VIRAL SUPPRESSION AND DRUG RESISTANCE AMONG HIV POSITIVE WOMEN AT HIGH RISK OF SEXUALLY-TRANSMITTED INFECTIONS ON ANTIRETROVIRAL THERAPY IN KAMPALA, UGANDA

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AIM

We aimed to assess prevalence and risk factors for unsuppressed viral load (VL) among HIV positive Female sex workers (FSW) on antiretroviral therapy (ART) in Kampala, Uganda.

METHODS

We conducted a cross-sectional study between January 2015 - December 2016 using routinely collected data at a research clinic providing services to women at high-risk. Plasma samples from women aged ≥18 years, on ART, were tested at least 6 months after ART initiation for HIV VL. Samples from FSW with unsuppressed VL (≥1000 copies/mL) were tested for HIV drug resistance by sequencing of partial polymerase gene. Sequences were submitted to Stanford University HIV Drug Resistance database analysis program and drug resistance mutations (DRM) identified using the 2009 WHO mutations list. Socio-demographic, sexual behaviour, clinical and VL data was extracted from records at the clinic. We used logistic regression to identify factors associated with unsuppressed VL.

RESULTS

Four hundred and thirty- two HIV positive women were included; mean age was 32.5 years (SD=6.5). Of these, 38 (9.0%) had unsuppressed VL. Of these, 94.7% (36/38) were retrieved for testing. Resistance testing was available for 78% (28/36), of which 82.1% (23/28) had at least one major DRM, most frequently M184V (70% [16/23]) and K103N (65% [15/23]). We observed a high frequency of Thymidine Analogue Mutations – 65.2% (15/23). Unsuppressed VL was associated with participant age [young age (18-24)] adjusted odds ratio (aOR) = 5.3 (95% CI: 1.6-17.9), self-reported ART adherence [non-adherence] aOR = 2.6 (95% CI: 1.2-5.8), CD4+ T-cell counts [≤350 cells/mm³] aOR= 3.1 (95% CI: 1.4-7.0).

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CONCLUSIONS ANS RECOMMENDATIONS

Prevalence of unsuppressed VL was low; however, we found a high proportion of DRMs among the women with unsuppressed VL. Younger age, non-adherence and low CD4+ T-cell counts (≤350) increased the odds of unsuppressed VL. Interventions targeting young women to improve viral suppression should be considered.

Table 1: Characteristics of HIV+ FSW and association with unsuppressed viral load in Kampala, Uganda

Variables	Suppressed	Not Suppressed	uOR (95% CI)	LRT	aOR(95% CI)
	(n (row %))	(n (row %))		p-value	
Overall (%)	394(91)	38(9)			
Age category				0.064	
35-54	142(94)	9(6)	1		
25-34	216(91)	21(9)	1.5(0.7-3.4)		1.9(0.8-4.7)
18-24	36(82)	8(18)	3.5(1.3-9.7)		5.3(1.6-17.9)
Level of education				0.048	
No education†	34(85)	6(15)	1		
Primary education	236(94)	15(6)	0.4(0.1-1.0)		0.4(0.1-1.1)
Secondary and above	124(88)	17(12)	0.8(0.3-2.1)		0.9(0.3-2.5)
Physical violence with sexual partners in past three months				0.464	
Not†	137(93)	11(7)	1		
Yes	257(90)	27(10)	0.8(0.4-1.6)		
CD4+ T-cell counts ≥6 months after ART initiation				0.01	
>350 cells/mm ³	231(94)	14(6)	1		1
≤350 cells/mm ³	163(87)	24(13)	2.4(1.2-4.8)		3.1(1.4-7.0)
Place of ART initiation				0.072	
Clinic initiated†	345(92)	29(8)	1		
Transfer-in	49(84)	9(16)	2.2(1.0-4.9)		1.7(0.5-5.9)
Adherence status				0.019	
Adherent†	333(93)	26(7)	1		
Self-reported non adherent	61(84)	12(16)	2.5(1.2-5.3)		2.6(1.2-5.8)
Duration of ART (in years) median (IQR)	2.3 (1.8-3.1)	2.7 (2.2-3.8)	1.2(1.0-1.4)	0.071	1.1 (0.8-1.4)