

Heart Failure and HIV

Chris Longenecker, MD

Associate Professor of Medicine

Division of Cardiology & Dept of Global Health

University of Washington

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Disclosures

Theratechnologies: Advisory board

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Disclaimer

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Data Considerations

Data in this presentation offer a limited perspective of how systemic, social, and economic factors impact health. We recognize that racism, not race, creates and perpetuates health disparities.



To Learn More:

<https://www.cdc.gov/minorityhealth/racism-disparities>

Case #1

- 50 yo man with history of HIV, DM, and methamphetamine use disorder
 - 2018 - Initial presentation ADHF (EF <20%, non-obs CAD)
 - Variable compliance with outpatient follow-up
 - 2021 - Cardioembolic stroke (LV thrombus)
- Care transferred to HMC
 - HIV care @ MAX Clinic (low barrier to care clinic)
 - CVD care @ HMC
 - HIV + CVD contingency management

Case #1

- Initial GDMT @ first HMC Cardiology
 - Losartan 25
 - No BB, MRA, or sGLT2i
- Next 12 months at HMC
 - 35 office visit encounters with cardiologist, RN, clinical pharmacist
- Current GDMT
 - Losartan 150
 - Metoprolol Succinate 100
 - Spironolactone 25
 - Empagliflozin 10

EF now
55%!

* But elevated PA systolic pressure and RV dysfunction

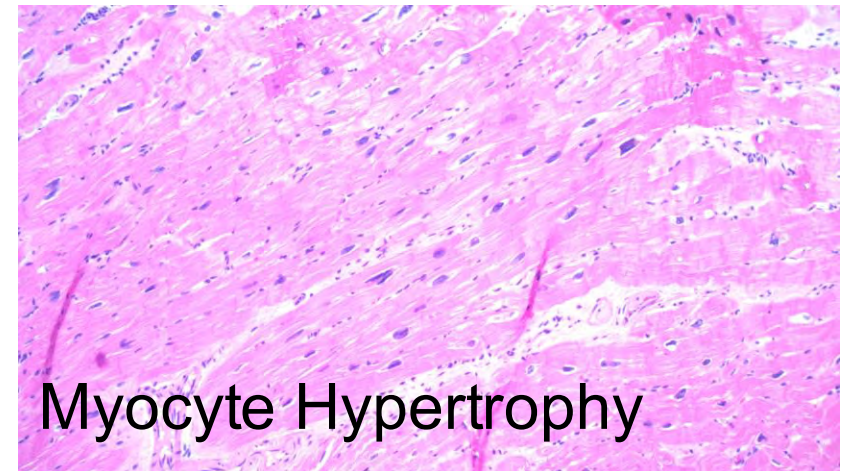
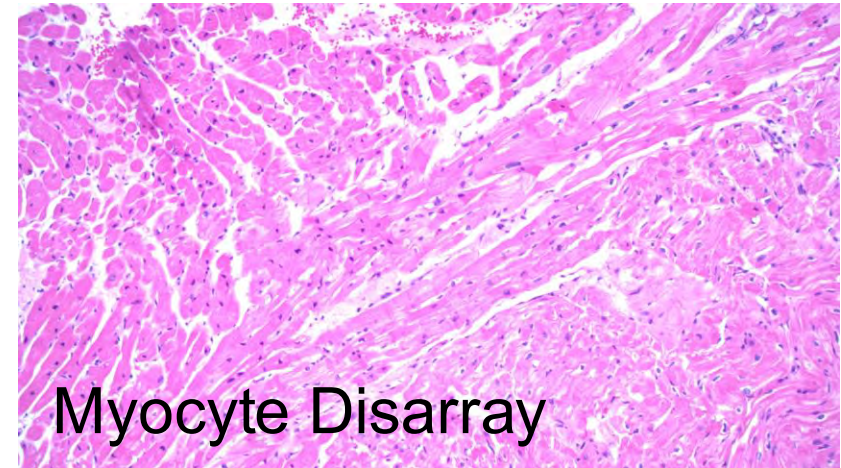
- * No recent HF hospitalization
- * On ART and engaged in HIV care
- * Meth use reduced but not completely

Case #2

- 36 yo AA woman with HIV on ART (CD4+ 255, nadir 2, VL <50 on EFV/TDF/FTC)
- 12 hours of 10/10 stabbing chest pain, +dyspnea, +nausea/vomiting.
- History of “severe hypertension”, active tobacco & cocaine use, and obesity (BMI 45)
- On exam: BP 119/73, HR 89. JVP >15cm. 4/6 systolic murmur worse with squatting and Valsalva.
- Initial troponin 0.15; increased to 0.16 ng/m
- Echo with LVH. Treated as “HFpEF”

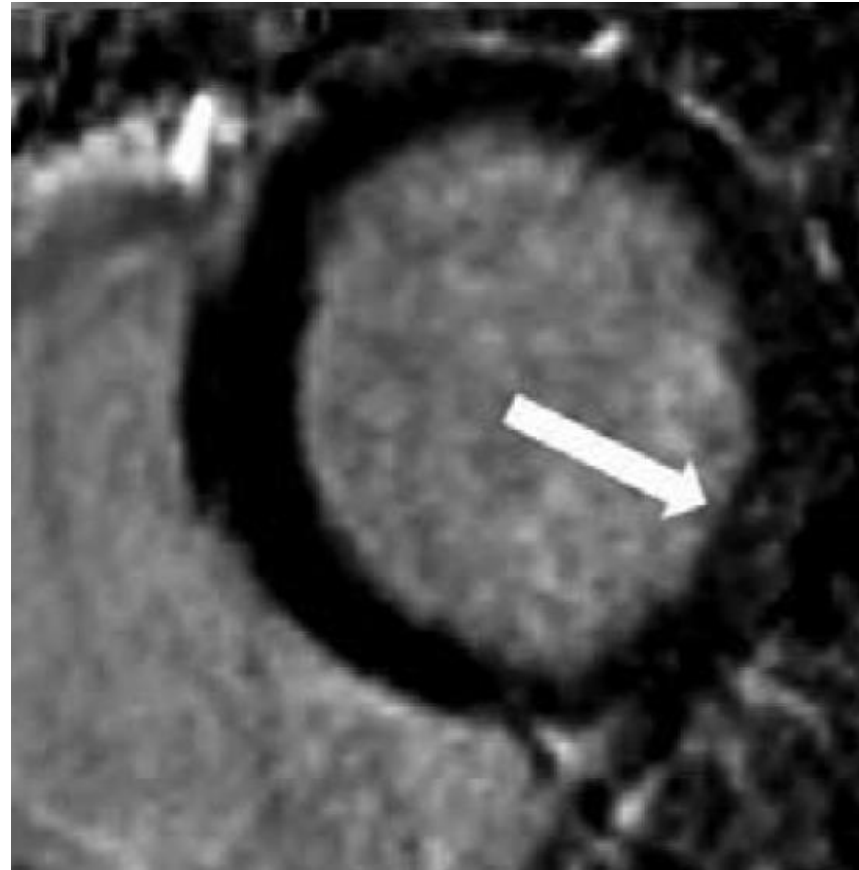
Case #2

- 17 hospitalizations over 6 years for chest pain and/or decompensated heart failure
 - Troponin typically 0.2-0.8ng/mL
 - Cardiac MRI → replacement fibrosis and septal hypertrophy consistent with HCM
- Septal myectomy
 - Complicated by complete heart block requiring a pacemaker
 - Post-operative pericarditis

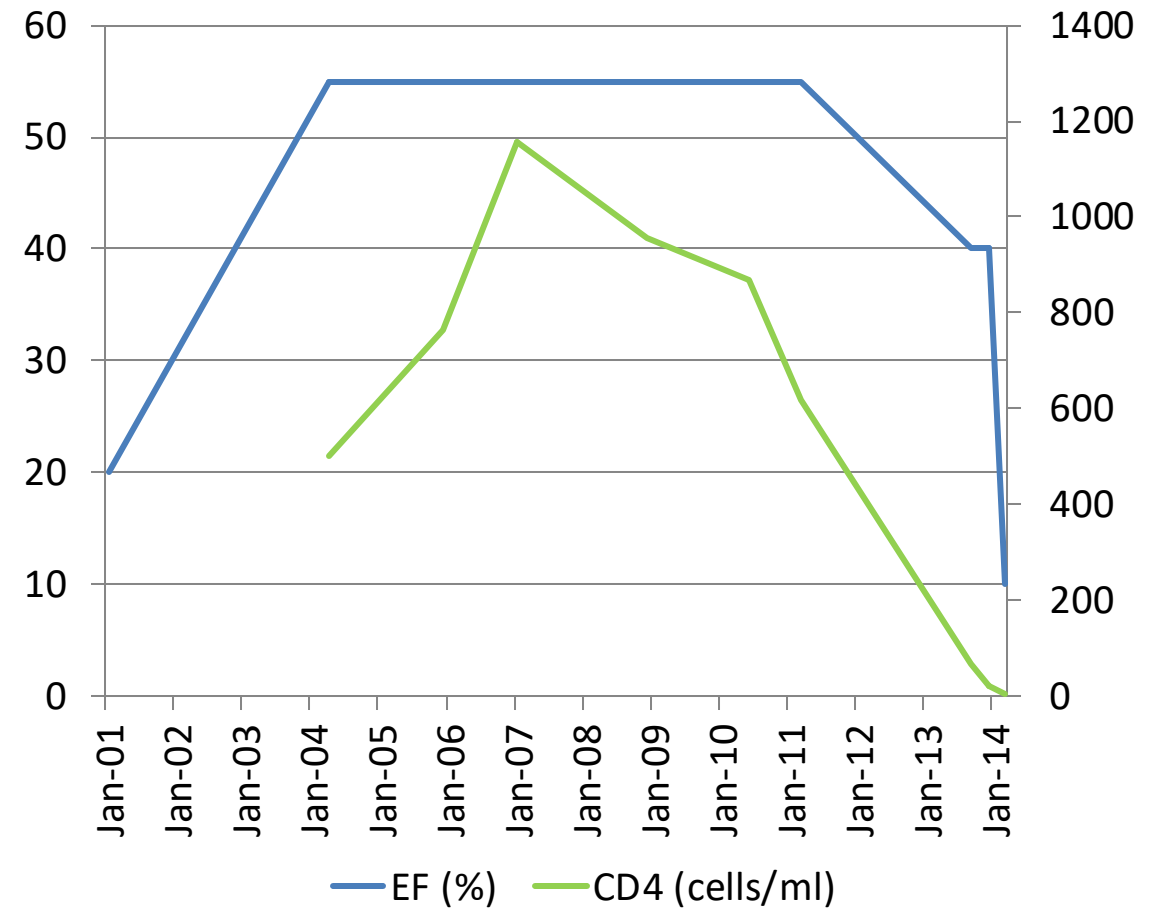
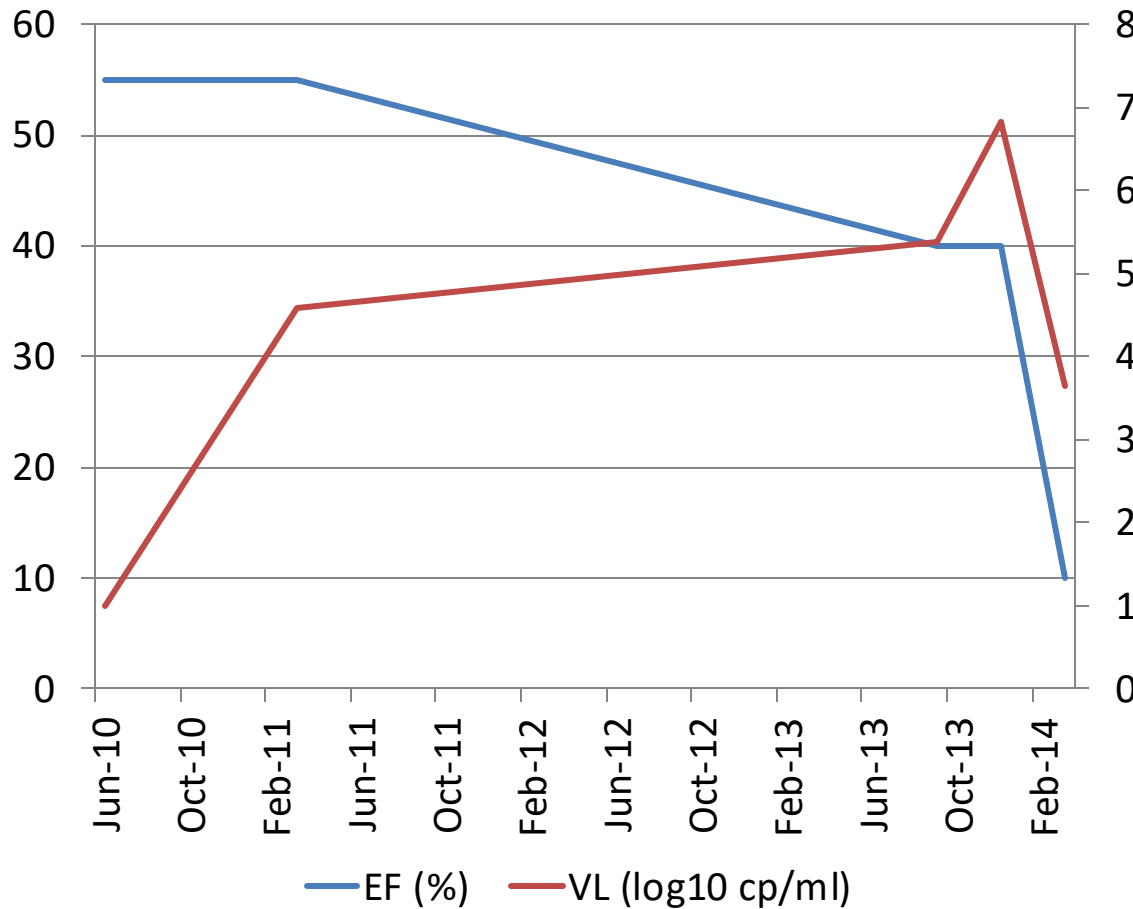


Pre-ART “AIDS Cardiomyopathy”

- **Primary Myocarditis**
- **Secondary Myocarditis**
 - “Innocent bystander effect” from inflammation
 - Secondary infections (CMV and cryptococcus)



HIV Cardiomyopathy may improve with ART

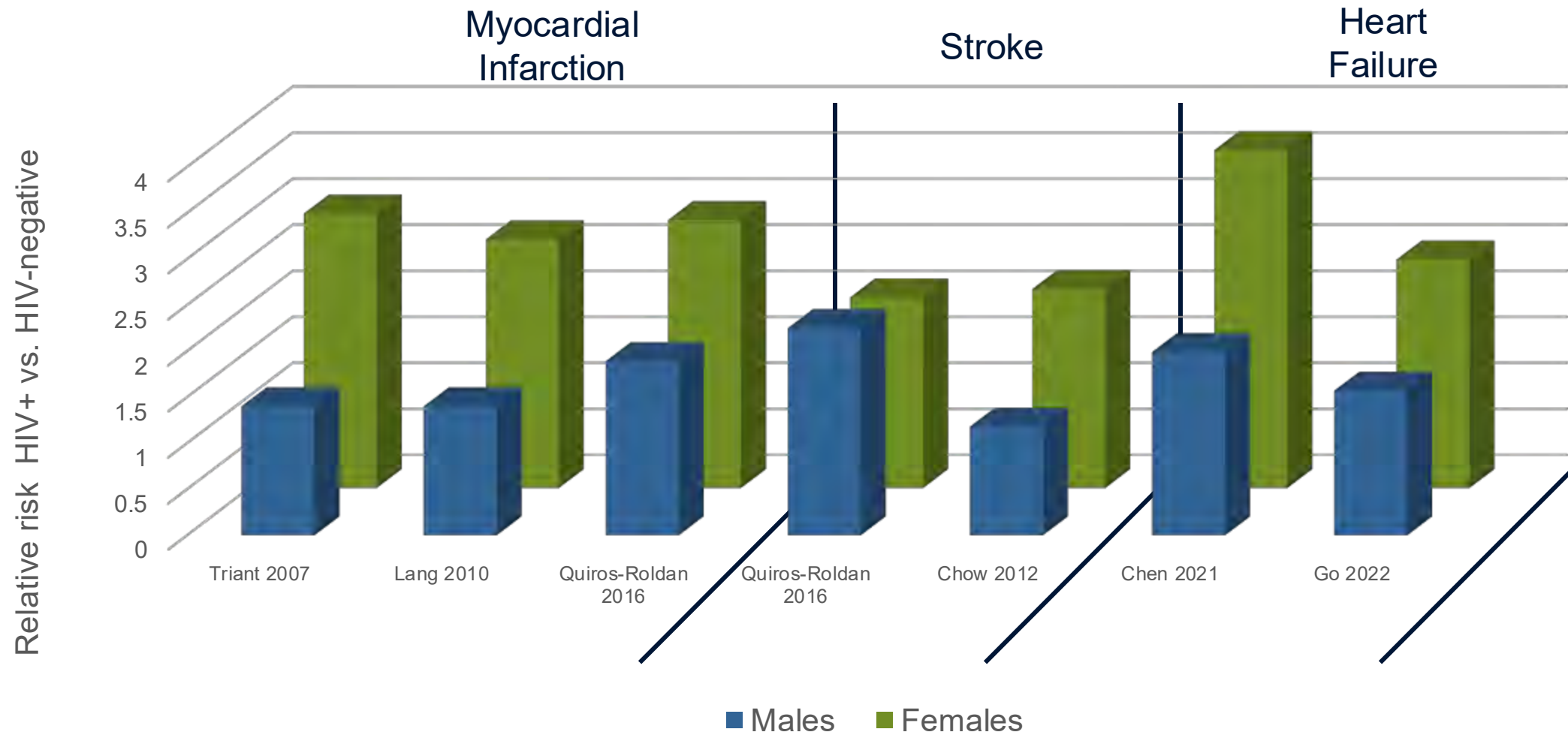


Association Between HIV Infection and the Risk of Heart Failure With Reduced Ejection Fraction and Preserved Ejection Fraction in the Antiretroviral Therapy Era

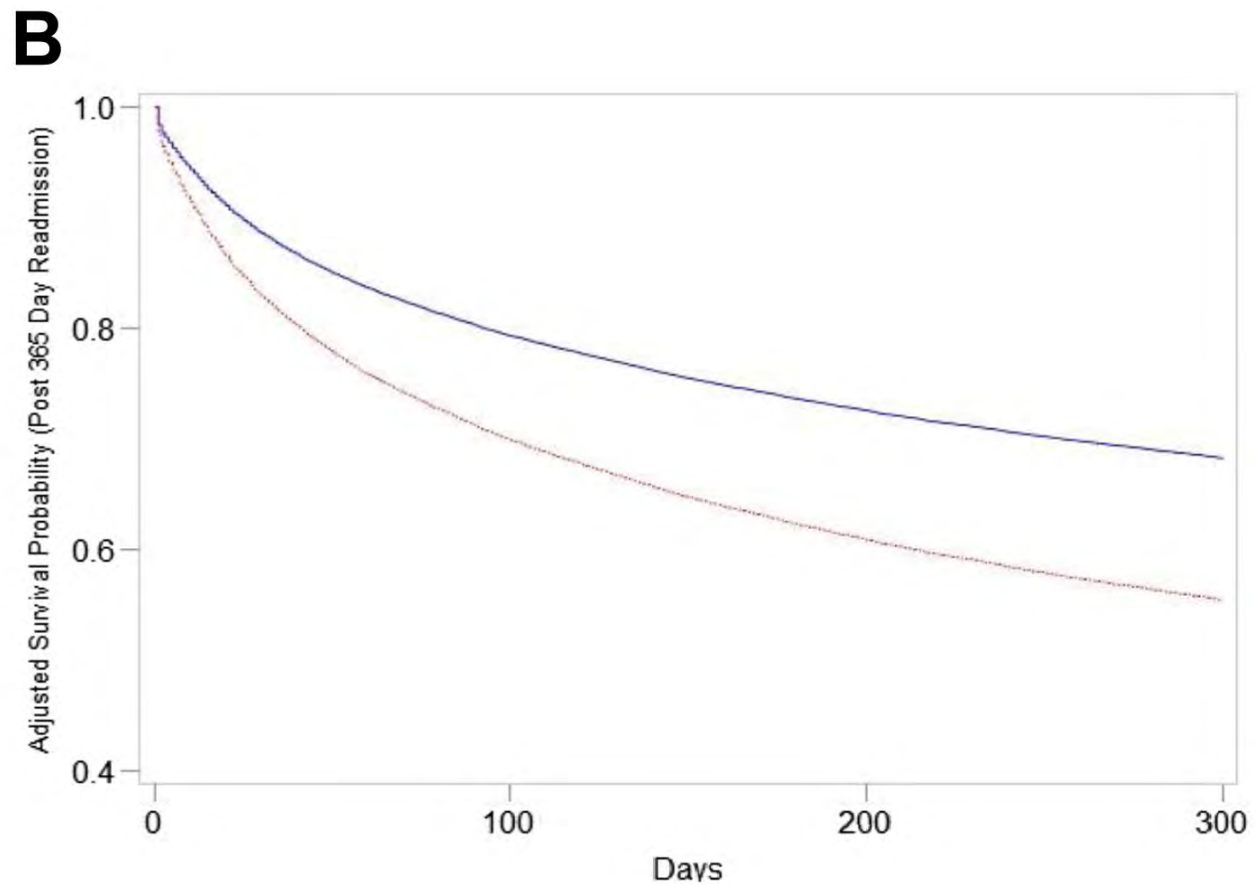
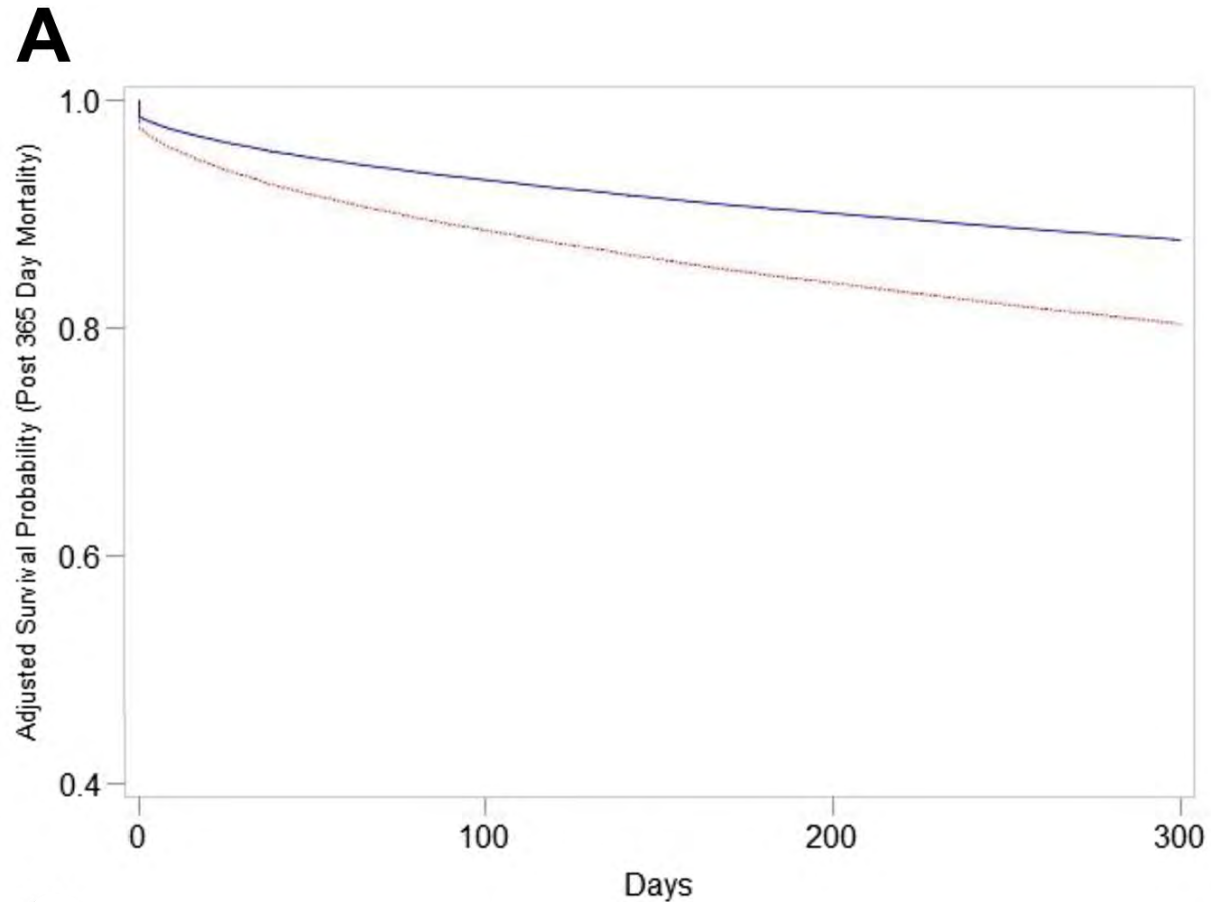
Results From the Veterans Aging Cohort Study

	HFpEF (EF >50%)	Borderline (EF 40-49%)	HFrEF (EF <40%)
Overall HIV	HR 1.2 (1.0-1.4)	1.4 (1.1-1.7)	1.6 (1.4-1.9)
White race	1.1 (0.9-1.5)	1.4 (1.0-2.1)	1.5 (1.2-2.0)
Black race	1.2 (0.9-1.4)	1.3 (1.0-1.8)	1.6 (1.4-1.9)
Age <40	1.2 (0.5-2.8)	2.1 (0.6-7.0)	3.6 (2.0-6.6)

HIV-related heart failure risk is higher in women

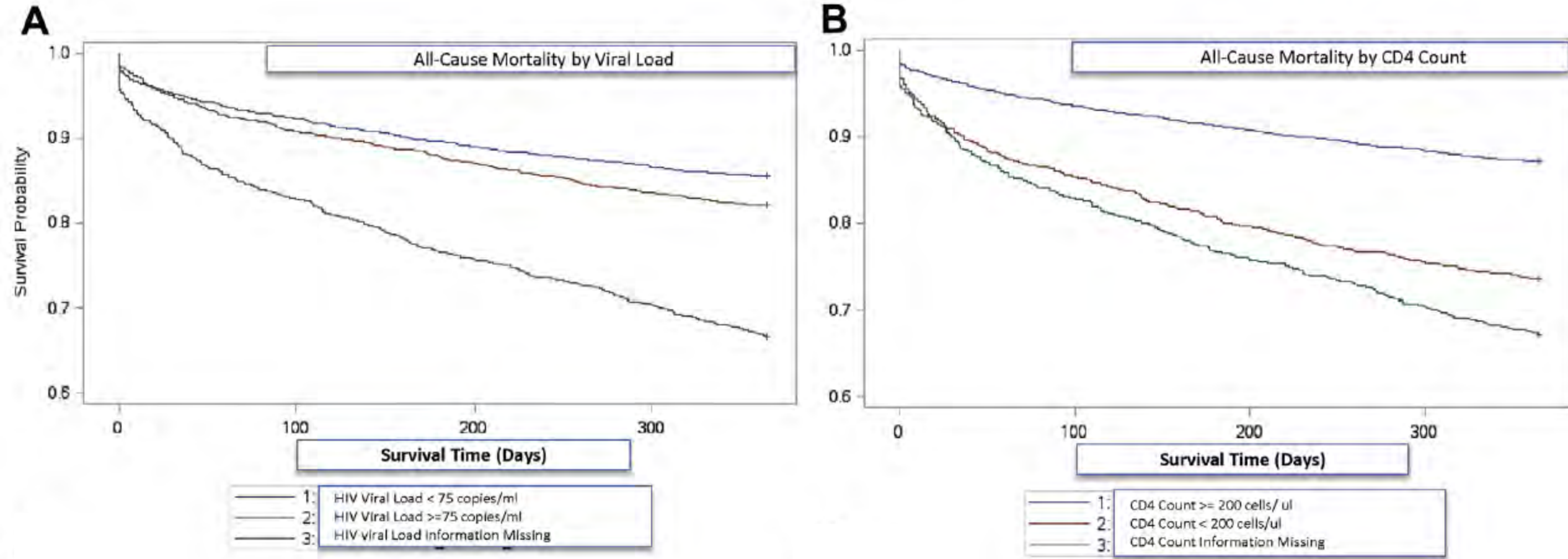


HIV is still associated with worse outcomes in the ART era

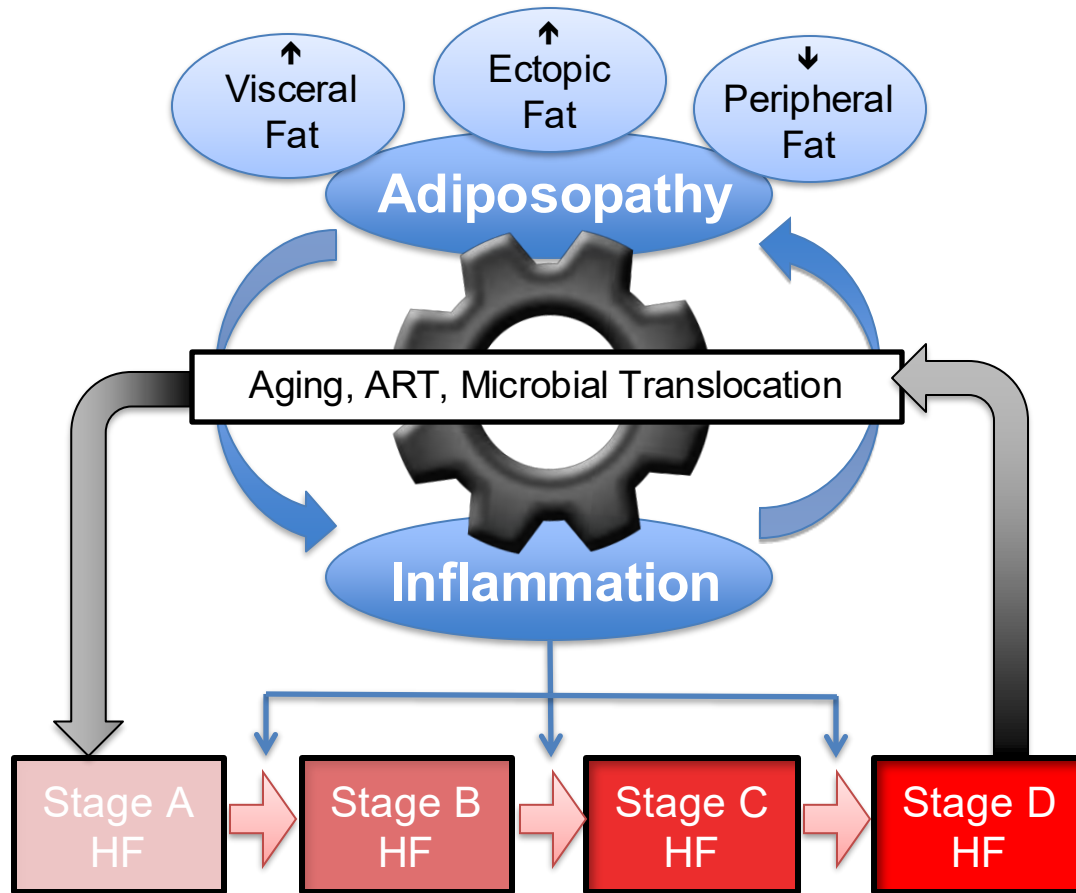


- HIV Negative Veterans with HF
- HIV Positive Veterans with HF

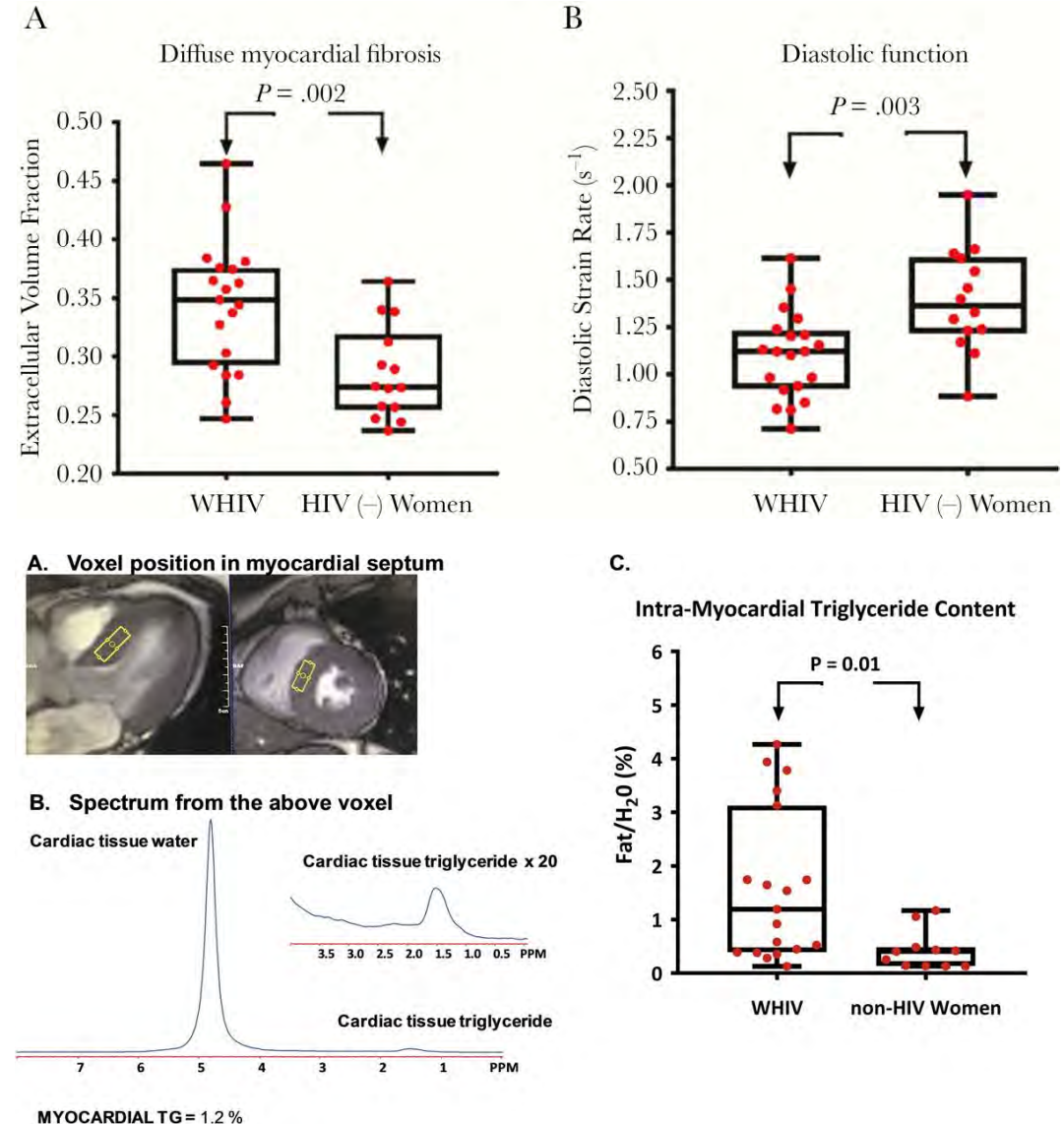
Outcomes still correlate with HIV disease control in ART era



Metabolic disease and inflammation may affect HF progression in HIV



Buggey et al, Curr Opin HIV/AIDS 2017
 Zanni et al, J Infect Dis 2019
 Toribio et al, JCEM 2019



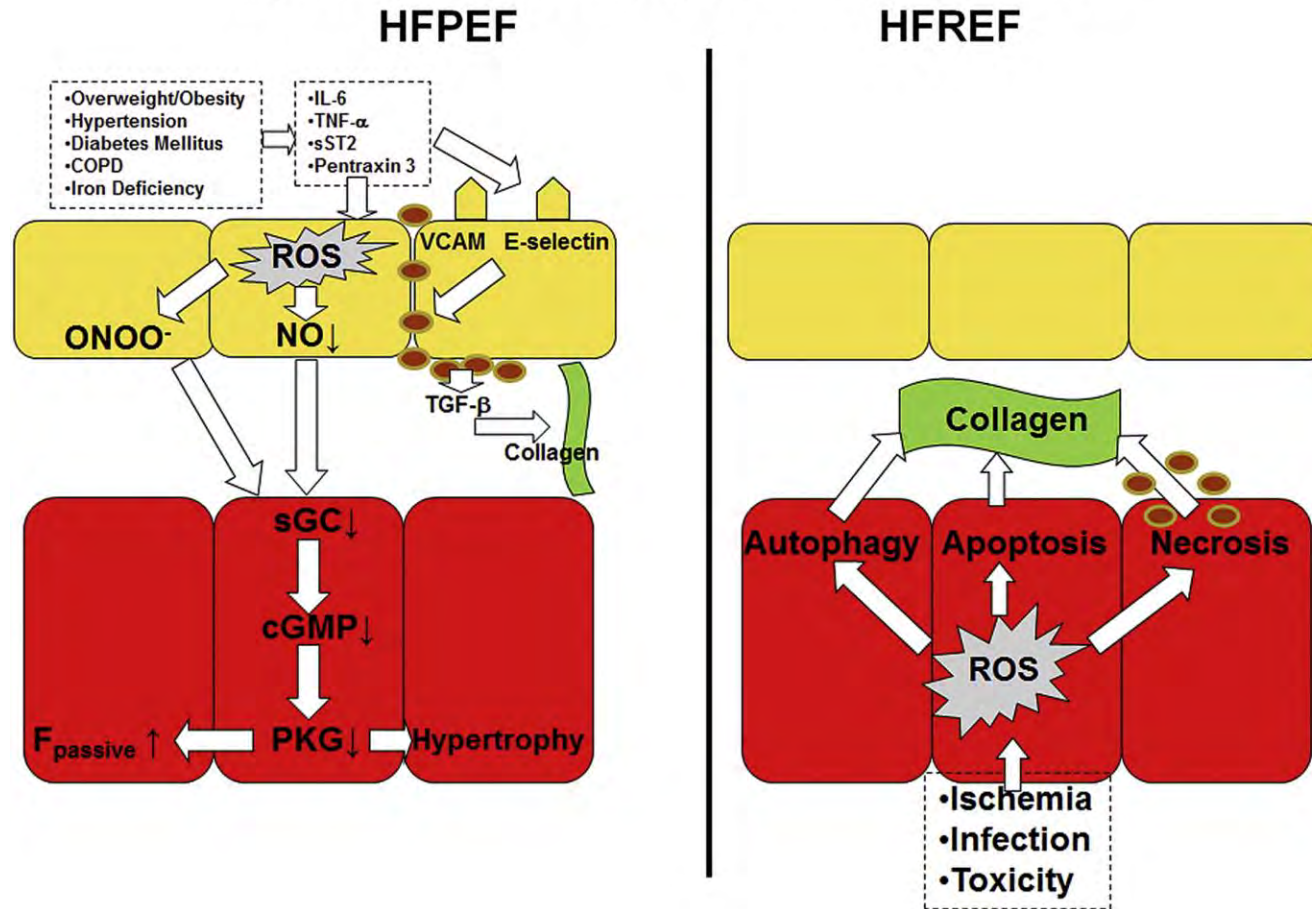
Heart failure with preserved EF (HFpEF)

- ~50% of all heart failure patients have **preserved** EF, and incidence is increasing.
- Heterogeneous population; difficult to definitively diagnose
- High prevalence of comorbidities and non-cardiovascular death
 - Obesity
 - Diabetes
 - COPD
 - Kidney disease
- Higher risk among (older) women

Mechanisms of HFpEF vs. HFrEF in People with HIV

- Comorbidities
- Microvascular Dysfunction
- Inflammation

Myocardial Remodeling in HFPEF and HFrEF

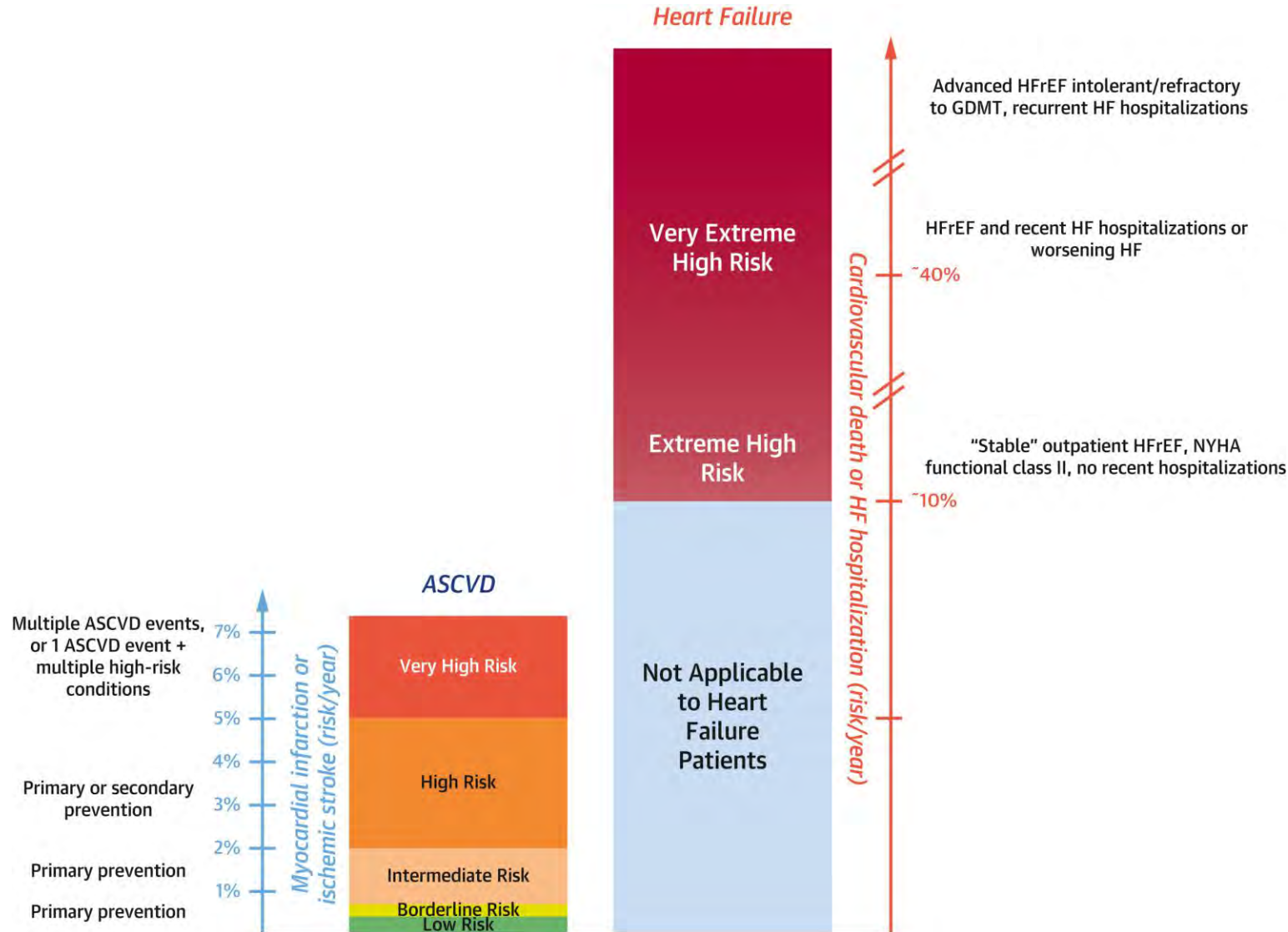


- Myocarditis
- Ischemia
- Toxins

How might we...

Improve Heart Failure Care for People with HIV?

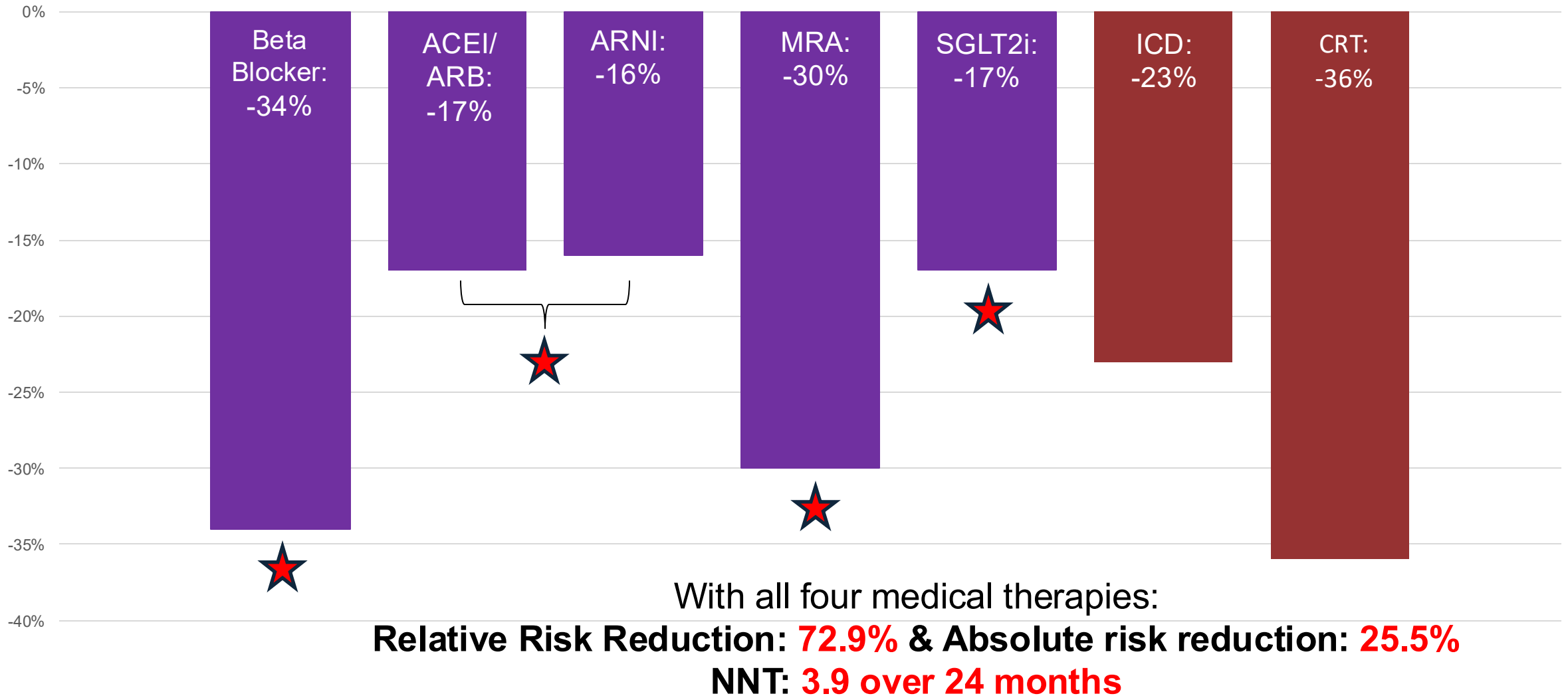
Heart Failure Risk in Context



Even the most stable patient with heart failure is higher risk than a “very high risk” patient with multiple prior ASCVD events



Guideline Directed Medical Therapy (GDMT) improves mortality in patients with HFrEF



Contingency Management for HF

ORIGINAL RESEARCH

OPEN

A Mixed-methods Evaluation of an Addiction/Cardiology Pilot Clinic With Contingency Management for Patients With Stimulant-associated Cardiomyopathy

Sarah Leyde, MD, Elizabeth Abbs, MD, Leslie W. Suen, MD, MAS, Marlene Martin, MD, Andreas Mitchell, MD, MPP, Jonathan Davis, MD, and Soraya Azari, MD



UW Community HF Program at HMC

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