

Control Number: 17

Abstract Category: Clinical Case Challenge in Cardio-Oncology

Title: A Case of Early Immune Checkpoint Inhibitor Myocarditis Detected on Routine Troponin Monitoring

ABSTRACT BODY

Background and Purpose

Immune checkpoint inhibitor (ICI) myocarditis, a serious side effect of immunotherapy used to treat advanced cancers, ranges in presentation from subclinical to fulminant myocarditis. Although retrospective data suggests that elevated troponin is found in up to 94% of patients and is associated with worse CV outcomes, routine screening with troponin levels is not standard practice. Here, we present a case of early myocarditis after ICI detected on routine troponin monitoring.

Case Description and Outcomes

A 76-year-old male with stage III lung adenocarcinoma and no cardiac history received standard radiation/chemotherapy followed by initiation of the immune checkpoint inhibitor durvalumab 10 mg/kg biweekly. Routine 10-week labs at fifth cycle of durvalumab showed a troponin of 1.232 ng/mL (ref <0.055 ng/mL), with no baseline for comparison. The patient declined admission as he was asymptomatic. A repeat troponin one week later was 0.145 ng/mL; a transthoracic echocardiogram (TTE) detected a left ventricular ejection fraction (LVEF) of 56% and no wall motion abnormalities. A cardiac MRI detected abnormal delayed myocardial enhancement (DGE) in the basal anterolateral wall, suggestive of myocarditis. One week later, patient's troponin prior to sixth cycle of durvalumab was 10.394 ng/mL. He was admitted for coronary evaluation, although he remained asymptomatic. A CT coronary angiogram showed no significant coronary artery disease (with calcium score of 0). A repeat TTE demonstrated LVEF 59% and new inferior/posterior wall hypokinesis with a pericardial effusion. His troponin peaked at 10.666 ng/mL and downtrended to 5.842 ng/mL over 24 hours on prednisone 60 mg daily. He was discharged with a six week prednisone taper with weekly labs. Two months after discharge, patient remains free of cancer progression off immunotherapy, with undetectable troponin (<0.017 ng/mL) and a follow-up cardiac MRI showing stable area of DGE.

Discussion

Significant cardiac biomarker elevations may be seen in patients receiving immunotherapy without overt clinical signs and symptoms. A high level of attention is required, given that the delayed initiation of steroids may lead to higher rates of MACE. Routine biomarker monitoring may detect cases of subclinical myocarditis with early imaging signs of myocardial dysfunction and improve cardiac safety for patients on immunotherapy.

References

N/A