

## Prediction of Cardiovascular Markers Associated With Aromatase Inhibitors Side Effects Among Breast Cancer Women in Africa

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**Abstract :** Purpose: Aromatase inhibitors (AIs) are indicated in the treatment of hormone-receptive breast cancer in postmenopausal women in various settings. Studies have shown cardiovascular events in some developed countries. To date the data is sparse for evidence-based recommendations in African clinical settings due to lack of cancer registries, capacity building and surveillance systems. Therefore, this study was conducted to assess the feasibility of HyBeacon® probe genotyping adjunctive to standard care for timely prediction and diagnosis of Aromatase inhibitors (AIs) associated adverse events in breast cancer survivors in Africa. Methods: Cross sectional study was conducted to assess the knowledge of POCT among six African countries using online survey and telephonically contacted. Incremental cost effectiveness ratio (ICER) was calculated, using diagnostic accuracy study. This was based on mathematical modeling. Results: One hundred twenty-six participants were considered for analysis (mean age = 61 years; SD = 7.11 years; 95%CI: 60-62 years). Comparison of genotyping from HyBeacon® probe technology to Sanger sequencing showed that sensitivity was reported at 99% (95% CI: 94.55% to 99.97%), specificity at 89.44% (95% CI: 87.25 to 91.38%), PPV at 51% (95%: 43.77 to 58.26%), and NPV at 99.88% (95% CI: 99.31 to 100.00%). Based on the mathematical model, the assumptions revealed that ICER was R7 044.55. Conclusion: POCT using HyBeacon® probe genotyping for AI-associated adverse events maybe cost effective in many African clinical settings. Integration of preventive measures for early detection and prevention guided by different subtype of breast cancer diagnosis with specific clinical, biomedical and genetic screenings may improve cancer survivorship. Feasibility of POCT was demonstrated but the implementation could be achieved by improving the integration of POCT within primary health cares, referral cancer hospitals with capacity building activities at different level of health systems. This finding is pertinent for a future envisioned implementation and global scale-up of POCT-based initiative as part of risk communication strategies with clear management pathways.

**Keywords :** breast cancer, diagnosis, point of care, South Africa, aromatase inhibitors

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