Viral hepatitis: A significant threat to health worldwide

28 July 2023

#WorldHepatitisDay

HEP CAN'T WAIT!

Viral hepatitis is inflammation of the liver caused by a viral infection that is usually silent meaning that over **80% of those infected are unaware of their disease**.1

There are five main types of hepatitis virus, known as **Hepatitis A, B, C, D and E**. While Hepatitis A and E are usually contracted by consuming food or water contaminated with the virus, Hepatitis B, C and D are transmitted through contact with infected blood or other bodily fluids.1 Hepatitis B and C can also be transmitted through sexual contact or passed from mother to child.1

Of the five hepatitis viruses, hepatitis B and C are the most concerning. Together, they are responsible for nearly 8000 daily new infections and account for 80% of worldwide liver cancers.2

Although the five hepatitis viruses and their impact on the human body differ, **all can pose a threat to the health of the liver.**

Every 30 seconds, someone loses their battle with viral hepatitis, resulting in 1.34 million worldwide deaths each year.

Viral hepatitis is the most common cause of primary liver cancer, and many of the deaths caused by viral hepatitis are the result of liver cancer.2

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Focus on Hepatitis A

Background

Hepatitis A infections, most common in low- to middle-income countries, do not cause chronic liver disease but can result in debilitating symptoms related to liver injury (including fever, loss of appetite, nausea, and jaundice)3

Epidemiology

It is estimated that 100 million hepatitis virus infections – of which 1.5 million are symptomatic – are responsible for 15-30'000 deaths per year.

Treatment

As there is no specific treatment, recovery may be slow and take several weeks or months. 4
However, several vaccines are available worldwide for pre- or post-exposure prophylaxis5.

Remember to practice good hygiene habits !

Focus on Hepatitis B

Background 5, 6

Hepatitis B is a potentially life-threatening liver infection caused by the Hepatitis B virus. It is a major global health problem. It can cause both acute and chronic infection and puts people at high risk of death from cirrhosis and liver cancer.

A vaccine against Hepatitis B has been available since 1982. The vaccine is 95% effective in preventing infection, the development of chronic disease and liver cancer due to Hepatitis B.

Chronic Hepatitis B6

Chronic Hepatitis B is a leading cause of cirrhosis of the liver and liver cancer worldwide. Children infected with the virus before the age of five are most likely to develop the chronic form of the infection.

Epidemiology of Hepatitis B6

Approximately 257 million people worldwide are chronically infected with Hepatitis B. Although less than 2% of the population in Western Europe and North America is chronically infected with Hepatitis B, chronic infection is common in some regions of the world. Between 2 and 6% of the adult population in sub-Saharan Africa and South-East Asia is thought to be chronically infected. As with most viral hepatitis infections, newly infected persons usually do not experience any symptoms.

Treatment of Hepatitis B6

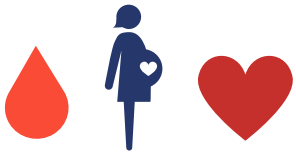
Current treatments for chronic Hepatitis B are safe and effective but, currently, they can only suppress the virus replication, they cannot eradicate it or cure the patient. This slows the progression of cirrhosis and reduces the incidence of liver cancer. Hepatitis B, however, can be prevented by vaccination and the WHO recommends that all infants receive the Hepatitis B vaccine as soon as possible after birth.

Vaccination can prevent infection - get vaccinated !

"Stopping chronic infection at birth is important to decrease substantially the danger of developing chronic liver disease and liver cancer, the pathologies that can occur in adults with chronic Hepatitis B Virus infection. For this reason , we need to continue to push the implementation of HBV vaccine strategies at birth."

- Prof. Antonio Bertoletti, Emerging Infectious Diseases Program, Duke-NUS Medical School, Recipient of the EASL Recognition Award 2023

Focus on Hepatitis C



Background

The Hepatitis C virus was first isolated and discovered in 1989.3 By the 25th anniversary of its discovery, the joint research efforts of scientists around the world had led to the identification of a breakthrough cure.3 These advances in Hepatitis C, from discovery to cure, represent some of the most exciting discoveries in both liver disease and medicine.7

The Hepatitis C virus is blood-borne.4 Although strategies to develop a vaccine began in the nineties, and several candidates are in development, there is no vaccine for Hepatitis C and prevention is only possible through avoiding contact with contaminated blood.8 The Hepatitis C virus can cause two types of infection: acute and chronic.4

Acute Hepatitis C8

In acute infections, the immune system clears the virus from the body without any treatment. An acute infection is rarely life-threatening. Between 15 and 45% of people who contract acute Hepatitis C will spontaneously clear the infection within six months of acquiring the infection..

Chronic Hepatitis C8

Chronic Hepatitis C infection occurs when the body does not spontaneously clear the virus. This is the case for 55 to 85% of people who contract Hepatitis C. Around 15 to 30% of people with chronic Hepatitis C will go on to develop liver cirrhosis within 20 years.

Epidemiology of Hepatitis C

Hepatitis C causes about 700,000 deaths per year worldwide.8 It is estimated that 15 million people in the WHO's EU Region are living with Hepatitis C, representing 2% of adults.5 However, the prevalence among people who inject drugs may be as high as 98%.9

Treatment for Hepatitis C

Chronic Hepatitis C can be treated with antiviral therapy to stop the virus from multiplying inside the body, thereby preventing liver damage. Cure rates for Hepatitis C with novel therapies can now reach up to 90% for the majority of patient groups.8 These exciting treatments, many of which are still being investigated, are called direct acting antiviral agents (DAAs).4 They directly and specifically target the Hepatitis C virus in every stage of its lifecycle.

There are different strains (genotypes) of the virus and some respond better to treatment than others.8 This means that patient management can still pose complex challenges alongside wider patient concerns such as response to previous treatments and the stage of liver disease, which need to be considered.

Screening & early diagnosis can increase the chance of successful treatment 4. Don't wait!

2030

To achieve the 2030 WHO goal of eliminating viral hepatitis C by 2030 EASL recommends: that all barriers to the uptake of healthcare services by PWID be removed by changing policies and discrimination that hinder access. This includes the decriminalisation of minor, non-violent drug offences and the adoption of an approach based on public health promotion, respect for human rights and evidence.

Focus on Hepatitis D

Background
The hepatitis D requires the hepatitis B for its replications. The coinfection of hepatitis B and D is considered to be one of the most severe forms of viral hepatitis infection due to a more rapid progression towards liver-related death and liver cancer[10].

Epidemiology
Globally, it is estimated that hepatitis D affects nearly 5% of people who have a chronic hepatis B infection. Co-infection could explain 1 in 5 cases of liver disease and liver cancer in individuals suffering with hepatitis B.

Treatment
A 48-week treatment with pegylated interferon-α is recommended for the treatment of hepatitis D. Although treatment response is low, it is associated with lower likelihood of disease progression. [2, 10]

Prevention of Hepatitis D
There are no specific recommendations for the prevention of hepatitis D infection, however, prevention of hepatitis B infection through vaccination can reduce the risk of being infected.[10]

The best way to prevent Hepatitis D is to prevent Hepatitis B infection

Current screening practices miss a sizeable number of HDV cases. Read EASL's recommendations in the EASL Clinical Practice Guidelines! DOI: https://doi.org/10.1016/j.jhep.2023.05.001

Focus on Hepatitis E

Background
There are 8 genotypes of hepatitis E, but only genotypes 1 and 2 are known to cause human illness. Infection with this hepatitis virus is usually self-limiting and resolves within 2-6 weeks without treatment.[11] However, it may cause chronic infections in immunocompromised patients[2].

Epidemiology
Infection occurs worldwide but is more common in low- to middle-income countries, areas with limited access to clean drinking water, and conflict areas. Outbreaks usually following periods of drinking water contamination with faecal matter leading to several hundred to several thousand infected persons[2].

Treatment
There is no specific treatment for this viral hepatitis infection as the disease is usually self-limiting. Immunocompromised patients can benefit from specific treatment with ribavirin or interferon in specific situations[11].

Prevention
Prevention is the most effective approach against hepatitis E infection. There are no FDA-approved vaccines in the USA, however a recombinant vaccine was approved in China.

Practice good hygiene and avoid consuming contaminated food and water

Read up on viral hepatitis in our Journal of Hepatology!

Hepatitis B

Seminar, 2022: Immunological biomarker discovery in cure regimens for chronic hepatitis B virus infection
https://www.journal-of-hepatology.eu/article/S0168-8278(22)00127-1/fulltext

Hepatitis C

Review, 2021: Non-epidemic HCV genotypes in low- and middle-income countries and the risk of resistance to current direct-acting antiviral regimens
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Review, 2020: Changing epidemiology, implications, and recommendations for hepatitis C in women of childbearing age and during pregnancy
https://www.journal-of-hepatology.eu/article/S0168-8278(20)33814-9/fulltext

Thematic Miniseries on HCV Cure: https://www.journal-of-hepatology.eu/hcv-miniseries

Hepatitis D

Review, 2021: The changing context of hepatitis D
https://www.journal-of-hepatology.eu/article/S0168-8278(21)00023-4/fulltext
Hepatology Snapshot, 2022: The hepatitis delta virus and chronic hepatitis D
https://www.journal-of-hepatology.eu/article/S0168-8278(22)00337-3/fulltext

Hepatitis E

Review, 2022: Chronic hepatitis E: Advancing research and patient care
https://www.journal-of-hepatology.eu/article/S0168-8278(22)00319-1/fulltext
Hepatology Snapshot, 2021: The rise of the hepatitis E virus
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11 World Health Organization. Hepatitis E Factsheet. Available from: https://www.who.int/news-room/fact-sheets/detail/hepatitis-e Last accessed: July 2023