was higher among women aged 40-64 compared to women under 40. On Cox multivariate analysis, a 20% rise in mortality was reported among women < 40 years (aHR 1.20; 95% CI= 1.03-1.36) compared to women between 40-64 years in the final model, at $p<0.05$. The variables significantly associated with 5-year survival differential between younger and older women were: HIV status, Residence, and Stage at Diagnosis.

Conclusion. This study reports that breast cancer survival among women in sub-Saharan Africa is age-specific, with lower 5-year overall and country-specific survival among women < 40 years in comparison to older women. Factors associated with lower survival include stage at diagnosis,

HIV status, and area of residence. Young women (<40 years) in SSA remain at risk of increased mortality from breast cancer, hence there is an urgent need for targeted strategies to achieve a more favorable stage at diagnosis and improved survival in this populace.