A RETROSPECTIVE SINGLE-CENTER COHORT STUDY TO EVALUATE TRASTUZUMAB-RELATED SUBCLINICAL CARDIOTOXICITY IN PATIENTS WITH HER2-POSITIVE BREAST CANCER

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BACKGROUND Trastuzumab-based therapy (TT) is standard treatment for HER2-positive breast cancer (HBC). An asymptomatic decline in left ventricular ejection fraction (LVEF) > 10% to < 50% (SCTx), has been reported in up to 30% of HBC patients (pts) receiving TT. The objective of this study was to determine the prevalence of SCTx; associated risk factors (RF); and completion rates (CR) of TT in pts with HBC referred to a cardio-oncology clinic (COC).

METHODS HBC pts receiving TT referred to the Ottawa Hospital COC were included. Demographics, TNM staging, performance status, cardio-vascular (CV) RF (history of heart disease, hypertension, smoking, dyslipidemia, and diabetes), cardiac medications (CM) (ACE-inhibitors, beta-blockers), baseline LVEF, previous cancer therapy, previous radiation therapy (RT) were collected. LVEF was evaluated by ECHO or MUGA. CR of TT among pts with SCTx was determined. Logistic regression analysis was performed for permanent discontinuation of TT, and recovery after SCTx as outcomes.

RESULTS 240/408 BC pts referred to the COC (2008-2016) had HBC and 163/240 (68%) were referred with SCTx while on TT. 139/163 (85%) pts with SCTx recovered after COC assessment: 77/163 (47%) pts were prescribed CMs. A significantly higher proportion of recovery was observed in pts who did not require CM (0.92 vs 0.78, p=0.012; RR=0.85, 95%CI:0.74-0.91). A total of 129/163 (79%) pts who experienced SCTx finished TT. Regression analysis found baseline LVEF, diabetes, and diastolic blood pressure as significant RFs for SCTx. There were no independent predictors for recovery SCTx while on TT. Univariate analysis revealed diabetes (OR:2.97, 95%CI:1.3-6.8) and left chest wall RT (OR:2.4, 95%CI:1.1-5.6) significantly increase risk of permanent TT interruption in pts with CTx.

CONCLUSIONS Most of HBC pts who experience SCTx can safely complete a course of TT; many without the use of CMs. While CV RFs were associated with increased risk of SCTx, this did not affect CV recovery after SCTx. Further studies will identify those pts at greatest risk of permanent cardiotoxicity during TT as these pts may benefit from primary prevention strategies.