

# The Impact of Race on Hypertension and Congestive Heart Failure Among Older Adults with and without HIV

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## Results:

**Table 1:**

Characteristics of Participants (N=371) from the CEDHA Cohort Stratified by HIV Status

Characteristic n (%) or mean (SD)	Sample Size	HIV+ (n=177)	HIV- (n=194)
<b>White</b>	116	53 (29.9%)	63 (32.5%)
<b>Black</b>	255	124 (70.1%)	131 (67.5%)
<b>Male</b>	272	134 (75.7%)	138 (71.1%)
<b>Female</b>	97	42 (23.7%)	55 (28.4%)
<b>Age</b>	371	58.7 (4.46)	58.9 (6.80)
<b>Education</b>	371	13.2 (2.82)	13.6 (2.96)
<b>CHF</b>	23	11 (6.2%)	12 (6.2%)
<b>Hypertension</b>	187	95 (53.7%)	92 (47.4%)

There were no significant differences in any of these variables by HIV status.

**Table 2:**

Proportions and Odds Ratios of Hypertension for Participants and Stratified by HIV Status

Variable	n	Proportion (%)	OR <sub>Hypertension</sub> (95% CI)
<b>Total (N=371)</b>			
<b>HIV+</b>	177	53.7%	1.28 (0.85, 1.93)
<b>HIV-</b>	194	47.4%	
<b>Black</b>	255	52.5%	1.32 (0.85, 2.04)
<b>White</b>	116	45.7%	
<b>Female</b>	97	52.6%	1.13 (0.71, 1.79)
<b>Male</b>	272	49.6%	
<b>HIV+ (n=177)</b>			
<b>Black</b>	124	54.0%	1.05 (0.55, 2.00)
<b>White</b>	53	52.8%	
<b>Female</b>	42	52.4%	0.95 (0.47, 1.90)
<b>Male</b>	134	53.7%	
<b>HIV- (n=194)</b>			
<b>Black</b>	131	51.1%	1.59 (0.86, 2.93)
<b>White</b>	63	39.7%	
<b>Female</b>	55	52.7%	1.33 (0.71, 2.49)
<b>Male</b>	138	45.7%	

- HIV+ and HIV- participants had similar odds of hypertension (Table 2).
- Blacks and Whites had similar odds of hypertension (Table 2).
- Within both HIV+ and HIV- participants, Blacks and Whites had similar odds of hypertension. (Table 2).
- Participants with hypertension were older than those without (59.7 vs. 57.9,  $t_{df=364}=2.98, p=0.003$ ). There were no significant difference by gender.
- Within HIV+ participants, those with hypertension were older than those without (60.2 vs. 57.0,  $t_{df=175}=4.01, p<0.001$ ). There was no significant difference within HIV- participants.
- There were no significant differences by race, gender, or age for CHF.

## Conclusions:

- Previous literature has indicated racial differences in HIV status, hypertension, and CHF with Blacks having greater risks than Whites.
- We did not find any significant differences for race or gender for hypertension and CHF among older adults with or without HIV.
- We found significant age differences in hypertension especially among HIV+ participants.
- Limitations: Cohort not representative of US population; small numbers for CHF; possible survival bias (Black race, HIV+, & CVD associated with higher mortality)
- Next steps: 1) Repeating this study with a larger sample; and 2) targeting populations with diverse demographic and psychosocial profiles.

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## Background:

- Human immunodeficiency virus (HIV) is a disease that slowly destroys the immune system leaving many people susceptible and at a higher risk of developing other chronic diseases.<sup>1,2</sup>
- The introduction of antiretroviral therapy (ART) has increased the lifespan of people living with HIV,<sup>3,4</sup> which in turn has increased the number of people living with HIV and subsequent health complications arising in a rapidly aging US population.<sup>5</sup>
- Among older adults with HIV, health complications associated with normal aging begin to arise earlier and the risk of developing chronic diseases such as hypertension and congestive heart failure (CHF) also increases.<sup>6</sup>
- Blacks in the United States have a greater risk of receiving treatment for HIV,<sup>7,8</sup> developing HIV,<sup>2</sup> cardiovascular disease (CVD),<sup>9</sup> and hypertension<sup>10</sup> due to the greater mistrust in physicians<sup>8</sup> and the health disparities that exist between Blacks and Whites.

## Objectives:

- The purpose of this study is to understand racial differences in hypertension by HIV status among older adults.
- Secondary aims were to examine congestive heart failure (CHF) as an outcome, and to examine differences in hypertension and CHF by gender and age.

## Methods:

- Rush Center of Excellence on Disparities in HIV and Aging (CEHDA) Cohort:
  - ◆ A total of 371 participants were sampled: 255 Blacks, 116 Whites, 177 HIV+, & 194 HIV-
- Ethics:
  - ◆ The CEDHA Research Core was approved by the Rush Institutional Review Board.
- Variables:
  - ◆ All variables were self-reported except HIV status which was determined by a blood test.
    - ❖ **Race:** "With which group do you most closely identify yourself?" Response Options: 1= White and 2= Black
    - ❖ **Hypertension\*:** "Have you ever been told by a doctor, nurse or therapist that you had high blood pressure?" Response Options: 1= Yes, 2= Suspect or Possible, and 3= No
    - ❖ **CHF\*:** "Have you ever been told by a doctor, nurse or therapist that you had congestive heart failure?" Response Options: 1= Yes, 2= Suspect or Possible, and 3= No
    - ❖ Other covariates: **age** (at baseline) and **gender** (1= Male and 0=Female)

\*1 and 2 combined

## Statistics:

- Statistical analysis compared demographic and clinical characteristics of HIV+/- participants using t-tests for continuous variables (age) and chi-square analyses for categorical variables (HIV status, race, gender, hypertension, & CHF).
- Proportions and odds ratios of hypertension and CHF were ascertained, along with confidence intervals.
- t-tests were two-sided with a significance level of  $\alpha=0.05$
- Potential confounders were identified.

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