Cardiac Replacement Fibrosis in Cancer Treatment Related Cardiotoxicity
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OBJECTIVES/SPECIFIC AIMS: Our goals were to understand the pattern, location, and extent of cardiac replacement fibrosis seen as late gadolinium enhancement on cardiovascular magnetic resonance imaging in a large cohort of cancer patients treated with anthracyclines and/or trastuzumab. METHODS/STUDY POPULATION: We performed a retrospective cohort study of consecutive adult cancer patients treated with anthracyclines and/or trastuzumab from 2004 through 2017. CMRs were analyzed for the presence, location, and pattern of LGE. RESULTS/ANTICIPATED RESULTS: Of 238 patients, 220/(92.4%) had no LGE. Among the 18/(7.6%) patients with LGE, 13/(72.2%) were ischemic in pattern (myocardial infarctions); 10 of these had known coronary artery disease (CAD). Of 5/(27.8%) patients with non-ischemic LGE, the etiologies were known for 4 – myocarditis, cardiac sarcoidosis, eosinophilic myocarditis, and acute myocardial calcification. Only 4/(1.7%) patients had unexpected LGE, of which 3 were unrecognized myocardial infarctions. DISCUSSION/SIGNIFICANCE OF IMPACT: The assessment of fibrosis helps to diagnose the cause of LVSD in cancer patients treated with potentially cardiotoxic medications. This is necessary because currently, the cause of LVSD in cancer patients cannot be established conclusively even though the cause is closely linked to patient outcomes. Our results demonstrate that cancer treatment-related LVSD is not associated with fibrosis. A minority of cancer patients with LVSD have fibrosis related to other reasons, most commonly CAD. Identification of the correct cause of LVSD in cancer patients treated with cardiotoxic medications allows for appropriate treatment. This, in turn, could improve patient outcomes.