Management of HIV and Chronic Hepatitis B Co-infection in Beaumont Hospital 2018-2023

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Background

Owing to common methods of transmission and reduced rates of clearance in people living with human immunodeficiency virus (HIV) (PLWH), rates of chronic infection with hepatitis B virus (HBV) are higher amongst PLWH compared with the general population. [1] HIV/HBV coinfection increases both morbidity and mortality when compared with those caused by either infection alone. [2] Hence, alteration to provision of routine HIV care is required.

We aim to audit outpatient assessment and management of patients living with HIV/HBV co-infection in Beaumont Hospital.

Methods

A database of co-infected patients has been maintained by ID clinical nurse specialists since 2018. An excel data collection tool was developed to collect clinical and virological data points from electronic medical records. Data collected is recorded as n (%) or median (IQR) unless otherwise stated.

Results

There were 52 patients identified by service providers who were co-infected with HBV and HIV; of these, 38 (73.1%) had sufficient electronic health record data available. Participant characteristics are included in **Table 1**.

Of the 38 patients included in the analyses, 8 (21.1%) had a positive hepatitis C (HCV) Ab, and 6 (15.8%) had an AIDS-defining illness. Where known, the largest acquisition risk was injecting drug use, which identified 6 patients (15.8%).

A detectable HIV viral load was observed in 2 (5.3%) patients, whereas 8 (21.1%) had a detectable HBV viral load [1555 (688-160170) copies/ml]. CD4+ cell count was 454 cells/uL (353-689). **Fig.1**

Regarding HBV specific serology, 18 (47.4%) patients were HbsAg positive; of these, 5 (13.2%) were HbeAg positive. **Fig.2**

Within the HbsAg positive group, 1 (5.6%) patient was not receiving tenofovir (as part of an ART regimen) or entecavir, and 3 (16.7%) were tested for hepatitis D virus (HDV). Of the 3 patients tested for HDV, all tested negative.

Assessment for liver disease with hepatic ultrasonography revealed that 21 (55.3%) patients had no radiological evidence of liver disease, and 5 (13.2%) had documented cirrhosis. A further 3 (7.9%) patients did not have any hepatic imaging.

The number of patients lost to follow up was 6 (15.8%). A further 3 (7.9%) patients had since deceased.

Fig.1: Rates of virologic suppression

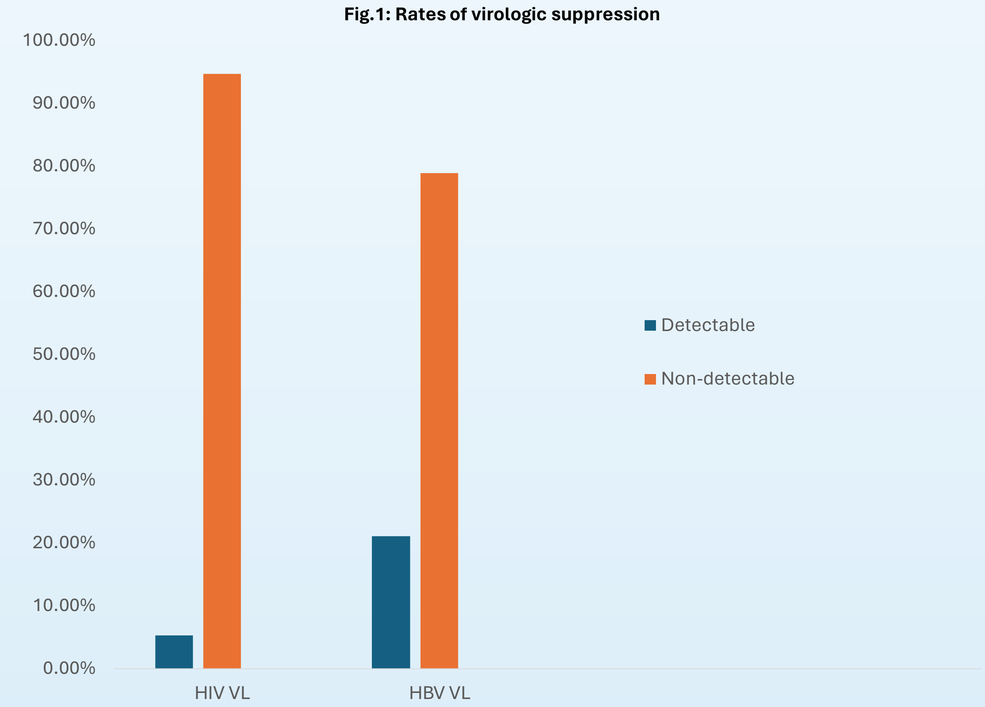

Fig.2: HBV serology

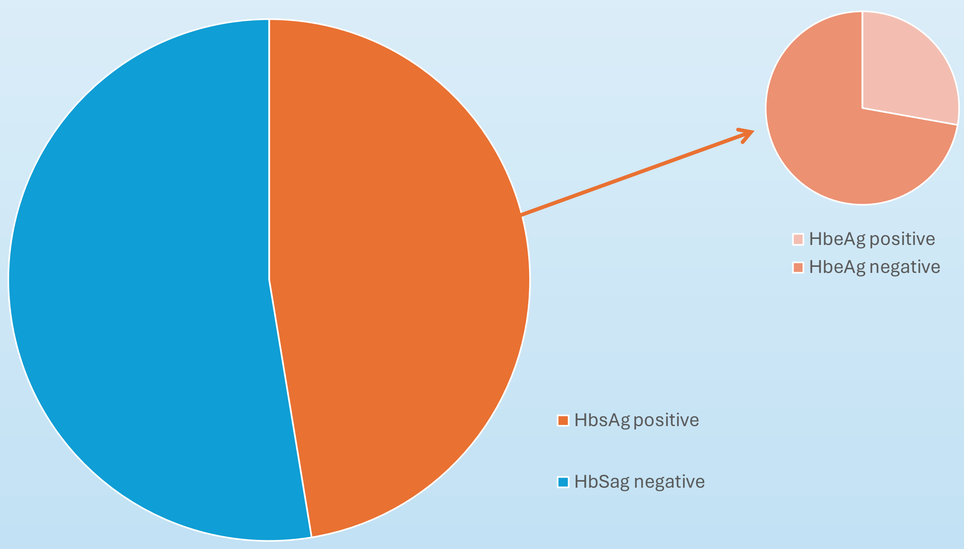

Table 1: Participant Characteristics

Characteristics (n=38)	n (%)	Median (IQR)
Age (Years): median (IQR)		51.1 (37-75)
Sex (Male): n (%)	28 (73.7%)	
Race:		
European	10 (26.3%)	
African	13 (34.2%)	
Not documented	15 (39.5%)	
HIV Specific Factors		
CD4 count (cells/μL): median (IQR)		454 (353-689)
Virological suppression (VL <40 cp/ml)	36 (94.7%)	
HBV Specific Factors		
HbsAg positive	18 (47.4%)	
HbeAg positive	5 (13.2%)	
Virological suppression (VL <40cp/ml)	30 (78.9%)	
Receiving entecavir/tenofovir treatment regimens	37 (97.4%)	
Hepatic Ultrasonography		
No evidence of liver disease	21 (55.3%)	
Steatosis	9 (23.6%)	
Cirrhosis	5 (13.2%)	
No imaging	3 (7.9%)	

Conclusion

We observe high rates of infection with HCV, cirrhosis and loss to follow-up in this relatively young cohort. We also observe high rates of circulating HBV surface antigen in patients with HIV virologic suppression. Testing for HDV in patients with a positive HbsAg was low. Patients are largely on appropriate antiviral therapy for HBV.

References:

[1] Leumi, S. *et al.* (2019a) 'Global burden of hepatitis B infection in people living with human immunodeficiency virus: A systematic review and meta-analysis', *Clinical Infectious Diseases*, 71(11)
[2] Kourtis, A.P. *et al.* (2012) 'HIV–HBV coinfection — a global challenge', *New England Journal of Medicine*, 367(24), pp. 2362–2362.