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Characterization of Cardiovascular Risk Factors of People Living with HIV in a Veteran Population



VA | U.S. Department of Veterans Affairs

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BACKGROUND

- Cardiovascular disease is leading cause of death in people living with HIV (PLWH)
- HIV positive individuals have 1.5-2-fold greater risk of CVD, even if complete viral load suppression is achieved
- Chronic inflammation, immune dysregulation, or antiretroviral therapy (ART) specific risk factors are potential mechanisms of increased CVD risk
- HIV-associated cardiovascular disease (CVD) has tripled in past 20 years, but scant data is available about its long-term characterization

OBJECTIVES

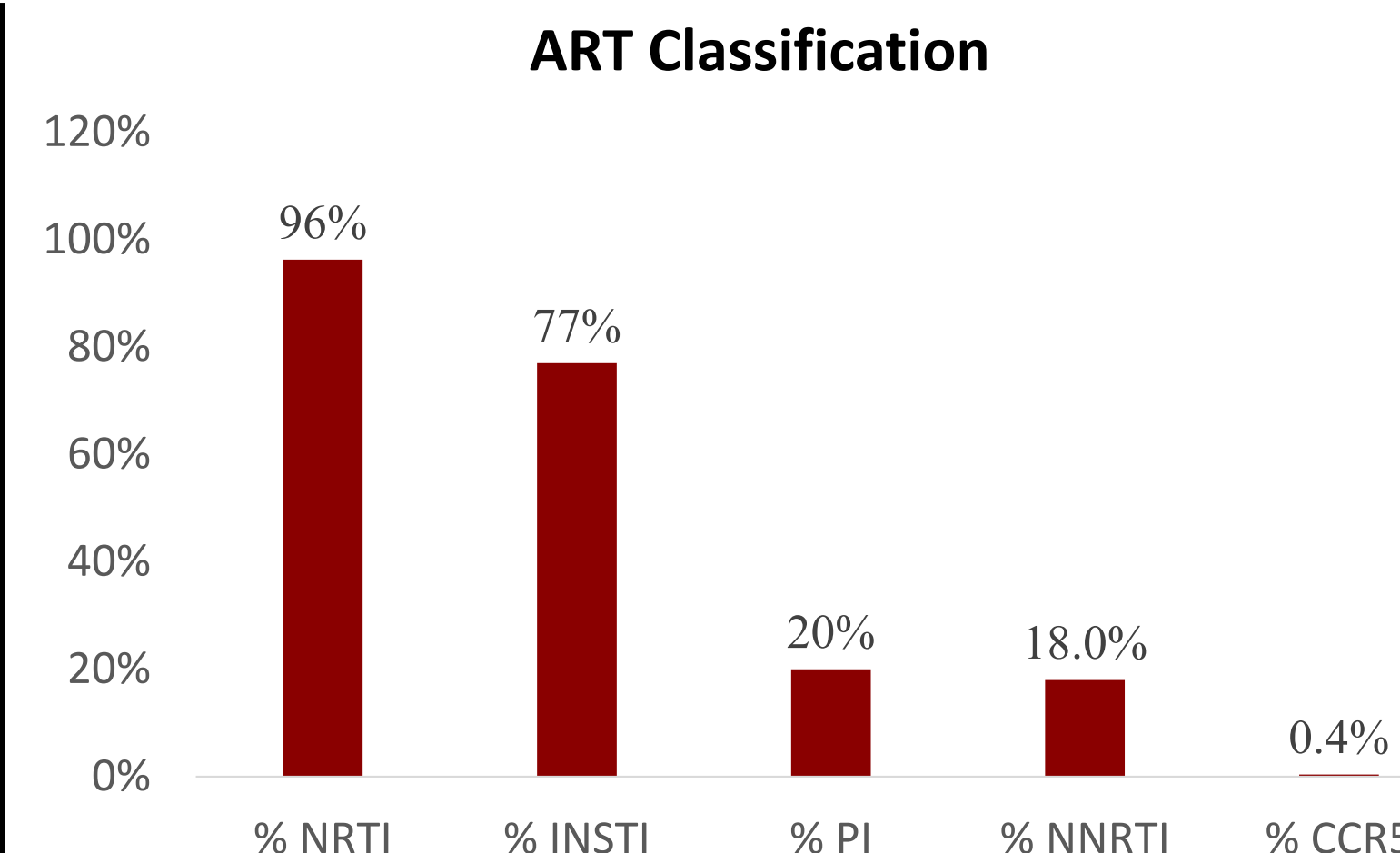
- Characterize CVD risk factors and treatment in PLWH in order to assess and improve cardioprotective treatment in a veteran population

METHODS

- Retrospective review** of electronic medical records was conducted on a patient list generated by TheraDoc Clinical Surveillance Software that included all veterans treated with ART from December 1, 2018 – December 31, 2019.
- Exclusion Criteria:**
 - Lab results collected > 1 year from last HIV clinic follow-up
- Data Collected:**
 - Patient demographic information: age, sex, race, BMI
 - HIV characterization and treatment: HIV VL, CD4 count, ART therapy
 - Hypertension characterization (BP readings) and treatment
 - Diabetes characterization (A1c, fasting glucose) and treatment
 - Dyslipidemia characterization and treatment
 - Cardiovascular events: MI, CVD/Stent/CABG, Stroke, PVD, HF
 - Additional data collection: smoking status, aspirin use, renal impairment

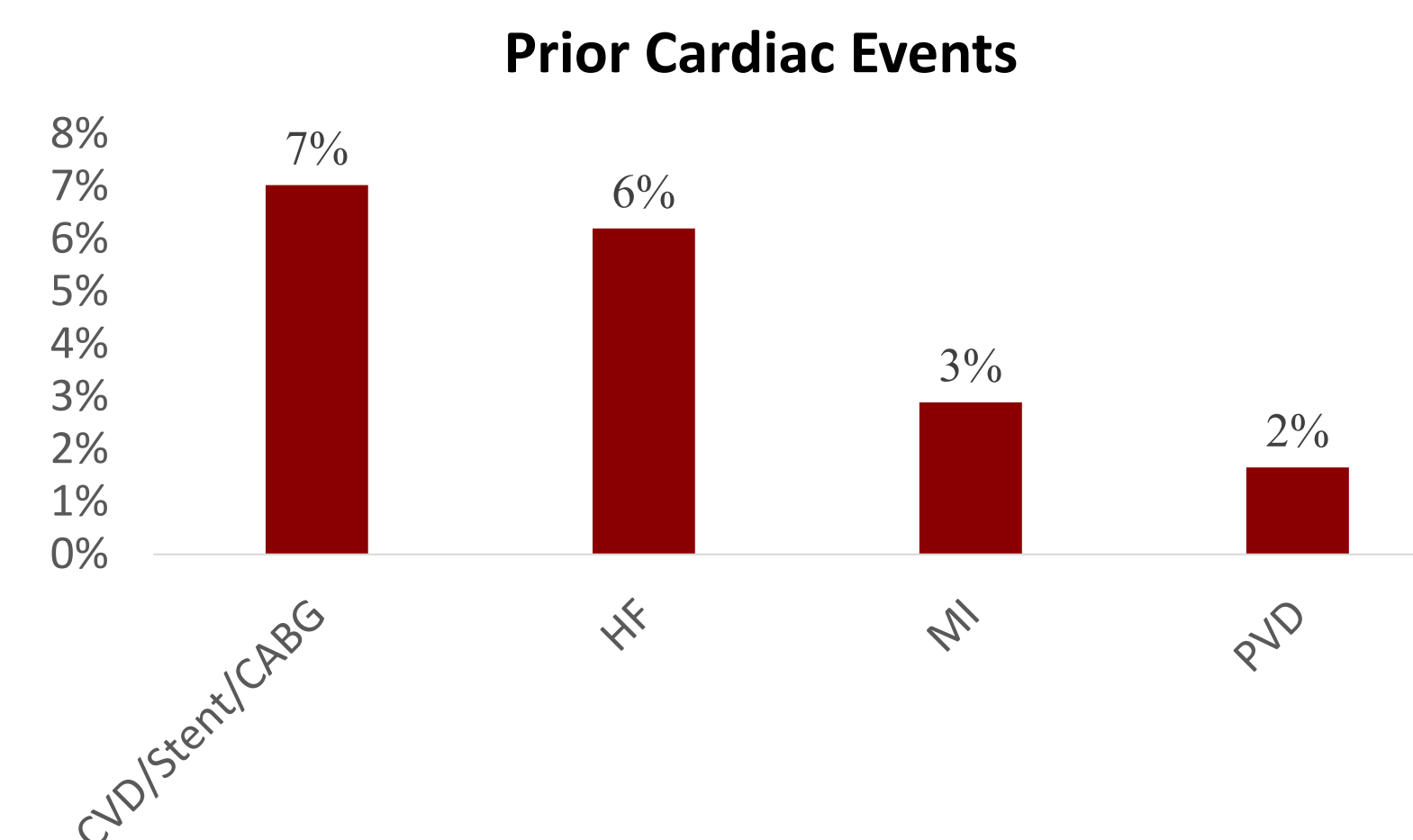
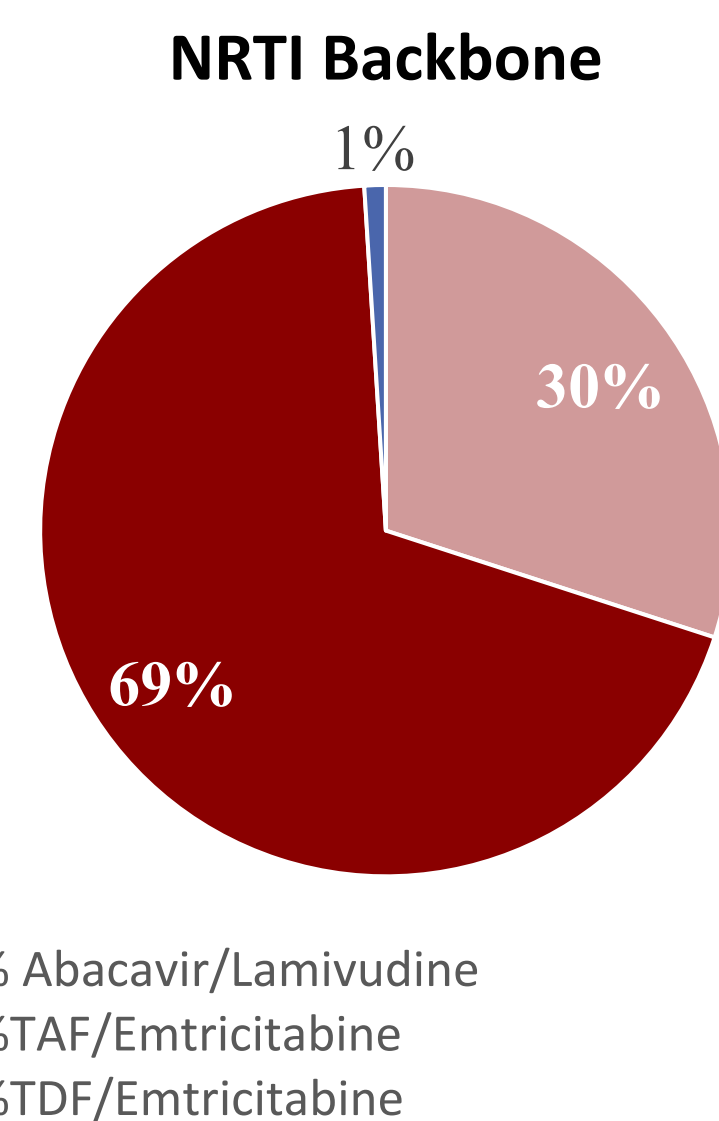
RESULTS

Baseline Characteristics (n=242)	
Age	58 (24 – 89)
Race	
Black/African American	77%
White	21%
Other	2%
Smoking Status	
Current	33%
Former	34%
Nonsmoker	33%
Diabetes	25%
On Diabetes Medications	76%
A1c < 7%	51%
Hypertension (HTN)	
< 140/90	86%
On HTN Medications	50%
Lipid Control	
LDL < 70	40%
On Lipid Lowering Agent	58%
On Statin	56%
CD4 Count (units)	653 (14-2427)
HIV Viral Load (VL) (units) (average from last 2 results)	
< 20	59%
< 200	91%
Aspirin Use	39%



Characterization of Metabolic Risk Factors		
	Average	Range
BMI	29	16 – 66
LDL	90	16 – 204
HDL	51	19 – 117
Triglycerides	141	37 – 522
Glucose	108	61 – 449
A1c	6	3.6 – 14
SCr*	1.4	0.4 – 12.1
Blood Pressure	Systolic	126
	Diastolic	76
10 – Year ASCVD Risk	25	6.9 – 56.4

* = median used in lieu of mean



LIMITATIONS

- Retrospective Review
- Data reliant on TheraDoc Clinical Surveillance Software and medical chart documentation accuracy
- Assessing cardiovascular risk using ACC ASCVD Risk Estimator has built-in limitations when calculating 10-year ASCVD Risk including:
 - Age must be 20-79
 - LDL must be between 70 and 190
 - TC must be at least 130
 - HDL must be at least 20
- ASCVD risk estimator does not include any HIV-specific risk factors in their calculations

CONCLUSIONS

- Despite metabolic risk factors being near goal, our patient's ASCVD risk was still high, likely due to uncontrolled diabetes, smoking status, BMI, and a large proportion of our patients being African American.
- Calculated ASCVD is likely an underestimation of our patient's true value due to a lack of HIV specific risk factors in the ASCVD Risk Estimator.
- Characterization of CVD in PLWH should be a high priority and treatment should be closely monitored, due to their longer lifespans and the rising disease state burden.

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