Title: Covid-19 seroprevalence in HIV-infected and non-infected residents of a Long-Term Care Facility (LTCF) in New Jersey (NJ).

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Background:
SARS-CoV-2 has caused a large spectrum of symptoms and outcomes based on age, gender, health status and other as yet-unknown characteristics. Little is known about SARS-CoV-2 antibody development in HIV-infected individuals.
The objective of this study is to compare the SARS-CoV-2 seroprevalence in HIV-infected (HIV+) and non-infected (HIV-) residents of a LTCF in NJ and to identify factors which may influence the development of antibody.
SARS-CoV-2 PCR testing was performed on all residents periodically, from April to December 2020.

Methods:
This is a Cross-sectional descriptive study comparing SARS-CoV-2 seroprevalence in HIV+ and HIV- residents of a LTCF. After the IRB approval, subjects were consented, blood samples were collected and serology tests on SARS-CoV-2’s N (Nucleocapsid) and S (Spike) proteins were conducted (Nov-Dec 2020) at the NJ Department of Health, Public Health and Environmental Laboratories. Seropositivity was defined as positive to either S or a combined N/S protein assay.
Medical records reviewed for age, sex, race/ethnicity, HIV status, CD4+ count, history of Covid-19 and history of symptoms consistent with Covid-19 prior to PCR testing.

Results:
Of 61 residents, 56 consented. 1 subject died before the blood sampling and we were unable to sample 2.

<table>
<thead>
<tr>
<th>Total</th>
<th>GENDER</th>
<th>AGE (Mean)</th>
<th>RACE/ETHNICITY</th>
<th>PCR+</th>
<th>AB+</th>
<th>CD4+&lt;200</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>F</td>
<td>Black</td>
<td>Hispanic</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>HIV-</td>
<td>25</td>
<td>16(46%)</td>
<td>9(36%)</td>
<td>10(40%)</td>
<td>11(44%)</td>
<td>4(16%)</td>
</tr>
<tr>
<td>HIV+</td>
<td>28</td>
<td>19(68%)</td>
<td>9(32%)</td>
<td>18(64%)</td>
<td>6(22%)</td>
<td>4(14%)</td>
</tr>
</tbody>
</table>

5 of 28 (18%) HIV+ vs. 9 of 25 (36%) HIV- residents had positive antibody for SARS-CoV-2. (Pvalue= 0.134). All with PCR+ history, had positive serology.

Conclusions:
Sero positivity prevalence was lower in HIV+ than HIV- residents, although the difference was not statistically significant perhaps due to the small population. Factors influencing SARS-CoV-2 infection were not examined in this study and further studies with larger cohorts are needed to investigate them.