

Session: 238. Hepatitis A, B, and C
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Background. Approximately 730,000 Americans are estimated to have chronic hepatitis B (HBV) infection, but recent studies have identified gaps in HBV care. Our aim is to characterize the HBV care cascade at the Veterans Affairs Maryland Health Care System (VAMHCS).

Methods. We used administrative VA data sources to identify patients enrolled at VAMHCS with a positive hepatitis B surface antigen (HBsAg) result within the VA from October 1, 1999 through February 7, 2018. Non-Veteran employees, Veterans who had died, or those with confirmed resolution of HBV infection were excluded. Chronic HBV infection was defined as a second positive HBsAg result or detectable HBV DNA >6 months later, or if included in the medical record. Resolved HBV infection was defined as undetectable HBsAg in someone with previously positive HBsAg.

Results. We identified 159 patients with a history of detectable HBsAg; only 68 (43%) had confirmatory testing to verify chronic HBV infection. Most patients with confirmed HBV (90%) were male, Black (75%; 18% Caucasian, 5% Asian), with a mean age of 62 years (with standard deviation of ± 12 years). Among patients with confirmed chronic HBV, 91% were seen by a provider at least once after diagnosis where HBV was addressed in the assessment and plan, 93% had e-Antigen testing, 41% had fibrosis staging (via transient elastography, liver biopsy, or FibroSure), 85% had at least one time screening for hepatocellular carcinoma (HCC), 100% had ALT testing at least once, 84% had ALT > upper limit of normal (men 30 U/L, women 19 U/L), 62% had HBV treatment at some point.

Conclusion. This analysis reveals that within the Veteran population followed at the VAMHCS, less than half of those with initial detectable HBsAg have had confirmatory testing, and while the majority of patients with confirmed chronic HBV were by providers for HBV, less than half of patients received recommended fibrosis staging. More than half (62%) received treatment and the majority (84%) have had liver imaging at least once. The cascade of HBV care highlights multiple areas for targeted improvement of the care of Veterans with chronic HBV.

Disclosures. All authors: No reported disclosures.

2195. Effectiveness of a Dual-Test Strategy and Software Modifications for Mitigating and Preventing Hepatitis B Virus (HBV) Exposures in a Dialysis Unit
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Background. Yearly, the number of U.S. patients needing dialysis increases by 5%. Unlike patients infected with Hepatitis C or HIV who require only standard precautions during dialysis, patients with HBV infection must be segregated. Given the prevalence of HBV, first time dialysis patients could be infected with HBV and inadvertently dialyzed in a nonsegregated setting, especially if dialysis is urgent. Following such an event, we sought to minimize subsequent exposure risk to roommates of the exposed patients if/when they seroconverted before their serology and HBV-DNA results were available. The high volume of patients needing dialysis, and limited resources, made segregating all exposed for 6 months logistically impossible. We also optimized a widely used electronic medical software program to prevent future incidents.

Methods. An exposure was defined as any non-immune patient concurrently dialyzed in the same room with the index case (horizontal; $n = 4$) or dialyzed on the same machine that was cleaned (but not bleached and heat treated) immediately after the index patient (vertical; $n = 1$). All received HBV vaccine and immunoglobulin, and all of the dialysis machines were sequestered, bleached, and heat treated after each dialysis. All patients were monitored for seroconversion (SCV) with weekly HBSAg and DNA. The dialysis position of the vertical exposure was moved to last of the day. Root causes of a patient's serologic status escaping verification included: (1) having only a single manual verification step; (2) gaps in a popular medical software (Epic Verona, WI); (3) urgent initiation of the first dialysis session; and (4) automatic importing of lab results. A highly visible "HBV" column on the dialysis census and a "hard stop" in electronic ordering were added.

Results. At 1-year follow-up, there were no questions of false-positives, no HBV DNA detections, SCVs, or further incidents.

Conclusion. We used both DNA and HBSAg for monitoring the exposed, because using only DNA would have risked missing an inter-dialysis SCV due to its 4-day turnaround time. Although HBSAg can be falsely positive from vaccination, results were available in ≤ 24 hours. As there are no specific recommendations for optimum SCV monitoring and mitigating this type of event, others may find our approach useful.

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2196. Effect of Depression, Anxiety, Stigma, and Disclosure on Quality of Life Among People Living with Hepatitis B Infection in Dalian, China
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Background. In China, chronic hepatitis B virus (HBV) infection is a major public health problem with ~6% of the population chronically infected. We investigated the effect of depression, anxiety, stigma, and disclosure on health-related quality of life (HRQoL) among people living with chronic HBV infection (CHB) in Dalian city, Liaoning, China.

Methods. Using a cross-sectional study design, 401 subjects with CHB were studied from January 2017 to September 2017. Study measures included Beck depression and anxiety inventory, WHOQOL-BREF, Toronto Chinese HBV Stigma Scale, and a questionnaire, which collected sociodemographic characteristic and disclosure of positive HIV status to sexual partners. The primary outcome was HRQoL score. A linear regression model examined the association between HRQoL and the potential risk factors including stigma, disclosure, depression, anxiety, and socio-demographic factors. Stigma, disclosure, depression, and anxiety are the covariates of interest. Age, sex, education, medical insurance, cirrhosis, other chronic diseases, and years of diagnose were adjusted in the model.

Results. Majority of participants were males (251, 62.59%), married (37.41%), and completed high and middle school (67%). Four factors of Depression, anxiety, stigma and disclosure had negative associated with QOL physical, psychological, social and environmental domains ($P < 0.05$) among CHB patients. Depression was the independent factor significant negative associated with HRQoL ($P < 0.0001$). Patients' age had a significantly negative association with HRQoL in the psychological domain ($P = 0.0083$). Patients' education level had a significantly positive association with HRQoL for all four domains.

Conclusion. Our study is the first time to evaluate psychosocial factors affecting the HRQoL among people living with CHB in Dalian. Depression significantly affects the HRQoL among people living with CHB in Dalian, China warranting the urgent need for screening, early diagnosis, and implementation and integration of psychological interventions as part of routine care.

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2197. Hepatitis B Reactivation in Patients with Malignancies Undergoing Treatment for Hepatitis C Infection with Direct-Acting Antivirals

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Background. Reactivation of hepatitis B virus (HBV) can occur in patients after cancer therapies. Direct-acting antivirals (DAAs) are the effective therapies for hepatitis C virus (HCV) infection, and HBV reactivation in HCV/HBV co-infected patients treated with DAAs has been reported. We analyzed the risk of HBV reactivation among HCV/HBV co-infected cancer patients being treated with DAAs.

Methods. We prospectively followed patients with any type of cancer and HCV treated with DAAs between January 2014 and January 2018 at MD Anderson Cancer Center. Information on demographics, use of radiation, chemotherapy, immunotherapy, or anti-CD20 antibodies, and anti-HBV therapy were collected. All patients had the following tests at baseline, 2 and 4 weeks after initiation of DAAs, at end of treatment (EOT), and 12 weeks after completion of DAAs: alanine aminotransferase, total bilirubin, HBV surface antigen (HBsAg), hepatitis B core antibody (anti-HBc), and HBV DNA and HCV RNA levels. We defined the following outcomes by AASLD-recommended parameters: HBV reactivation (HBsAg reverse seroconversion, HBV DNA > 2 log compared with baseline, HBV DNA > 3 log if HBV DNA was undetectable, or > 4 log if baseline was unavailable), hepatitis flare (ALT increase ≥ 3 times baseline and > 100 U/L), and HBV-associated hepatitis (HBV reactivation and hepatitis flare). Patients were followed for 12 weeks after completion of DAAs.

Results. Of 169 cancer patients treated for HCV infection, 2.4% ($n = 4$) had chronic HBV infection (HBsAg+/anti-HBc+), and most (3/4) of these were on anti-HBV therapy. Past HBV infection (HBsAg-/HBcAb+) was noted in 30% (51/166), and none received anti-HBV therapy. Of these, 37% (19/51) had cancer therapy within 6 months prior to DAA treatment. HBV reactivation did not occur in any co-infected patients. Two patients had hepatitis flare, but none developed HBV-associated hepatitis.

Conclusion. This is the first prospective study evaluating HBV reactivation in HCV/HBV co-infected cancer patients receiving DAAs. The risk of HBV reactivation in these patients seems to be low. Future studies with a larger cohort of co-infected cancer patients allowing personalized risk stratification are needed.

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Inc.: Grant Investigator, Grant recipient; Vertex Pharmaceuticals: Grant Investigator, Grant recipient.

2198. Increased Global Incidence and Altered Demographic Profile of Hepatitis Delta Virus (HDV)

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Background. A significant increase in the yearly incidence of hepatitis delta virus (HDV) diagnosis in hepatitis B virus (HBV) patient populations has been identified through analysis of global infectious disease datasets. Currently, HDV is classified as a non-notifiable infectious disease in many countries around the world. Kuschner *et al.* reported over 90% of HBV-positive patients are not being tested for HDV (2015). Together, the non-notifiable status of HDV and the noncompliance in testing potential HDV carriers presents a significant barrier in active surveillance of changes in the incidence of HDV. Therefore, a study was designed to evaluate the global incidence of HDV using datamining approaches.

Methods. Datasets containing yearly HDV and HBV incidence were utilized in this study including the National Health and Nutritional Examination Survey (NHANES) datasets and 14 additional datasets obtained through data-mining of global infectious disease datasets. These global datasets of reported yearly HDV and HBV diagnoses and demographic data ranging between 1999 and 2016 were analyzed.

Results. Epidemiological analysis of infectious disease datasets from 15 countries identified a significant increase in the incidence of HDV relative to HBV-positive patients starting in 2011. Within the United States, analysis of NHANES datasets identified an increase in the incidence of HDV diagnosis among HBV-positive individuals from 5% in 1999–2010 to 58% in 2016. Comparative analysis of the yearly reported incidence of HDV and HBV in 14 additional countries identified a significant increase in the incidence of HDV in the same time period. Modeling of the collective spatio-temporal profile of the increase in HDV incidence is suggestive of a shared common intermittent exposure pattern of infection. The fastest growing demographic in the HDV-positive populations is in patients greater than 65 years of age.

Conclusion. Our analysis identified a significant increase in the incidence of HDV diagnoses spanning three continents starting in 2011 and may be suggestive of an alteration in HDV transmission pattern. Active surveillance of HDV in the United States and worldwide is warranted to further define these observed changes in HDV incidence.

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2199. Antiviral Therapy Use in Hepatitis B-Infected Pregnant Women

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Background. Perinatal Hepatitis B Virus (HBV) transmission results in chronic disease in 90% of infected infants. Immunoprophylaxis reduces perinatal HBV infections by 95%. For women with viral loads >200,000 IU/mL, antiviral therapy during pregnancy is recommended to further reduce perinatal transmission. We sought to characterize antiviral therapy use in Hepatitis B-infected pregnant women.

Methods. The Centers for Disease Control and Prevention (CDC) provided auxiliary funding for five Perinatal Hepatitis B Prevention Programs. We analyzed data collected retrospectively from Hepatitis B-infected pregnant women in Georgia, Michigan, New York City, Philadelphia, and Wisconsin identified as having live births during April 2016–December 2017. We assessed maternal antiviral therapy use during pregnancy; HBV DNA levels included in our analysis were from the last result available prior to delivery for each woman.

Results. We identified 3,971 pregnant women with HBV infection; of these, 803 (20.2%) had information regarding prescription of antiviral therapy during pregnancy. HBV DNA levels were known for 1,907 women, of whom 9.1% ($n = 173$) had HBV DNA >200,000 IU/mL nearest delivery. Antiviral therapy was prescribed for 26.5% ($n = 213$) of women with information. Antiviral therapy was more commonly prescribed for women aged <30 years vs. ≥30 years (32.0% vs. 23.1%, $P = 0.0069$), Asian/Pacific Island race vs. White or Black (42.7% vs. 2.8% and 6.2%, respectively, $P < 0.0001$), and those whose HBV was monitored by a gastroenterologist/hepatologist vs. maternal fetal medicine or infectious disease specialist (55.1% vs. 10.3% and 36.4%, respectively, $P < 0.0001$). Tenofovir was prescribed for 92.9% of women prescribed antiviral therapy; lamivudine was prescribed for 3.8%.

Conclusion. Antiviral therapy was prescribed for one-fourth of Hepatitis B-infected women with information and was more commonly prescribed for women who were younger, Asian/Pacific Island race, and who received Hepatitis B care from a

gastroenterologist/hepatologist. Although these are preliminary findings and data collection is ongoing, opportunities may exist to improve guideline-concordant antiviral therapy use among Hepatitis B-infected pregnant women.

NOTE: Prevention of perinatal HBV transmission is an off-label use of antiviral therapy.

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This abstract has been withdrawn at the author's request.