TABLE1: Baseline Characteristics of Cohort

Clinical and Programmatic Factors Associated with Low-level Viremia in West Africa

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BACKGROUND

- Low-level viremia (LLV) is linked with poor outcomes in persons with HIV
- Poor adherence to antiretroviral therapy (ART) is associated with LLV
- Lack of data on LLV in West Africa
- Study aim was to identify clinical and programmatic characteristics associated with LLV at the first viral load result post-ART initiation

METHODS

- Database: IeDEA West Africa baseline 12,398 observations (Years 2016-2021))
- Eligibility for cohort analysis – first viral load result available 12(±6) months post-ART initiation
- Retrospective cohort analysis
- Primary outcome was LLV, defined as plasma HIV RNA 51- 999 copies/ml
- Response variable for multinomial regression analysis was viral load categories
- Independent variables included
  - WHO clinical stage at ART initiation
  - natal sex, initiated on DTG, Country

At univariate analysis, male sex, WHO clinical stage and country were significantly associated with LLV

In multivariate analysis, ART initiators at WHO clinical stage 4 compared to WHO stage one, had 2.0 times odds of low level viremia at first viral load result

RESULTS

- Baseline characteristics -62% female, mean age 39(±11) years, 33% initiated DTG, 5.4% WHO clinical stage 4, Ivory Coast contributes most (38%) to cohort
- There was a trend toward association for DTG-based regimen at ART initiation and viral load response category (p=0.067) (Table 1)
- WHO stage 4 compared to WHO stage 1, had 2.044 (1.193, 3.505 p=0.0093) times odds of LLV at first VL result, post ART initiation 12(±6) months, when adjusted for DTG initiation, sex, and country (Table 2)

Table 1: Result of Univariate Analysis

Characteristic (n=6367)	Suppressed (n=5010) ≤50copies/ml	LLV (n=720) 51-999 copies/ml	Viremic (n=636) ≥1000 copies/ml	Chi Sqr
Male (n=2570)	1959(76.2)	370(14.4)	241(9.4)	P<.0001
Female (n=3796)	3051(80.4)	350(9.2)	395(10.4)	
DTG Regimen				
No (n=4272)	3390(79.3)	383(9.0)	499(11.7)	P=0.0669
Yes (n=2094)	1620(77.4)	337(16.1)	137(6.5)	
Country				
Benin (n=2005)	1562(77.9)	272(13.6)	171(8.5)	P=0.0273
Burkina Faso (n=635)	501(78.9)	74(11.7)	60(9.4)	
Ivory Coast (n=2422)	1896(78.3)	239(9.9)	287(11.8)	
Nigeria (n=1050)	872(83.0)	92 (8.8)	86(8.2)	
Togo (n=254)	179(70.5)	43(16.9)	32(12.6)	
WHO Clinical Stage (n=2564)	**n=2052**	**n=259**	**n=253**	
Stage 1 (n=795)	668(84.0)	74(9.3)	53(6.7)	P<.0001
Stage 2 (n=903)	739(81.8)	85(9.4)	79(8.7)	
Stage 3 (n=728)	544(74.7)	79(10.9)	105(14.4)	
Stage 4 (n=138)	101(73.2)	21(15.2)	16(11.6)	

Table 2: Adjusted Multinomial Logit Model by sex, DTG & country

Effect Ref = WHO Stage 1	Viral Load Category Ref=Suppressed	OR	95%CI	p-value
WHO Stage 2	LLV	1.046	(0.752, 1.454)	0.7903
WHO Stage 2	Viremic	1.341	(0.932,1.929)	0.1137
WHO Stage 3	LLV	1.358	(0.968, 1.905)	0.0761
WHO Stage 3	Viremic	2.378	(1.676, 3.374)	<.0001
WHO Stage 4	LLV	2.044	(1.193, 3.505)	*0.0093*
WHO Stage 4	Viremic	1.977	(1.088,3.593)	0.0254

CONCLUSIONS

- In a multinational West African cohort of PWH, WHO clinical stage 4 was found to have statistically significant association with LLV at first VL result
- These findings provide critical information for targeted interventions to identify persons at risk of LLV in West Africa and mitigate adverse clinical consequences

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