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

Castel AD, Greenberg AE, Young H, Kalmin MM, on Behalf of the DC Cohort Executive Committee

George Washington University, School of Public Health and Health Services

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

RESULTS

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

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Participants Ever Achieving VS</th>
<th>Participants Not Achieving VS</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at Study Start (yrs) (median, IQR)</td>
<td>47.1 (37.6-54.1)</td>
<td>41.1 (22.5-49.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sex at birth</td>
<td>Male</td>
<td>1,867 (76.2)</td>
<td>133 (30.2)</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>Non-Hispanic black</td>
<td>1,865 (73.7)</td>
<td>177 (36.8)</td>
</tr>
<tr>
<td>Mode of transmission</td>
<td>Perinatal</td>
<td>44 (1.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>Yes</td>
<td>539 (13.6)</td>
<td>36 (13.8)</td>
</tr>
<tr>
<td>Hepatitis C status</td>
<td>Positive</td>
<td>325 (13.6)</td>
<td>21 (11.8)</td>
</tr>
<tr>
<td>Mental Health Disorders</td>
<td>Positive</td>
<td>82 (3.3)</td>
<td>12 (6.2)</td>
</tr>
</tbody>
</table>

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

Figure 2. Kaplan Meier Curve of Sustained Viral Suppression

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

CONCLUSIONS

• 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.

For additional information please contact: Amanda D. Castel, MPH at acastel@gwu.edu