Key Summary of Conference Abstract

Changing National and Regional Prevalence of Hepatitis B Virus Infection (HBV) Among Reproductive-Aged Women and Children in the US, 2011-2017

Background

- Recent increases in hepatitis C virus (HCV) infection have been reported in the United States, at least in part due to injection drug use. From 2006 to 2014, HCV infection rates nearly doubled among US women of reproductive age, with increases also noted in young children.[1] The factors associated with increased rates of hepatitis C could also lead to increased rates of hepatitis B.
- **Objective:** For this study, investigators examined the national- and state-level prevalence of hepatitis B (HBV) infections among reproductive-aged women and young children, utilizing data from the Quest Diagnostics Health Trends™ national laboratory database.

Methods

- The prevalence of HBV infection was determined for women 15 to 44 years of age and children 0 to 2 years of age, at the national level and state level.
  - Four clinical subgroups were evaluated: 1) chronic HBV infection (HBsAg+ for ≥6 months); 2) acute HBV infection (HBsAg+ with HBcAb IgM+ and/or ALT> 250 IU/mL); 3) HBV exposure (HBcAb+); 4) HBV immunity due to vaccination (HBsAb+ without HBcAb+).
- To examine the association of universal birth-dose vaccination, implemented in 1991, on HBV infection trends, investigators compared the prevalence of HBV infection in women born before 1992 and those born in 1992 and later.

Results

- At the national level, the prevalence of new chronic HBV infections decreased substantially from 2011 (0.83%) to 2017 (0.19%) (P<0.001). However, it increased in the states of Mississippi, Kentucky, and West Virginia.
- The national prevalence of new acute HBV infection did not significantly change between 2011 and 2017, remaining stable at about 0.03%. However, rates increased substantially in Kentucky, Alabama, and Indiana.
- HBV exposure rates increased among women born in 1992 or later (from 0.6% in 2011 to 1.0% in 2017; P<0.001), and also among women born earlier (2.7% in 2011, 3.3% in 2017; P<0.001). The increase in HBV exposure was more pronounced in Kentucky, Mississippi, West Virginia, Ohio, and Maryland.
- Overall, HBV immunity declined from 56.1% in 2011 to 42.2% in 2017 (P<0.001). However, the decrease was due to declining immunity among women born in 1992 or later; in women born before 1992, immunity rates remained stable at approximately 46%.
- HBV immunity rates among children 2 and younger remained stable during the study period, at approximately 90%; the prevalence of acute (0.22%) and chronic (0.01%) HBV infections was stable, as was the rate of HBV exposure (4.9%).

Conclusions

- In the United States, among women of reproductive age, chronic HBV infections have declined and acute HBV infections remained stable during the study period. However, in central Appalachian states, new HBV infections increased at rates similar to those of HCV,[1] which may be reflective of the illicit injected opioid epidemic in this geographic area.
- Rates of vaccine-related immunity declined among reproductive-age women born after universal birth-dose vaccination was implemented, but not among those born before implementation.

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Authors

Tatyana Kushner,[1] Zhen X Chen,[2] Stacy Tressler,[3] Harvey W Kaufman,[4] Edward C Jones-López,[5] Judith Feinberg,[6] Norah Terrault[7]

Affiliations

[1] Liver Diseases, Icahn School of Medicine at Mount Sinai, New York, NY
[2] Quest Diagnostics, Secaucus, NJ
[3] Cancer Institute, West Virginia University, Morgantown, WV
[4] Quest Diagnostics, Needham, MA
[5] Quest Diagnostics, San Juan Capistrano, CA
[6] School of Medicine, West Virginia University, Morgantown, WV
[7] University of California, San Francisco, CA

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Reference

1. Ly KN, Jiles RB, Teshale EH, et al. *Ann Intern Med*. 2017;166:775-782.