

NOVEL IMMUNOTHERAPIES AND ASSOCIATED CARDIOTOXICITIES

Cardiac Side Effects

All of the following cardiac side effects can be seen with any novel immunotherapy:

- Cytokine release syndrome
- Hypotension
- Tachyarrhythmia (non-sustained ventricular tachycardia, which is observed frequently with use of CAR T-cell therapy)
- Left ventricular dysfunction
- Troponinemia (elevated troponin T)
- QT prolongation
- Acute pulmonary edema
- Cardiogenic shock

Patient Risk Factors

- Advanced age
- Prior cardiotoxic chemotherapy/immunotherapy
- Radiation therapy
- Hypertension
- Hyperlipidemia
- Diabetes
- Prior CAD
- Smoking
- Family history

Monitoring/Management Strategies

- Monitor patient symptoms
- Monitor cardiac biomarkers (hs troponin T, NT-proBNP)
- Monitor imaging indices including ejection fraction, strain per echocardiogram
- Refer to cardio-oncology or cardiology