

Disparities in Viral Suppression among a Large Cohort of HIV-Infected Persons in Washington, DC

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BACKGROUND

- Achieving viral suppression (VS) is the ultimate goal of the HIV care continuum.
- Persons not suppressed have poor clinical outcomes and the potential to transmit virus.
- Disparities exist among particular subpopulations with regard to treatment access.
- Accordingly, one of the goals of the National HIV/AIDS Strategy is to reduce HIV-related health disparities.

OBJECTIVES

- To identify potential disparities in VS among an urban cohort of HIV-infected persons in care

METHODS

DC COHORT

- A longitudinal observational cohort study of HIV-infected persons in care in Washington, DC at 13 participating clinical sites
- Data abstracted from participants' electronic medical records manually and through electronic exports
- Included participants enrolled 1/2011 -9/2013 with ≥ 2 viral loads reported through 12/2013 and a history of receiving ARV treatment

ANALYSIS

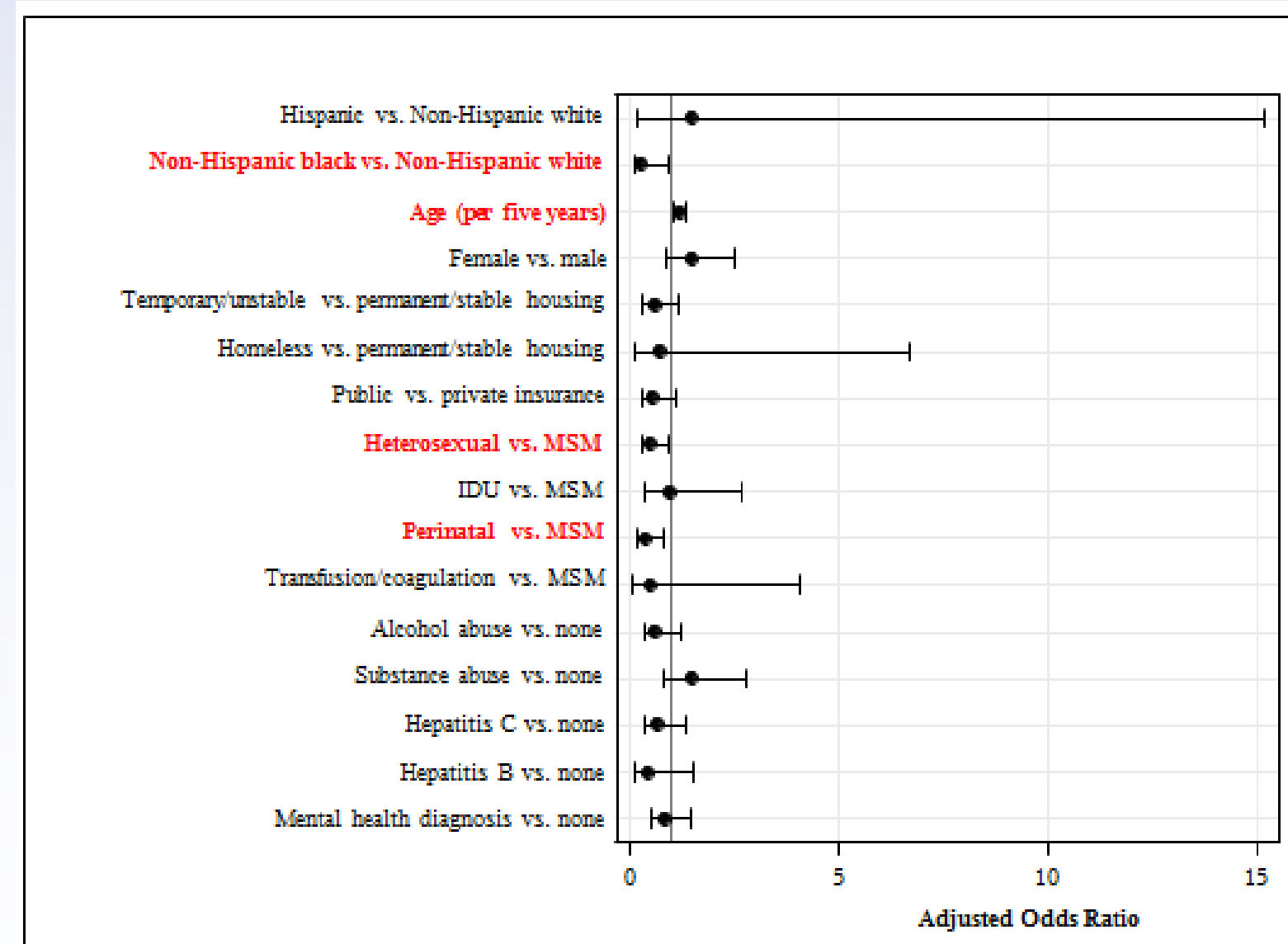
- Viral suppression (VS):** A viral load (VL) <200 copies/ml at the time of enrollment or at the most recent VL measurement
- Sustained VS:** All VL results <200 copies/ml during a specified time period
- Calculated bi- and multivariate logistic regression to identify factors associated with achieving VS
- Kaplan Meier curves created to assess sustained VS

Table 1. Characteristics of DC Cohort Participants by Viral Suppression (N=2,644)

Characteristics	Participants Ever Achieving VS N (%)	Participants Not Achieving VS N (%)	P-value*
Age (yrs) (median, IQR)	47.1 (37.6-54.1)	41.1 (22.5-49.1)	<0.001
Sex at birth			0.01
Male	1,867 (76.2)	133 (68.2)	
Race/Ethnicity			<0.0001
Non-Hispanic black	1,805 (73.7)	177 (90.8)	
Non-Hispanic white	414 (16.9)	9 (4.6)	
Hispanic	135 (5.5)	5 (2.6)	
Other**	36 (1.5)	4 (2.1)	
Unknown	59 (2.4)	0 (0.0)	
Housing status			0.85
Permanent/stable	1,965 (80.2)	153 (78.5)	
Temporary/unstable	264 (10.8)	25 (12.8)	
Homeless	48 (2.0)	4 (2.1)	
Other/Unknown	172 (7.0)	13 (6.7)	
Insurance status			<0.0001
Public	1,668 (68.1)	163 (83.6)	
Private	623 (25.4)	22 (11.3)	
Other	43 (1.8)	3 (1.5)	
Unknown	115 (4.7)	7 (3.6)	
Mode of transmission			<0.0001
MSM	1,063 (43.4)	57 (29.2)	
High risk heterosexual	605 (24.7)	53 (27.2)	
IDU	163 (6.7)	10 (5.1)	
Perinatal	110 (4.5)	43 (22.1)	
MSM/IDU	44 (1.8)	1 (0.5)	
Transfusion/coagulation disorder	13 (0.5)	1 (0.5)	
Other	17 (0.7)	1 (0.5)	
Unknown	433 (17.7)	28 (14.4)	
Missing	1 (0.0)	1 (0.5)	
Years HIV positive (median, IQR)	10.7 (5.1-17.3)	11.3 (6.2-17.1)	<0.001
Duration on ARVs (yrs) (median, IQR)	3.7 (1.8-10.6)	5.7 (2.4-12.6)	0.03
CD4 at enrollment (cells/ μ l) (median, IQR)	255 (103-400)	111 (10-326)	0.48
Alcohol abuse			0.06
Yes	339 (13.8)	24 (12.3)	
Substance abuse			0.03
Yes	464 (19.0)	39 (20.0)	
Hepatitis C status			0.58
Positive	323 (13.2)	23 (11.8)	
Hepatitis B status			0.68
Positive	52 (2.1)	5 (2.6)	
Mental health/Depression			0.53
Yes	935 (38.8)	70 (35.9)	

*Chi-square or Wilcoxon test; **Other race includes mixed race individuals, Asians, Alaska Natives, American Indians, Native Hawaiians, and Pacific Islanders.

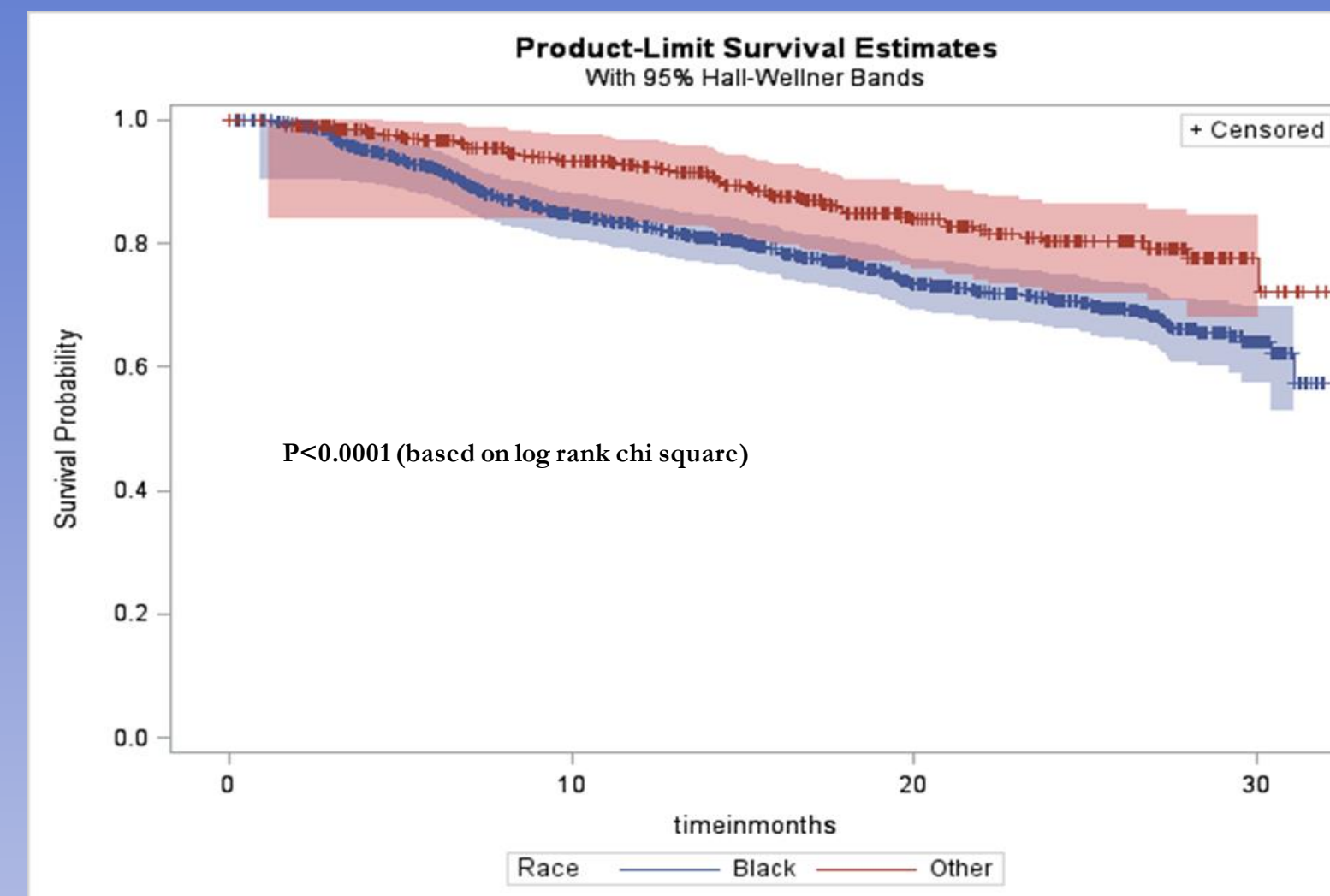
Figure 1. Multivariable Logistic Regression of Factors Associated with Achieving Viral Suppression*



*Adjusted for all other variables in the model; variables in red were those found to be statistically significantly associated with viral suppression

RESULTS

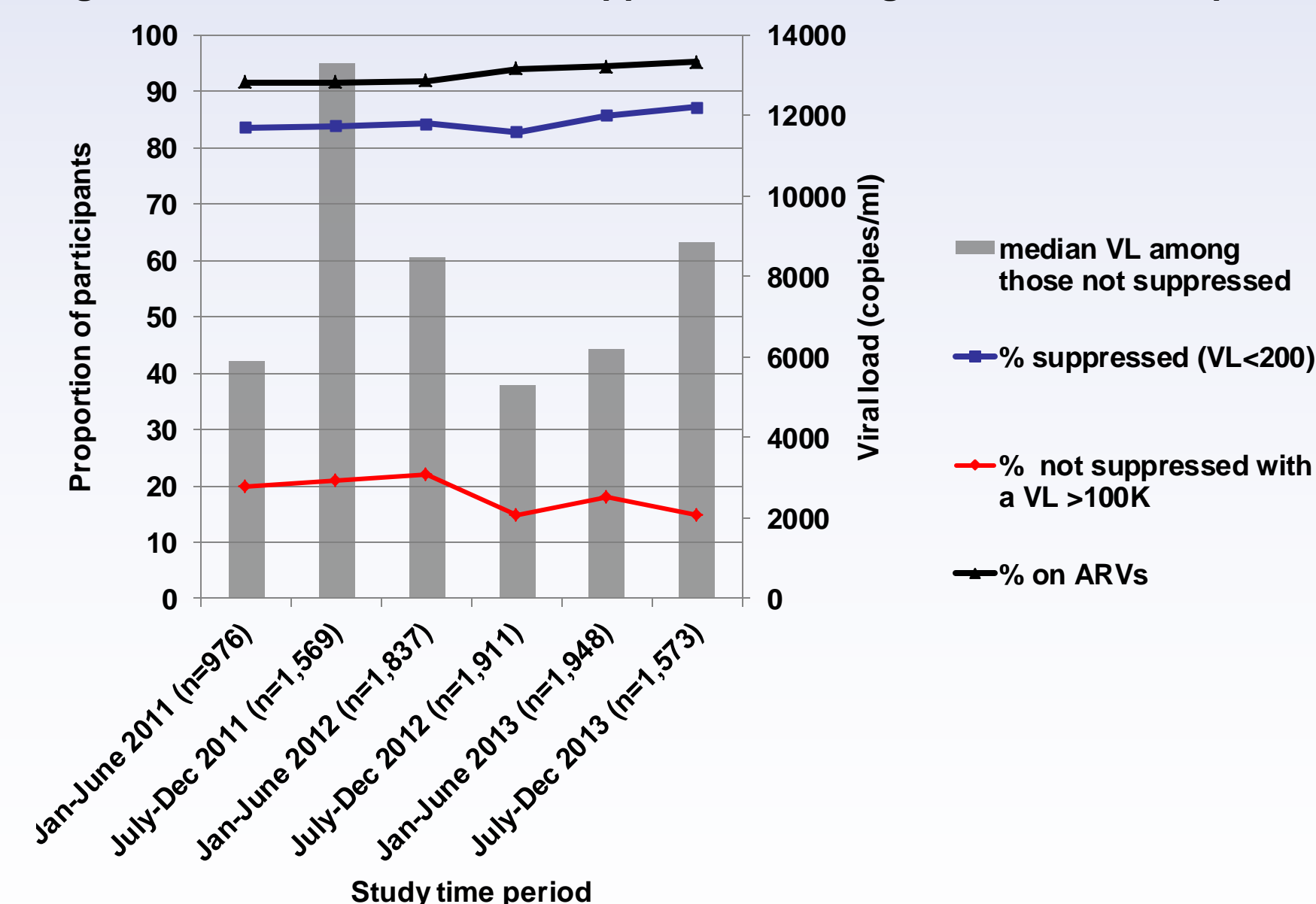
Figure 2. Kaplan Meier Curve of Sustained Viral Suppression



RESULTS

- 1,636 (62%) participants had sustained VS over the entire follow-up period
- 302/1375=28.8% of blacks failed to sustain VS (mean time to failure=24.9 months)
- 64/509=14.3% of other races failed to sustain VS (mean time to failure=26.7 months)

Figure 3. Trends in Viral Load Suppression among DC Cohort Participants



CONCLUSIONS

SUMMARY

- 93% of DC Cohort participants were able to achieve VS.
- Blacks, younger persons, those infected heterosexually or perinatally were significantly less likely to achieve VS.
- Blacks had significantly faster time to virologic failure compared to other race/ethnicities.
- The majority of participants sustained VS over time.
- Among the unsuppressed, median VLs ranged from 5,290-13,284 copies/ml, with 15-22% having VLs >100K.

LIMITATIONS

- Data reflect only those persons in care and consented to be in the DC Cohort.
- Limited follow-up period; longitudinal analysis will allow for further assessment of sustained VS.

DISCUSSION

- Among a large urban cohort of HIV-infected persons, the majority of persons were able to achieve and maintain viral suppression.
- Disparities in viral suppression exist with regard to race, age, and mode of infection.
- Further analysis of factors such as ART exposure and drug resistance may provide further insight into understanding observed treatment failures.
- Efforts to identify populations with disparate outcomes will allow for appropriate targeting of resources to improve VS and achieve national goals.

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