Title: PAM 50 INTRINSIC SUBTYPES IN HIV POSITIVE AND HIV NEGATIVE PATIENTS WITH BREAST CANCER

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BACKGROUND

PAM50 molecular assay has been validated for use in women with early-stage breast cancer, oestrogen +/Her-2 negative, both node negative and positive as a predictive and prognostic tool among postmenopausal women. It has recently been shown to be an independent prognostic tool among pre-menopausal women. So far, no studies have determined the impact of HIV and ART use on the molecular-based intrinsic subtype. Our hypothesis is that HIV positive women have an aggressive type of breast cancer intrinsic subtype.

METHOD

RNA was extracted from 40 breast cancer confirmed FFPEs. 144 age-matched samples from HIV positive & HIV negative women with breast cancer were analysed using the RUO version of the NanoString RUO PAM50 algorithm to determine the molecular subtype of each sample. Associations between the PAM50 subtypes and categorical variables were evaluated by the Fisher's exact test, while associations between the PAM50 subtypes and ordinal variables were evaluated using the Kruskal Wallis test.

RESULTS

HER-2 enriched intrinsic subtype was the commonest subtype accounting for 32.6% of all subtypes, with Luminal A being the least intrinsic subtype. HIV positive patients had a poorer survival than the HIV negative patients. (p=0.047). However, the HIV status had no association with the intrinsic subtypes (p=0.570). Among the HIV positive patients, patients not on ARTs at the time of breast cancer diagnosis were strongly associated with an advanced stage of disease at presentation compared to those who were on ARTs (p=0.011). Neither did ART use nor the duration thereof had any association on the PAM 50 intrinsic subtypes.

CONCLUSION

There was no association between the HIV status, ART use and the duration thereof with the PAM 50 intrinsic subtype. Moreover, the PAM 50 intrinsic subtypes demonstrated that our cohort had aggressive intrinsic subtypes, but this will need to be confirmed with a larger sample.