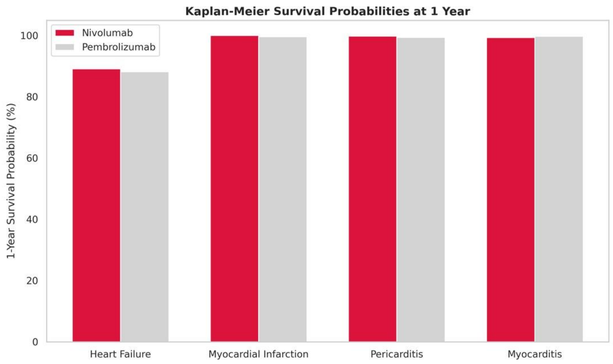
Much the Same: A Retrospective Analysis of Cardiovascular Side Effects in Patients With Non-Hodgkin Lymphoma Treated With Nivolumab Versus Pembrolizumab

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Introduction

- PD-1/PD-L1 is a receptor-ligand pairing used to promote immunotolerance in activated T-Cells by native tissue
- Immune checkpoint inhibitors (ICIs) interfere with PD-1/PD-L1 pathways, preventing tumor tissue from evading the immune system
- Despite clear oncologic benefits, immune-related cardiovascular adverse events remain a concern
- Comparative data on cardiotoxicity between nivolumab and pembrolizumab in non-Hodgkin lymphoma (NHL) are limited

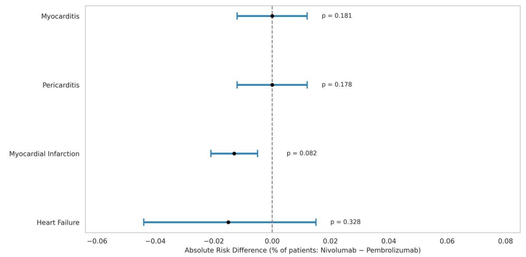


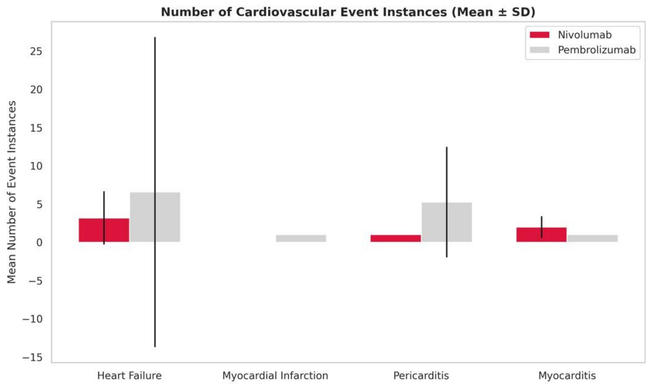
Methods

- Retrospective cohort study using TriNetx database
- Population: Adults with NHL treated with nivolumab or pembrolizumab
- Exclusions: Pre-existing viral myocarditis, ischemic heart disease, congenital heart defects
- Outcomes: Myocarditis, acute myocardial infarction (MI), pericarditis, cardiomyopathy, heart failure
- Analyses: Risk difference (RD), risk ratio (RR), odds ratio (OR), and Kaplan-Meier survival analyses

Results

- Heart Failure: RD -0.015 (95% CI -0.044, 0.015), p = 0.328
- Myocardial Infarction (MI): RD -0.013 (95% CI -0.021,-0.005), p = 0.082
- Pericarditis: RD 0.000 (95% CI -0.012, 0.012), p = 0.178
- Myocarditis: RD 0.000 (95% CI -0.012, 0.012), p = 0.181





Discussion

- After propensity matching, there's no clear between-drug difference for HF, pericarditiis, or myocarditis in a 12 month period following starting therapy
- MI finding is a rare event, possibly contributing to wide error margins
- Outcomes defined by diagnosis codes, where misclassification is possible
- Low event rates (myocarditis, pericarditis, and MI) may limit power and precision
- Lack of NHL histologic subtype, concomitant, cardiotoxic therapies, biomarkers (troponin, BNP, CRP), and imaging confirmation

Conclusion

- Nivolumab is no more likely than pembrolizumab to produce heart failure, MI, pericarditis, nor myocarditis in Non-Hodgkin Lymphoma patients
- Current use of Nivolumab in these cases is off-label, so further research is necessary to evaluate for its utility



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