A High Proportion of Persons Diagnosed with Acute HIV Achieve Viral Suppression

Emily Westheimer[1], Philip J. Peters[2], Rebekkah Robbins[1], Sarah Braunstein[1]

[1]New York City Department of Health and Mental Hygiene, New York, NY, USA; [2]Centers for Disease Control and Prevention, Atlanta GA, USA

Background

- Advances in HIV testing have improved diagnosis in the acute phase of HIV infection
- The acute phase is characterized by high viral load and is thought to contribute disproportionately to onward HIV transmission
- Achieving viral load suppression in patients with Acute HIV infection is crucial in reducing new cases of HIV

Objective

To determine whether patients with acute HIV infection (AHI) are successfully linked to care and achieve viral suppression rates comparable to patients newly diagnosed with non-acute established HIV infection.

Methods

Study Population: The STOP study was a prospective multi-site study comparing two methods to detect AHI. In New York City (NYC), participants (age ≥ 12 years) at three sexually transmitted disease (STD) clinics and two community-based testing programs were screened for HIV between October 2011 and October 2013.

Individuals newly diagnosed with either acute (rapid HIV test negative; HIV-1 RNA detectable) or established HIV infection (rapid HIV test reactive and confirmed) were referred to an HIV care provider by clinic staff at the time of notification.

Analysis:

- CD4 cell count and viral load laboratory reports received by NYC's HIV surveillance program were used to determine HIV care continuum outcomes.
- Individuals with a reported CD4 count or viral load within 3 months after HIV diagnosis were considered timely linked to care.
- Among participants with 12 months of follow-up:
  - Retention in care was defined as two CD4 or VL tests ≥ 90 days apart.
  - Viral suppression was defined as most recent VL ≤200 copies/mL.
- The proportion of patients linked to care, retained in care and achieving viral suppression were compared using chi square and fisher's exact tests, and predictors.
- Participants who were found to be previously diagnosed with HIV or who were not NYC residents were excluded from the analysis.

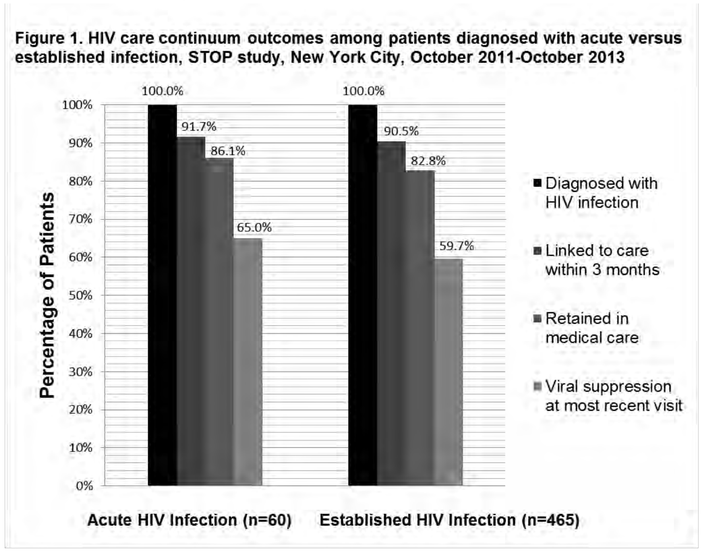
Results

Table 1. Demographic characteristics among patients diagnosed with acute versus established HIV infection, STOP study, New York City, October 2011-October 2013.

	Overall		Acute HIV infection		Established HIV infection	
	N	%	N	%	N	%
TOTAL	**525**	100.0	**60**	100.0	**465**	100.0
Age at HIV diagnosis						
<25 years	151	28.8	16	26.7	135	29.0
≥25 years	374	71.2	44	73.3	330	71.0
Gender						
Male	506	96.4	60	100.0	446	95.9
Female	9	1.7	0	0.0	9	1.9
Other or missing	10	1.9	0	0.0	10	2.2
Race/Ethnicity						
Black/African American	157	29.9	16	26.7	141	30.3
Hispanic or Latino	134	25.5	17	28.3	117	25.2
White	165	31.4	23	38.3	142	30.5
Asian	21	4.0	2	3.3	19	4.1
Other or missing	48	9.1	2	3.3	46	9.9

- A similar high proportion of individuals with acute and established HIV infection were linked to care within 3 months of diagnosis (91.7% vs. 90.5%, p=0.78).
- Among patients who linked to care within 3 months, initial median CD4 counts and viral loads were higher among patients with acute vs established infection (561 vs 474 cells/mm^3 and 69,520 vs 45,866 copies/ml)
- Among the 36 participants with AHI who had 12-month follow up information, 86.1% (n=31) were retained in medical care and 65% (n=26) were virally suppressed at their most recent visit. Participants with established HIV infection had comparable outcomes.

Figure 1. HIV care continuum outcomes among patients diagnosed with acute versus established infection, STOP study, New York City, October 2011-October 2013



Results continued

Table 2. Predictors of viral suppression among patients with 12 months of follow up information, STOP study, New York City, October 2011-October 2013.

	Virally suppressed within 12 months of HIV diagnosis[1]		Not virally suppressed within 12 months of HIV diagnosis[2]		P-value[3]
	N	%	N	%	
TOTAL	**226**	100.0	**149**	100.0	
Age at HIV diagnosis					
<25 years	51	22.6	61	40.9	**0.0001**
≥25 years	175	77.4	88	59.1	
Gender					
Male	221	97.8	142	95.3	0.3736
Female	1	0.4	1	0.7	
Other or missing	4	1.8	6	4.0	
Race/Ethnicity					
White	84	37.2	38	25.5	**0.018**
Non-white	142	62.8	111	74.5	
HIV Status					
Acute HIV infection	26	11.5	14	9.4	0.5175
Established HIV infection	200	88.5	135	90.6	
HIV Testing Site					
Co-located HIV care and treatment available	84	37.2	40	26.9	**0.0376**
Co-located HIV care and treatment not available	142	62.8	109	73.2	

[1]Most recent viral load <= 200 copies/ml
[2]Most recent viral load > 200 copies/ml or no viral load
[3]P-values generated by $\chi 2$ or Fisher's exact test for significance

- Patients **aged 25 or older** at diagnosis (vs. <25 years), of **white race/ethnicity** (vs. non-white, p<0.02), and testing at a **facility co-located with treatment services** were more likely to achieve viral suppression within 12 months.
- *Median time to first viral suppression was 175.5 days (IQR 133.5-273.5, AHI) versus 149.5 days (IQR 105-217, established infection), (p<0.05).*

Conclusions

- We found high rates of linkage to care and viral suppression in this sample, with no differences for people diagnosed in the acute phase of HIV infection compared with those with established HIV infection at diagnosis.
- Time to viral suppression was longer for participants diagnosed with AHI.
- There may be a benefit in major HIV testing centers partnering with HIV care centers so that patients can be referred and linked to care seamlessly.
- Better strategies are needed for youth and racial/ethnic minorities to ensure they receive and benefit from early HIV treatment.

Limitations

The high rates of viral suppression seen in this study may not be generalizable outside of a research setting; only 30% of HIV infected people in the US are virally suppressed.

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