Title: Epidemiology of hepatitis B virus infection among hepatitis C virus (HCV) infected patients treated within the HCV elimination program in Georgia

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Background and Aims: Patients with hepatitis C virus (HCV) and hepatitis B virus (HBV) co-infection are at an increased risk of developing liver disease compared with mono-infected individuals. The Georgia Hepatitis C Elimination Program was established in 2015 and offers free treatment with direct-acting antivirals (DAA) to all persons with HCV infection. The program recommends and covers HBV screening for all HCV infected patients. We describe the epidemiology of HBV/HCV co-infection among patients treated within the HCV elimination program.

Method: Data for this analysis comes from the national electronic HCV elimination program treatment database. Persons aged ≥18 years with active HCV infection who initiated HCV treatment within the program during May 2015–September 2021 were included. Patients were grouped as HCV mono-infected, HCV/HBV coinfected (HBV surface antigen [HBsAg] positive), and HBV immune but not infected (HBV surface antibody or HBV core antibody positive, HBsAg negative). We present descriptive analysis and adjusted prevalence ratios (aPR) with 95% confidence intervals (CI) for HCV/HBV coinfection compared to HCV mono-infection for demographic, risk, clinical and treatment outcomes. aPRs were adjusted for age, sex, HCV genotype, and history of injection drug use in a multivariable model.

Results: As of September of 2021, 71,931 adult persons were treated for HCV and screened for HBV within the HCV elimination program in Georgia, 70% (n=50,103) of them had HCV mono-infection, 28% (n=2,202) were immune to HBV and 2% (n=1,626) had HBV/HCV co-infection. Overall, the majority were 18–45 years old (48%; median age 46, interquartile range 39–55 years), male (78%), did not report a history of injection drug use (57%). HBV/HCV co-infection was more common among persons who were 18–45 compared to 46–60 years old (aPR: 1.7, 95% CI: 1.5–2.0), male (aPR: 1.3, 95% CI: 1.1–1.6), reported a history of injection drug use (aPR: 1.3, 95% CI: 1.1–1.5), had post-treatment ALT >80 U/L compared to <40 U/L (aPR: 2.3, 95% CI: 1.6–3.4), and did not achieve sustained virologic response (aPR: 1.4, 95% CI:1.1–1.9).

Conclusion: HBV/HCV co-infection is associated with higher risk of liver disease, post-treatment elevated serum ALT, and treatment failure with DAAs. To improve outcomes for patients with HBV/HCV co-infection, it is essential to evaluate them for HBV treatment. Promoting preventative measures, such as HBV vaccination among patients with HCV infection, is also important to reduce mortality from hepatitis.