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Hepatitis B and Hepatitis D Virus: Diagnosis, Treatment

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Abstract

Each hepatitis virus Hepatitis A, B, C, D, E, and G poses a distinct scenario to the patient and clinician alike. Since the discovery of each virus, extensive knowledge regarding epidemiology, virology properties, and the natural clinical and immunologic history of acute and chronic infections has been generated. Basic discoveries about host immunologic responses to acute and chronic viral infections, combined with virology data, has led to vaccines to prevent Hepatitis A, B, and E and highly efficacious antivirals for Hepatitis B and C. These therapeutic breakthroughs are transforming the fields of herpetology, transplant medicine in general, and public and global health.

Keywords: Viral Hepatitis, Hepatitis A, Hepatitis B, Hepatitis C, Hepatitis D, Hepatitis E, Hepatitis G

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Introduction

Viral hepatitis, a significant health care burden worldwide, is defined as virally mediated liver inflammation. Numerous viruses are known to cause liver inflammation, including but not limited to, Epstein-Barr virus, Herpes simplex virus, and Cytomegalovirus. However, the hepatotropic viruses, termed A to E, are the most common culprits. Most of the hepatotropic viruses are acute and self-limiting, although forms B, C, and We have the potential to become chronic [1]. Various genotypes of the viruses exist, with some being more prominent in specific geographical locations than others. The vast majority of deaths are caused by Hepatitis B and C. Treatment goals differ depending on the pathogen, but broadly include prevention of transmission, eradication, and suppression. The World Health Organization has responded to the expanding burden of disease by developing "The Global Strategy for Viral Hepatitis," which outlines their goals aimed at preventing further transmission and providing access to care for those currently living with the disease. In this review of viral hepatitis infections, we discuss the pertinent clinical information and recent organizational guidelines for each of the individual hepatitis viruses while also synthesizing this information with the latest research to focus on exciting future directions for each virus [2].

The distribution of HCV infection among varying age groups is dependent on the region in focus. For example, the incidence of infection is highest among individuals aged 30 to 49 in the United States, mostly via injection drug use. Still, individuals aged 50 and greater have the highest incidence of infection in other nations [2]. The highest burden of HCV infection is seen in Africa and Asia.

Symptoms of Hepatitis B

A person will typically experience symptoms within 14–28 days.

There are some types of Symptoms:

1. Jaundice
2. Fever
3. Diarrhoea
4. Dark-collared urine
5. Malaise
6. Abdominal pain
7. Nausea
8. Low appetite

Diagnosis and Treatment

Trusted Source makes a hepatitis A diagnosis by performing blood tests. These tests can detect antibodies that are specific to hepatitis A. There is no cure for hepatitis A, but treatment can help manage symptoms, and most people. Trusted Source usually recovers. The recovery process may take weeks or even months [3].

As briefly discussed above, Hepatitis C is almost universally a chronic, asymptomatic disease until it ultimately causes advanced fibrosis and cirrhosis, when it has symptoms that overlap with a variety of advanced liver diseases. As such, diagnosis relies

entirely on serologies. Given the frequency of HCV in the general population, the asymptomatic nature of early HCV, and the ease of treatment (discussed more below) [4]. It is recommended that all adults in the United States be screened for HCV at least once and that high-risk individuals be screened more frequently. In most patients, diagnostic testing consists of a hepatitis C antibody test with a reflex to HCV RNA viral load if the antibody test is positive. Alternatively, in high-risk patients, some physicians may choose to send an HCV RNA level regardless of antibody result. If any test yields a positive result, further characterization of liver function including a fibrosis assessment will help direct further treatment and screening procedures [5].

Hepatitis D

Hepatitis D is another viral hepatitis infection that can be acute and chronic. As with other hepatitis infections, it causes damage to a person's liver [7]. However, these infections only occur in people who already have hepatitis B. The hepatitis D virus cannot establish itself otherwise. Around 5%Trusted Source of all people with a hepatitis B infection will develop a hepatitis D infection [8].

Symptoms of Hepatitis D

Most people with hepatitis D are asymptomatic.

When symptoms present, they are similar to those of other hepatitis infections.

Abdominal pain

1. Nausea
2. Vomiting
3. Fever
4. Jaundice
5. Confusion
6. Bruising
7. Bleeding

Diagnosis and treatment

Doctors will make a hepatitis D diagnosis if they can find specific hepatitis D antibodies within a person's bodily fluids. This process involves laboratory testing. There is no known treatment for acute hepatitis D. Although some experimental work has shown that certain medications might help with chronic hepatitis D, the Food and Drug Administration (FDA) is yet to approve these treatments [9]. The hepatitis D infection can cause severe liver damage, and in some cases, a person may need a liver transplant [10].

Conclusion

As a group, viral hepatitis represents an on-going global health concern. Acute viral hepatitis infections HAV and HEV tend to be self-limited infections with little-to-no long-lasting effect, and both vaccines and improved sanitation conditions will decrease the burden of disease over time. Moreover, ever-improving understanding of the risk factors for acute liver failure from acute hepatitis and experimental supportive care options will aid in further reducing the impact of acute viral hepatitis. For those already infected, effective and safe antiviral therapies are also available. Persons infected with HBV as well as HDV, HCV, and/or HIV has a higher risk for progression of disease and complications and must have rigorous surveillance and treatment. Finally, to realize the goal of HBV elimination, improved linkage to care is needed, at-risk populations need to be vaccinated, infected populations need to be diagnosed and treated, and curative therapy with finite treatment duration is needed. We suggest an algorithm for screening, diagnosis, and linkage to care that starts with universal screening of persons residing or coming from areas with a prevalence of HBV infection of 2% or higher; evaluation of infected persons by at least an assessment of liver enzyme, HBeAg, and HBV DNA levels; and, according to local guidelines and resources, the administration of antiviral therapies for persons at risk for disease progression. Chronic viral hepatitis infections HBV and HCV on the other hand, often result in cirrhosis and death if left untreated. While vaccination for HBV is highly effective in reducing transmission, and treatments for HBV are effective in reducing HBV viral load and progression of liver disease, an effective cure for HBV remains elusive. Conversely, an effective vaccine for HCV has not been achieved, but highly effective treatments cure HCV in nearly 100% of cases and are now revolutionizing the fields of transplant medicine. Despite unique barriers, there are on-going global efforts to eliminate chronic viral hepatitis, and given substantial progress, we are hopeful that this ambitious goal will be realized.

Acknowledgement

None

Conflict of Interest

None

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