Prevalence and risk factors associated with HIV/Hepatitis B co-infection among HIV positive patients attending a large hospital in Northern Uganda

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Background: The available data concerning hepatitis B virus (HBV) infection in Uganda are limited, particularly in the case of people living with HIV/AIDS (PLWHA), who do not generally undergo routine hepatitis testing when starting antiretroviral therapy (ART). We aimed to determine the prevalence and correlates of the risk of HBV infection, and the effect of co-infection on the outcomes of ART among HIV clients in a busy HIV clinic in a referral hospital in Northern Uganda

Patients and methods: A random group of 1000 PLWHA attending the outpatients' clinic of St. Mary's Hospital, Gulu, Uganda were systematically selected to undergo a rapid hepatitis B surface antigen (HbsAg) after administering a questionnaire. HIV care parameters were obtained from client files. Multivariate logistic regression and general linear model were used for the analysis

Results: 950 of the 985 evaluable patients (77% females; mean age 42.8 years) were receiving ART. The overall prevalence of HBsAg was 7.9% (95% confidence interval [CI] 6.2-9.6%), and was significantly lower among the females (6.8% vs 11.7%; p=0.020). The factors independently related to HBV infection were having lived in an internally displaced persons' camp (adjusted odds ratio [AOR] 1.76, 95% CI 1.03-2.98; p=0.036) and having shored housing with HBV-infected people during childhood (AOR 3.30, 95% CI 1.49-7.32; p=0.003). CD4+ cell counts were significantly lower in the HBV+ patients (p=0.025), and a better CD4+ cell response to ART inversely correlated with co-infection (AOR 0.88; 95% CI 0.79-0.98; p=0.030)

Conclusions: The observed prevalence of HBV among the PLWHA, though high, may be underestimated. Having family contact and living in refugee camps may suggest person to person HBV transmission which could necessitate the extension of HBV vaccination to PLWHA. A lower prevalence among HIV clients compared to the regional high values (above 17 percent) could indicate the importance of antiviral therapy in possible HBsAg seroreversion, to be explored in future studies

Table 1: Predictors of HBsAg positivity in the population of 950 PWH receiving ART (logistic univariate and multivariate analysis)

Univariate					Multivariate				
	OR	OR lower limit (95%)	OR upper limit (95%)	p-value	OR	OR lower limit (95%)	OR upper limit (95%)	p-value	
Gender									
Female	1				1				
Male	1,815	1,094	3,011	0,021	1,574	0,867	2,857	0,136	
Refugee camp									
no	1				1				
yes	1,657	1,022	2,686	0,041	1,760	1,039	2,982	0,036	
HBV in the compound									
no	1				1				
yes	3,696	1,831	7,463	<0,001	3,309	1,495	7,324	0,003	
Don't know	1,013	0,547	1,876	0,967	0,786	0,399	1,548	0,486	
Current ALT (x 1 U/L)									
	1,006	0,997	1,015	0,221	1,003	0,993	1,012	0,609	
ΔCD4 (x 100 cells/mm³)									
	0,910	0,840	0,986	0,022	0,884	0,791	0,988	0,030	
Months of therapy (x 1 month)									
	0,995	0,989	1,002	0,140	0,997	0,990	1,004	0,411

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