

How to Screen for Cardiotoxicity

Susan C. Gilchrist, MD

Associate Professor

Clinical Cancer Prevention & Cardiology

THE UNIVERSITY OF TEXAS

MDAnderson
Cancer Center

Making Cancer History®

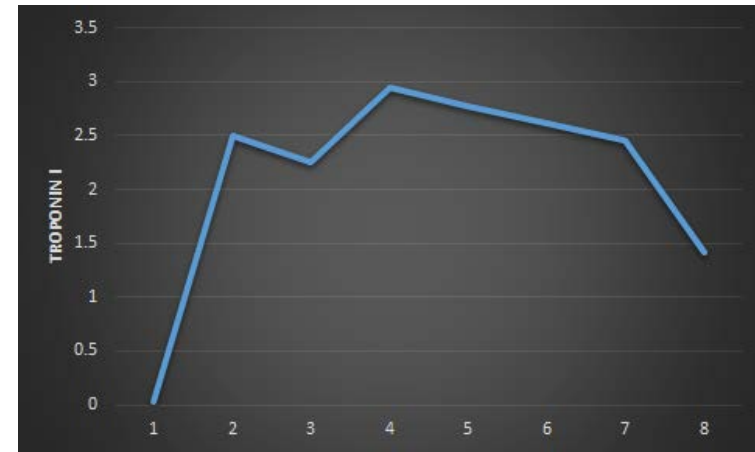
Current Screening Techniques: Immune-Mediated Cardiotoxicity

1. Electrocardiogram (EKG)
2. Blood-based imaging
3. Echocardiogram
4. Cardiovascular magnetic resonance (CMR)
5. Invasive endomyocardial biopsy (EMB)

Blood-based Biomarkers: Immune-mediated Myocarditis

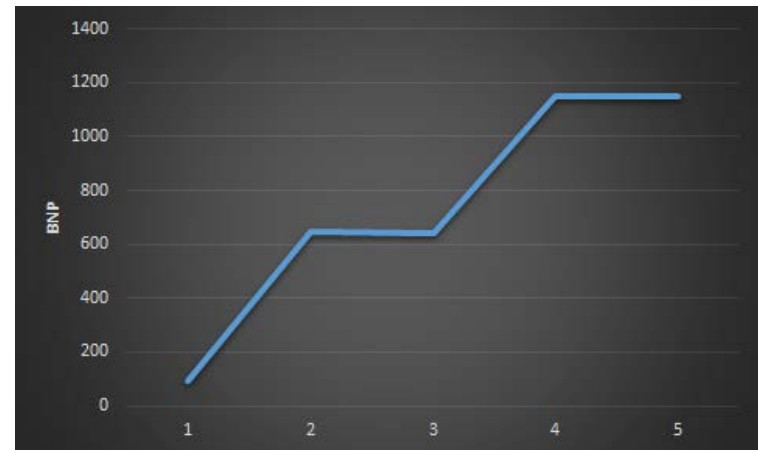
- **Cardiac-specific biomarkers**

- Troponin-I
- Troponin-T

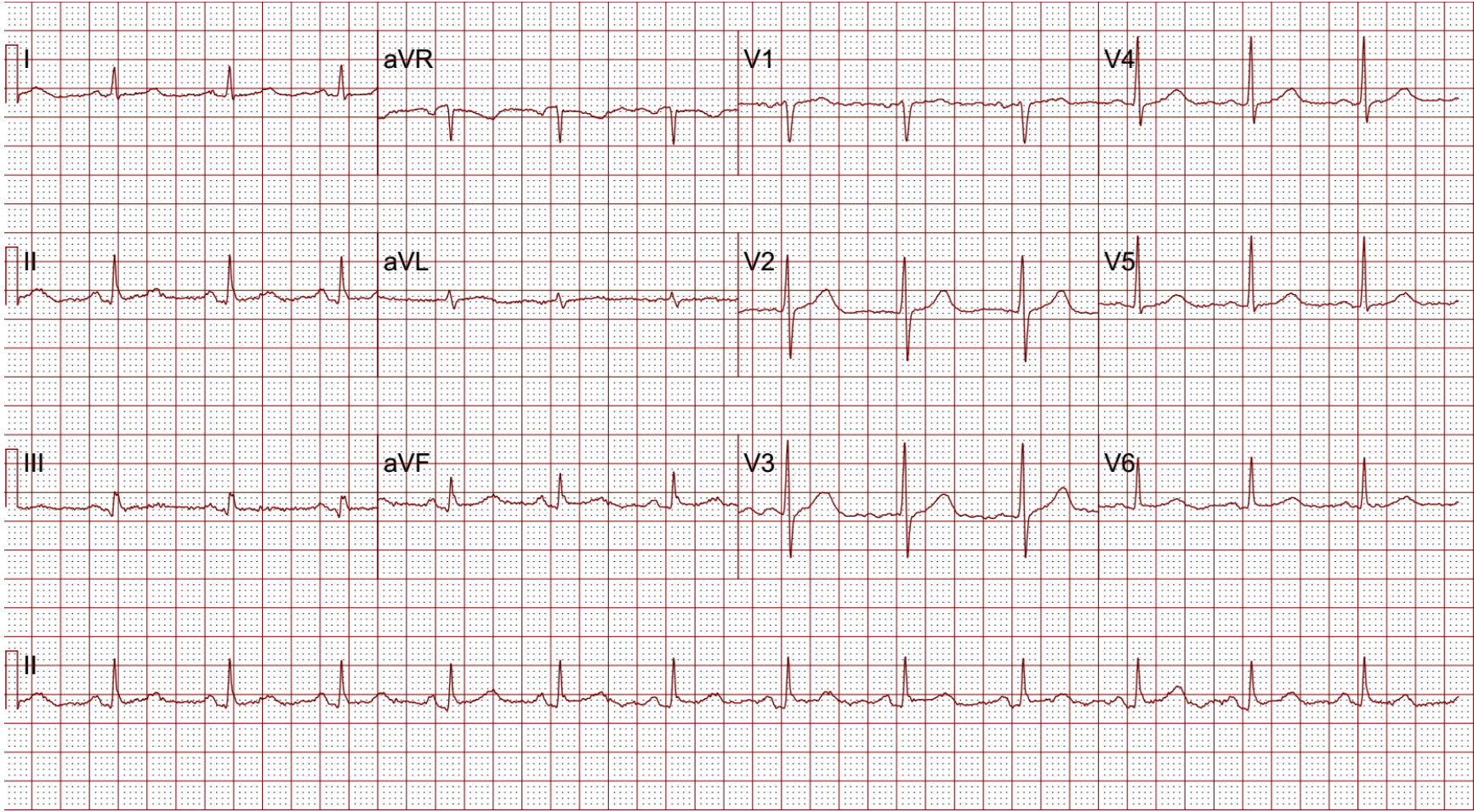


- **Biomarkers of myocardial stretch**

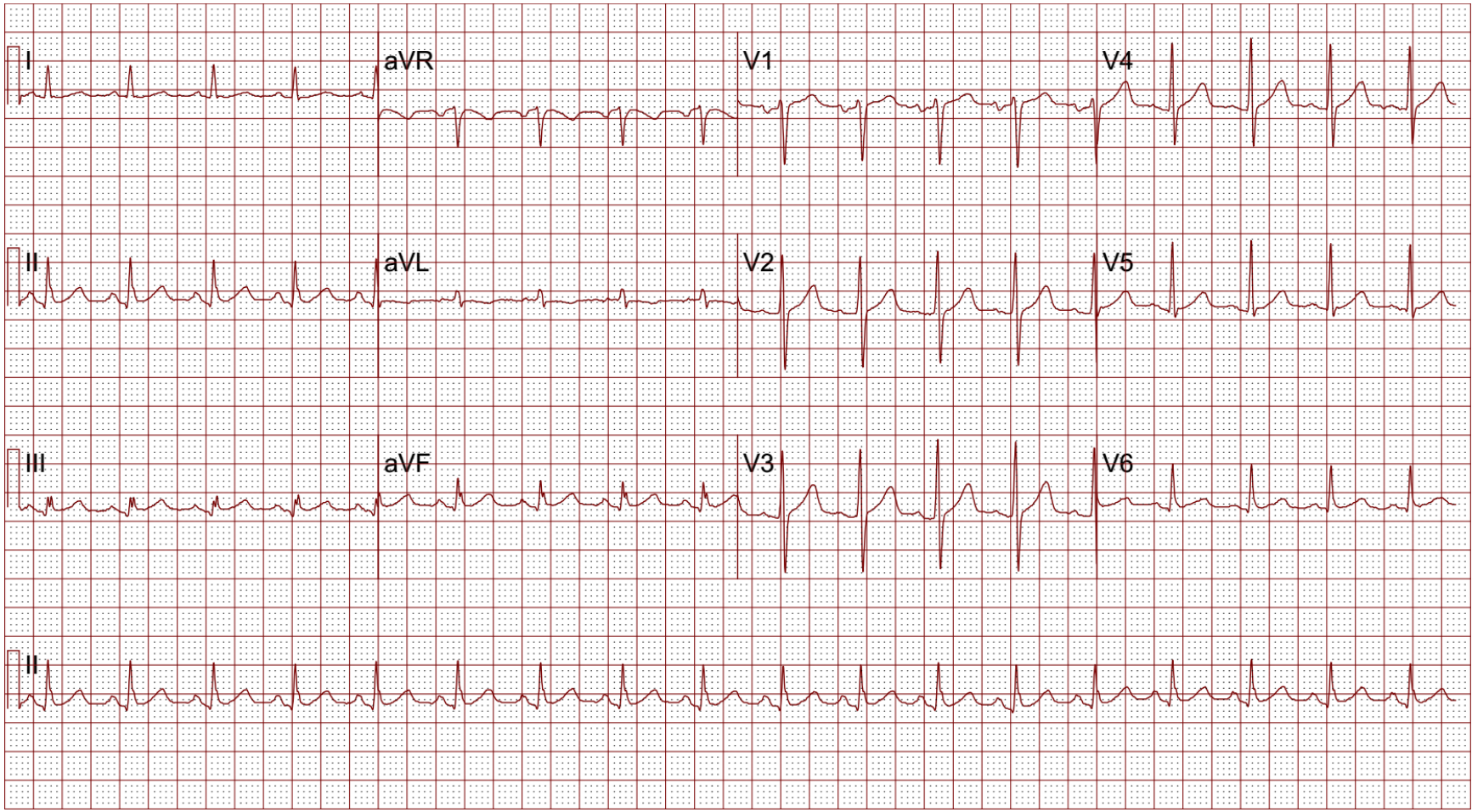
- BNP
- NT-proBNP



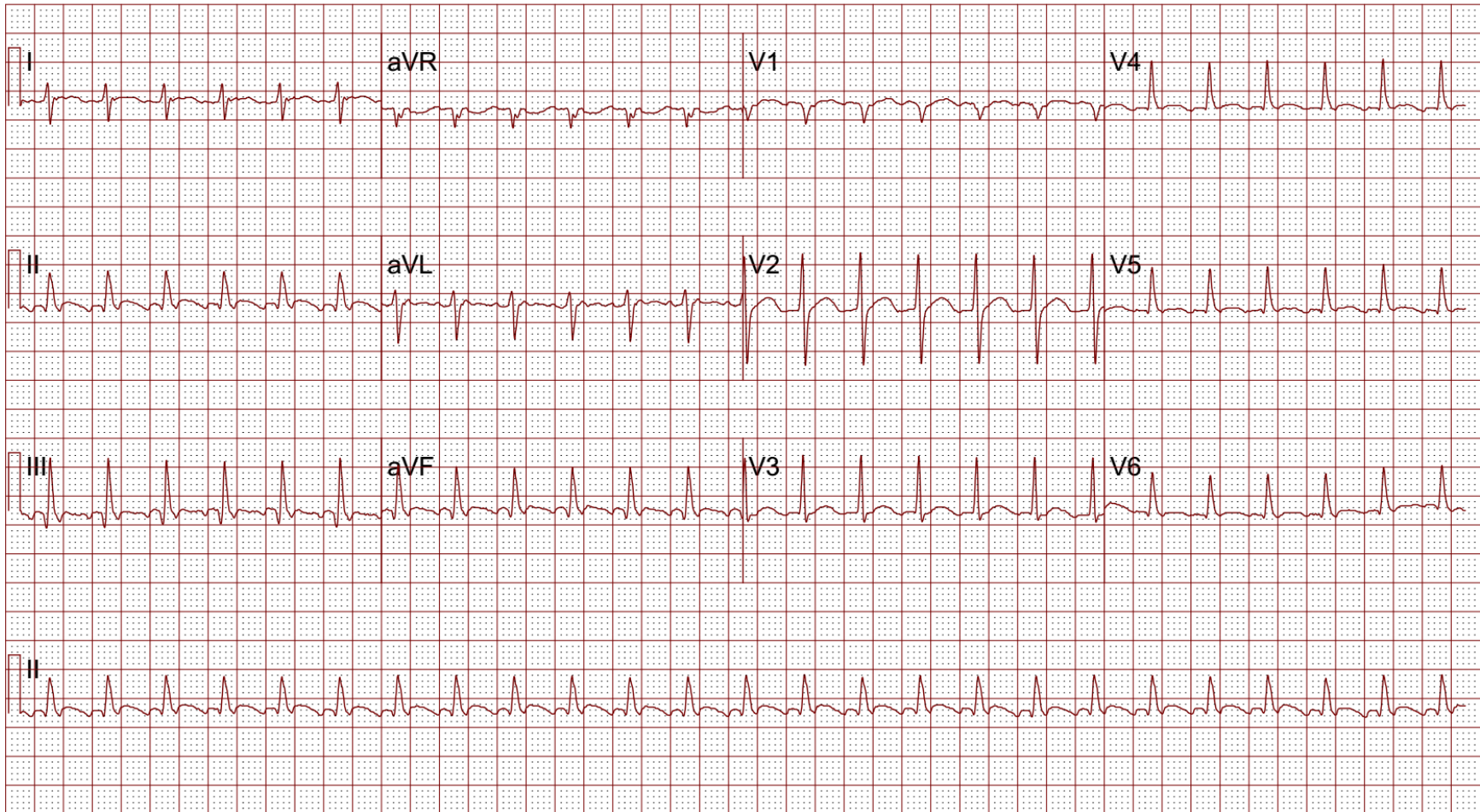
EKG Progression: Immune-Mediated Myocarditis



EKG Progression: Immune-Mediated Myocarditis



EKG Progression: Immune-Mediated Myocarditis



Echocardiographic Findings: Immune-Mediated Myocarditis

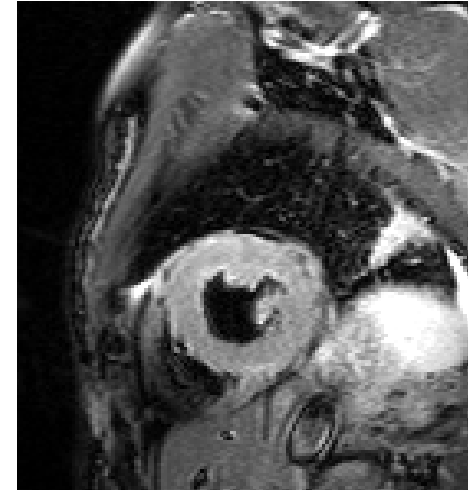


Echocardiographic Findings: Immune-Mediated Myocarditis

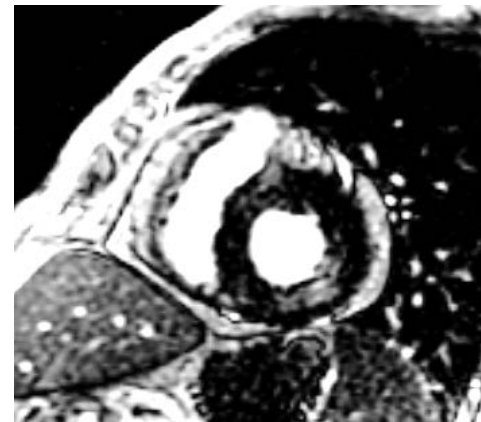


Lake Louise Criteria: Myocarditis

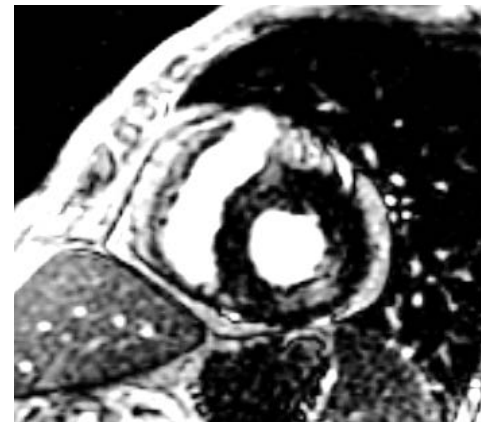
- Increased global myocardial early gadolinium enhancement relative to skeletal muscle



- Regional or global signal intensity increase in T2 weighted images



- At least one focal lesion with non-ischemic regional distribution on late gadolinium enhancement

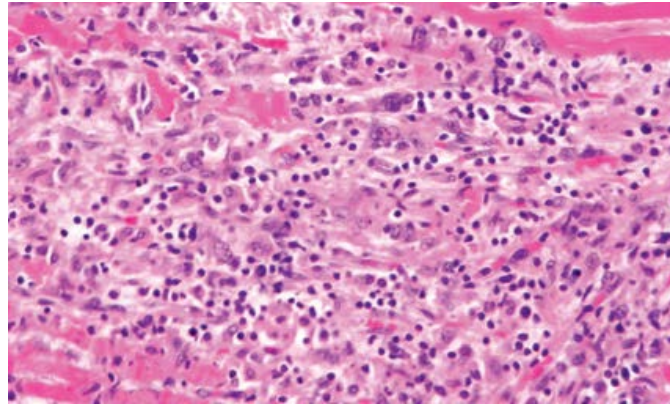


CMR Finding Immune-Mediated Myocarditis

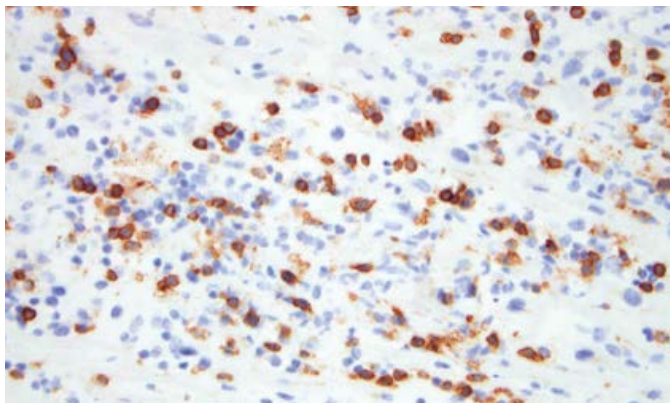


Endomyocardial Biopsy Findings: Immune-Mediated Myocarditis

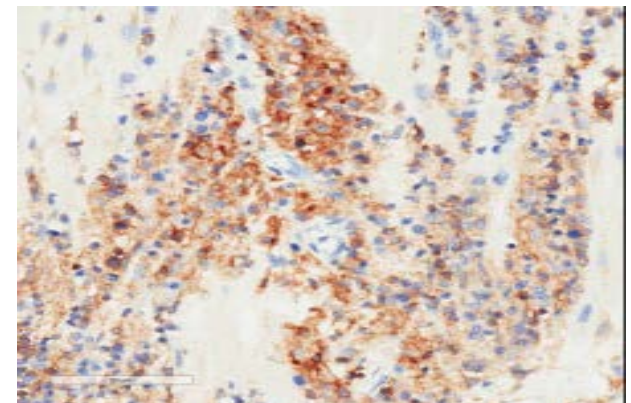
Lymphocytic
Infiltration



CD8+ T Cells



CD4+ T Cells



Proposed Screening Algorithm

