CD4 count distribution and ART use in a nationally representative sample of HIV-infected adults: Swaziland HIV Incidence Measurement Survey (SHIMS)

Charles Ikechi Azih¹, Naomi Bock², Deborah Donnell³, George Bicego², Velepi Okello¹, Peter Ehrenkranz², Neena M Philip⁴, Rejoice Nkambule¹, Jessica Justman⁴

¹ Ministry of Health, Swaziland, ² Centers for Disease Control and Prevention, Atlanta, USA, ³ Statistical Center for HIV/AIDS Research and Prevention and the Vaccine and Infectious Disease Institute, Fred Hutchinson Cancer Research Center, Seattle, USA, ⁴ ICAP, Mailman School of Public Health, Columbia University, New York, USA

Abstract #Y-1011

Background: CD4 enumeration measures the severity of HIV infection in individuals and helps determine eligibility for ART. The distribution of CD4 counts among HIV-infected individuals in a population is unknown, and consequently, the true level of ART coverage in a region cannot be estimated.

Methods: In the Swaziland HIV Incidence Measurement Survey, a nationally representative sample of 18,169 men and women, age 18-49, underwent household-based counselling and rapid HIV testing and provided clinical/demographic information. Among 5802 HIV-infected individuals identified during the survey, 1045 (18%) were randomly selected to participate in a follow-up visit, with collection of blood for CD4 enumeration via automated flow cytometry, a questionnaire to assess use of HIV care services and review of each participant's personal medication booklet.

Results: Of the 945 HIV-infected individuals who were located and consented to participate, 66% were women; 67% resided in a rural setting; 59% reported ever initiating ART; 31% reported no prior HIV care; 28% had a CD4 count <350; 3% had a CD4 count <200. Among men and women, 41% and 25%, respectively, had a CD4 count <350. While education was associated with CD4 count (32% of those with less than secondary education had CD4 count <350 vs. 20% of those with tertiary education, \( \chi^2 = 18.8, p < 0.05 \)), urban versus rural residence, age group, employment and marital status did not show an association with CD4 count category.

Six hundred individuals reported having been told by a clinician to take ART; 23% of these, 482 (80%) reported initiating ART and 463 (77%) reported current ART use.

Conclusion: The distribution of CD4 counts among HIV-infected individuals in a population is unknown, and consequently, the true level of ART coverage in a region cannot be estimated.

Demographic Information:
- Study sample = 945
- Females = 66%
- Rural dwellers = 67%
- Married/Co-habiting = 59%
- Employed = 44%

Distribution of CD4 count (cells/mm³) among population-based sample of 945 HIV-infected adults:
- 0-199 = 480 cells/mm³
- 200-349 = 480 cells/mm³
- 350-499 = 480 cells/mm³
- >500 = 480 cells/mm³

<table>
<thead>
<tr>
<th>CD4 count (cells/mm³)</th>
<th>Women</th>
<th>Men</th>
</tr>
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<tbody>
<tr>
<td>0-199</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>200-349</td>
<td>42%</td>
<td>38%</td>
</tr>
<tr>
<td>350-499</td>
<td>21%</td>
<td>17%</td>
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<tr>
<td>&gt;500</td>
<td>22%</td>
<td>19%</td>
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7% of 619 eligible for ART reported currently being on treatment
96% of 482 who reported initiating ART also reported current ART use

CONCLUSIONS:
- First population-based assessment of national CD4 distribution among HIV+ adults
- Median CD4 among HIV+ adults in Swaziland is 480 c/mm³
- Very high retention rate (96%) among adults who start ART
- High ART coverage of eligible HIV+ (75%)
- However, 25% of adults with current CD4 < 350 cells/mm³ reported no prior HIV care
- Priority steps for the Swaziland program include: [1] expansion of HIV testing with strengthened linkages to HIV care and treatment, and [2] identifying barriers to ART initiation among those who link to HIV care.

Corresponding author: Naomi Bock, MD
HIV Prevention Branch, Division of Global HIV/AIDS Prevention, Centers for Disease Control and Prevention
1600 Clifton Rd, Mailstop E-49, Atlanta, GA 30333-4010 (T): 404-639-8134 (F): 404-639-8114 (E): Neb2@cdc.gov