HIV infection in African American Patients with HBV Seen in an Urban Medical Center

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Jing Wang M.D. [1], Anirudh R. Damughatla D.O. [1], Mohamad Khaled Almujarkesh M.D. [1], Astha Saini D.O.[1], Paul Naylor Ph.D.[1], Murray Ehrinpreis M.D. [1], Milton G Mutchnick M.D. [1]

[1]Wayne State University/Detroit Medical Center, Detroit, MI

INTRODUCTION

- Hepatitis B virus (HBV) is understudied in the African American (AA) population, a population with a greater incidence of HIV co-infection.
- Objective of this study: evaluate the differences in pretreatment status and treatment response to HBV anti-viral medications in AA patients with mono-HBV and AA patients with HIV-HBV co-infection.

METHODS/DEMOGRAPHICS

- EMR data obtained from patients with HBV DNA measurements and two visits to clinic before 2021 (n=229)
- Patients were 70% AA, 22% Asian/Middle East, and 8% Caucasian individuals, and most (115) were not on treatment at their earliest visit.
- HIV-HBV patients were younger than the mono-HBV patients at first visit (42 vs. 51 years p<0.0005) and predominately AA males (98%).
- In contrast to mono-HBV patients, no HIV-HBV patients were Asian.
- Given the predominant AA population, three groups of AA patients were defined: 1) Mono-HBV not on treatment, 2) Mono-HBV on treatment, and 3) HBV-HIV co-infected on treatment with HBV-specific anti-virals. (Figure 1)
- Statistical analysis was done utilizing t-tests (ANOVA and paired) for continuous variables and mosaic plots with Pearson chi-square analysis for character variables

Racial Distribution in Each Group of Patients

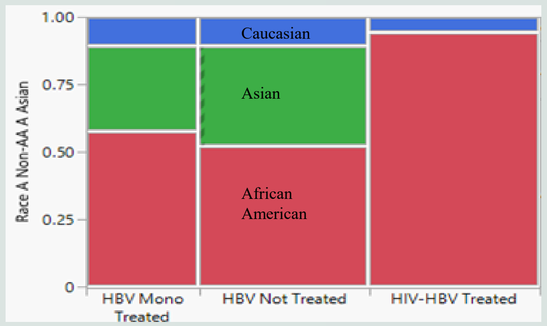

Figure 1: Racial distribution in each of the three groups who were evaluated for response to treatment/no treatment in the study. Only the AA individuals were used in the study.

RESULTS

Effect of Treatment/No Treatment on Viral Load and Fibrosis in AA HBV Patients

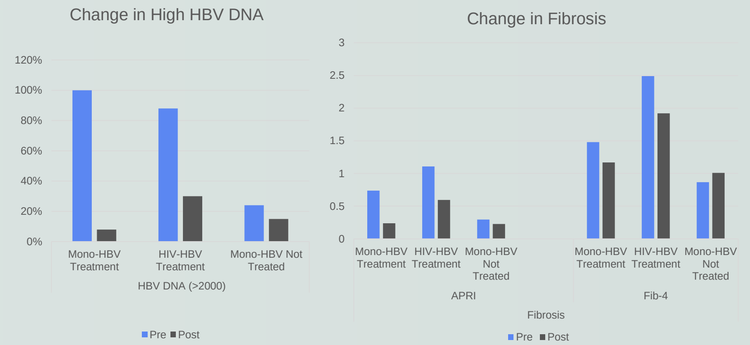

Figure 2: Shows the change in virial load (high HBV DNA) and fibrosis (APRI and FIB-4) is graphed as a function of treatment or no treatment for matched pairs of African American patients at least 1 year apart. All HIV-HBV patients were treated whereas only mono infected HBV patients with active infection (High HBV DNA and inflammation) were treated.

See table 1 for more details and p values. While treatment improved all three assessments, HBV African Americans coinfected with HIV were less likely to improve compared to mono-infected individuals.

Table 1: Change in HBV DNA and Fibrosis with Treatment in AA Patients

HBV DNA	Pre	Post	p-value	Outcome
Mono-HBV Treatment (n=25)	100%	12%	p=0.001	**decrease** in HBV DNA
HIV-HBV Treatment (n=39)	97%	30%	p=0.001	**decrease** in HBV DNA
Mono-HBV Not Treated (n= 44)	20%	15%	p=0.55	**no change** in HBV DNA
APRI				
Mono-HBV Treatment (n= 24)	0.738	0.238	p= 0.012	**reduction** in fibrosis
HIV-HBV Treatment (n= 45)	1.107	0.596	p=0.002	**reduction** in fibrosis
Mono-HBV Not Treated (n= 43)	0.295	0.228	p=0.076	**no change** in fibrosis
Fib-4				
Mono-HBV Treatment (n=24)	1.48	1.17	p=0.237	reduction **not significant**
HIV-HBV Treatment (n=45)	2.49	1.92	p=0.17	reduction **not significant**
Mono-HBV Not Treated (n=43)	0.868	1.01	p=0.037	**increase** in fibrosis

RESULTS

- In untreated AA population, 98% of HIV-HBV patients had high HBV DNA (>2000 IU/ml) in contrast to 51% of mono-HBV patients.
- Mono-HBV patients subsequently treated had high HBV DNA (100%) and were more likely to be HBeAg positive (13/28=54%) as compared to patients who were not treated and were HBeAg negative (39/40=97%).
- Less than half of HIV-HBV patients were HBeAg positive (35/55=45%), and all were treated.
- Treatment response shown in Table 1. HBV DNA was more likely to decrease in Mono-HBV than HIV-HBV (30% vs. 12%). As measured by APRI, fibrosis declined significantly with treatment compared to FIB-4, which did not.

CONCLUSIONS

- In our clinic population, AA HBV patients were more likely to be co-infected with HIV than non-AA patients.
- Mono-treatment patients were more likely to be treated if they were HBeAg positive and had high HBV DNA than HIV-HBV patients who were more likely to have seroconverted to HBeAg negative.
- HIV-HBV patients were less likely than mono-HBV patients to have a decline in high HBV viral load but were similar with respect to a reduction in fibrosis as defined by APRI.

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