

R-134

Conference on
Retroviruses and
Opportunistic
Infections

Boston,
Massachusetts

February 3-6, 2008



Discordance in HAART Utilization Rates in HIV-1 Infected Adolescents in a Multisite U.S. Cohort

Agwu AL¹, Ellen J¹, Rustein R², Guar AH³, Siberry GK¹, Spector SA⁴, Warford, R⁵, and Gebo KA¹ for the HIV Research Network

¹Johns Hopkins University, Baltimore, MD, ²Children's Hospital of Philadelphia, Philadelphia, PA, ³St Jude's Children's Research Hospital, Memphis TN, ⁴University of California San Diego, San Diego, CA, US, ⁵St. Luke's-Roosevelt Hospital

Allison L. Agwu, MD

200 North Wolfe Street
Room 3145
Baltimore, MD 21287
Phone: 410-614-3917

Fax: 410-614-1491
Email: ageorg10@jhmi.edu

BACKGROUND & OBJECTIVE

With the rising HIV-1 rates in adolescents and young adults due to the survival of vertically-infected (VRT) children and new infections among adolescents through risk behaviors (RB), we examined and compared highly active antiretroviral therapy (HAART) utilization rates in adolescents with vertically acquired (VRT) versus behaviorally acquired (RB) HIV-1 infection meeting treatment criteria and enrolled in care in 2005.

METHODS

The HIV Research Network (HIVRN) is a consortium of 21 pediatric and adult clinical sites that provide primary HIV care. All adolescent patients (12-24 years old) with at least one CD4 count, viral load measurement, and data on HAART in 2005 were eligible for inclusion in the study.

Use of HAART was defined as ≥ 3 nucleosides or any use of ≥ 1 PI or NNRTI in combination with a nucleoside RTI; or a PI, NNRTI, nucleoside RTI combination.

Demographic, immune, virologic, HAART, OI prophylaxis, and clinical utilization were assessed using a cross sectional analysis. Patients were classified into four groups based on meeting the 2005 Department of Health and Human Services clinical treatment criteria (CD4 200-350cells/mm³, VL > 100,000 copies/ml) during the year of study by:

- 1) CD4 and VL
- 2) CD4 only
- 3) VL only
- 4) Neither CD4 or VL

Table 1. Demographic Characteristics of Study Population Stratified by Risk Group

	RB N=457	VRT N=227	p value
Median Age	22 (13-24)	15 (12-24)	<0.001
Male	292 (64%)	108 (48%)	<0.001
Race			0.05
Black	294 (64%)	136 (60%)	
Hispanic	80 (18%)	49 (22%)	
White	61 (13%)	40 (18%)	
Other	22 (5%)	2 (.01%)	
HIV Risk*			
MSM	236 (51%)	0%	
HET	210 (45%)	0%	
IDU	18 (4%)	0%	
VRT	0 (0%)	227 (100%)	

*Categories are not mutually exclusive

Table 2. Clinical Factors of Study Population Stratified by Risk Group

	RB N=457	VRT N=227	p value
Median CD4 (cells/mm ³)			<0.001
<50	492 (0-1730)	660 (2-2200)	
16 (3%)		6 (3%)	
50-200	31 (7%)	14 (6%)	<0.001
200-350	71 (15%)	14 (6%)	
350-500	117 (26%)	27(12%)	
>500	222 (49%)	166 (73%)	
Median HIV-1 RNA (copies/ml)			<0.001
<400	6700 (<50 - >750K)	400 (<50->750K)	
117 (26%)		132 (58%)	<0.001
400-10K	137 (30%)	46 (20%)	
10K-100K	151 (33%)	40 (18%)	
>100K	52 (11%)	9 (4%)	

Table 3. Pharmacy and Health Care Utilization by Risk Group

	RB N=457	VRT N=227	p value
Outpatient visits per patient/yr	4.96	6.97	<0.001
Hospitalization rate/100 PY	18.6	17.1	ns
Prophylaxis*			
PCP	42 (89%)	16 (80%)	ns
MAC	5 (83%)	12 (75%)	ns

*n(%): number (proportion) meeting criteria for prophylaxis receiving prophylaxis

Table 4. HAART Utilization Stratified by Treatment Criteria and Risk Group

	RB N=457	VRT N=227	p value
On HAART	194/457(43%)	198/227(88%)	<0.001
On HAART by Treatment Criteria:			
1) CD4 & VL	32/45 (71%)	7/7 (100%)	<0.001 *
2) CD4 only	36/69 (52%)	25/27 (93%)	
3) VL only	9/27 (27%)	2/3 (67%)	
4) Neither ¹	117/312 (38%)	164/190 (86%)	
*141 (31%) RB and 37 (16%) VRT met treatment criteria by categories 1-3 and of those, only 77/141 (55%) RB vs. 34/37 (92%) VRT were on HAART (p<0.001).			
¹ Subjects in category 4 may have met treatment criteria previously and therefore already be on therapy.			

CONCLUSIONS

- The majority of HIV-1 infected youth currently in the HIVRN cohort have been infected through risk behaviors.
- There were no differences in OI prophylaxis rates between RB and VRT youth.
- When meeting treatment criteria, RB youth were less likely to be on HAART than their VRT counterparts.

IMPLICATIONS

- The HIV-1 epidemic in this multi-site cohort of U.S. youth is changing from one of vertically transmitted infection to infection acquired through risk behaviors.
- As the Centers for Disease Control recommendation of universal opt-out testing is implemented, more HIV-infected youth in need of treatment will be identified.
- Identification of patient and provider barriers to HAART utilization is critical, particularly in the youth acquiring HIV through risk behaviors, a group with rising rates of infection.