California Department of Public Health – March 2019

Hepatitis D Quicksheet

Epidemiology and significance

Hepatitis D virus (HDV) is a defective, single-stranded RNA virus that requires the presence of hepatitis B virus (HBV) in order to replicate. Thus, HDV infection occurs only in individuals who are also infected with HBV. An estimated 9-42% of individuals with chronic HBV infection in the United States are coinfected with HDV.[1] Acute HDV infection can either occur at the same time as acute HBV infection, or as a superinfection in an individual already infected with HBV. Most individuals with simultaneous acute coinfection recover fully; the HDV infection will only persist if the HBV infection becomes chronic. In contrast, most individuals with chronic HBV who are superinfected with HDV go on to develop chronic HDV infection. Chronic HBV/HDV coinfection is associated with increased severity of disease, including cirrhosis, hepatocellular carcinoma, end-stage liver disease, and death.

Symptoms and presentation

The symptoms of HDV infection are indistinguish-able from those of HBV infection; however, the risk of severe, acute disease and fulminant hepatitis are higher with acute HDV infection than with HBV infection alone.

Mode of transmission

HDV is transmitted through contact with blood or other bodily fluids of the infected person, including through sexual contact. Vertical transmission appears to be rare.[2]

Laboratory testing

The most commonly available test for Hepatitis D in the United States is a total anti-HDV assay. Total anti-HDV usually becomes positive approximately 4 weeks after acute infection. HDV RNA PCR testing is increasingly available. HDV RNA PCR may become positive sooner than total anti-HDV, and may also be positive in chronic infections. HDV IgM, HDV RNA, and HDV antigen tests are less commonly available. These tests may be used in research or academic settings, and these results may also be reported to LHDs.

Period of communicability

Most immunocompetent adults shed virus in the stool and are infectious from two weeks before through one week after the onset of jaundice or elevation of liver enzymes, when concentration of virus in the stool is highest. In absence of jaundice, persons should be considered infectious for two weeks before through one week after the onset of hepatitis symptoms.

Case definition

HDV infection is not nationally notifiable, and there is no CSTE case definition. For the purpose of reporting to CDPH, the following case definition for a confirmed case should be used:

- Laboratory evidence of acute or chronic HBV infection, with at least one of the following tests positive: HBsAg; HBcIgM; HBV DNA; HBeAg

AND

- Any positive HDV test: total anti-HDV; HDV IgM; HDV RNA, HDV antigen

Note that clinical criteria are not included in the case definition, given the complexity of sorting out acute vs. chronic HDV infection in an HBV-infected individual.

Prevention

For individuals not infected with HBV, the primary way to prevent HDV infection is immunization against HBV. Individuals with HBV infection can avoid potential exposure to HDV by avoiding exposure to blood and bodily fluids, including not sharing needles and using barrier methods with sexual activity.

[1] Gish, R. G, Yi, D. H. et al. (2013) Coinfection with hepatitis B and D: epidemiology, prevalence and disease in patients in Northern California. *Journal of Gastroenterology and Hepatology, 28*(9), 1521-5; Patel, E. U., Thio, C. L., et al. (2019) Prevalence of hepatitis B and hepatitis D virus infections in the United States, 2011-2016. *Clinical Infectious Diseases*.

[2] Sellier, P. O., Maylin, S. et al. (2018) Hepatitis B virus-hepatitis D virus mother-to-child co-transmission: a retrospective study in a developed country. Liver International, 38(4).

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