A Restrospective Analysis of the Association of Obesity with Anthracycline and Trastuzumab Induced Cardiotoxicity in the Treatment of Cancer

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**BACKGROUND / INTRODUCTION**

- Anthracycline (AC) and Trastuzumab (Tra) have been shown to cause significant cardiotoxicity (CT)
- AC induced CT has been cited as high as 26% when higher cumulative doses were used
- CT is about 3% to 7% with Tra
- CT is defined as patient with documented diagnoses of heart failure on the chart, decrease in LVEF either >15% from baseline or LVEF<50%, or documented acute coronary syndrome after AC or Tra based chemotherapy was initiated
- Doses of AC are calculated based on body surface area (BSA) and for Tra based on body weight
  - Obese patients receive a higher cumulative dose of chemotherapy
- Obesity is inconsistently listed as a risk factor for CT
- We wanted to confirm if there was a link between obesity and CT from AC and/or Tra

**METHODS**

- Retrospective analysis of all patients who have received AC and/or Tra as part of their chemotherapy treatment between 2008 and 2012
- All of the information was collected from MOSAIC, EPIC, and Centricity
- Data collected includes:
  - cancer type, chemotherapy type, dose and duration
  - Age, gender, height, weight, BMI, BSA
  - Creatinine clearance, hemoglobin, albumin, lipids, blood pressure, glucose level
  - Hospital or outpatient evaluations for congestive heart failure or shortness of breath, such as, echo, MUGA, BNP, NT-proBNP, troponin, stress testing, and cardiac catheterization
  - Past heart problems
  - Out of the 215 people that received AC 10.2% got CT
  - Out of 97 people that received Tra 4.1% got CT
  - Out of 23 people who received both AC and Tra 8.7% got CT

**RESULTS**

- Out of the 215 people that received AC 10.2% got CT
- Out of 97 people that received Tra 4.1% got CT
- Out of 23 people who received both AC and Tra 8.7% got CT

**DISCUSSION**

- Age range of patients who acquired CT is 27- 79
- In the cohort without CT only 40% were obese but within the group that developed CT 50% were obese
- Obese patients that developed CT got an average cumulative dose of 498 mg of AC or an average cumulative dose of 15,240 mg of Tra compared to the obese non-CT patients who received an average cumulative dose of 479 mg of AC or 10,434 mg of Tra
- Within the group of patients who had CT there was a high percent of patients with hypertension and/or diabetes


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