

Real World Referral Patterns and Cardiac Toxicity with Immune Checkpoint Inhibitors



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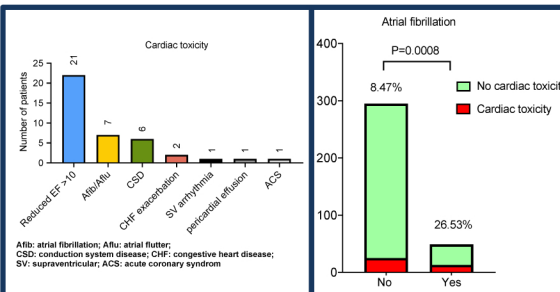
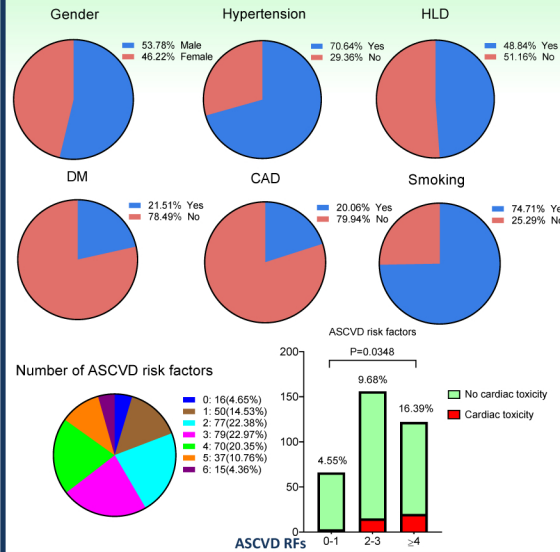
Introduction

- Immune checkpoint inhibitor (ICI) therapy has become popular for the treatment for various malignancies
- Awareness of cardiac toxicity with ICI therapy is increasing
- Risk stratification of patients for potential cardiotoxicity is undefined
- We examined the association of cardiotoxicity with traditional atherosclerotic cardiovascular disease (ASCVD) risk factors (RFs)
- We also evaluated the patterns of risk assessment prior to and while on ICI therapy

Methods

- A retrospective study conducted within our quaternary integrated health network
- Patient receiving ICI therapy from 2017-2019 were included for chart review
- The following information was reviewed and summarized:
 - ASCVD RFs
 - Cardiology office visits
 - Pattern of screening for cardiac disease
- Correlation of these data with incidence of cardiac adverse events

Figures



Results

- Total of 344 patients were reviewed
- ICI was prescribed for lung cancer (50%), melanoma (15%), renal carcinoma (7%), and other malignancies (27%)
- Less than 20% of patients were seen by Cardiology before ICI therapy, despite 81% having ≥2 ASCVD risk factors
- ECG was obtained in 60% and TTE in 37% of patients before ICI initiation, and 63% had at least one ECG or TTE while on ICIs
- Cardiac toxicity presented in 12% of 216 screened patients, and ICI therapy was discontinued in 87 patients, of which 15% due to cardiac toxicity
- The patients with ≥4 ASCVD risk factors (RF) had significantly higher incidence of cardiac toxicity than those with 0-1 RF or 2-3 RF
- Incidence of cardiac toxicity was also significantly higher in patients with underlying atrial fibrillation (27%) than those without (8%)
- Of the cardiac toxicity, reduce ejection fraction was the most common (21 cases), followed by new onset atrial fibrillation (7) and conduction system disease (6)

Conclusions

- Referral to cardiology and monitoring for cardiotoxicity were uncommon in patients receiving ICI therapy, despite the high prevalence of ASCVD in this population
- The incidence of cardiac toxicity is higher than previously perceived especially in the patients with multiple ASCVD risk factors and often the reason for ICI discontinuation, warranting close surveillance during therapy