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**A SYSTEMATIC REVIEW ON HEPATITIS**

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**ABSTRACT**

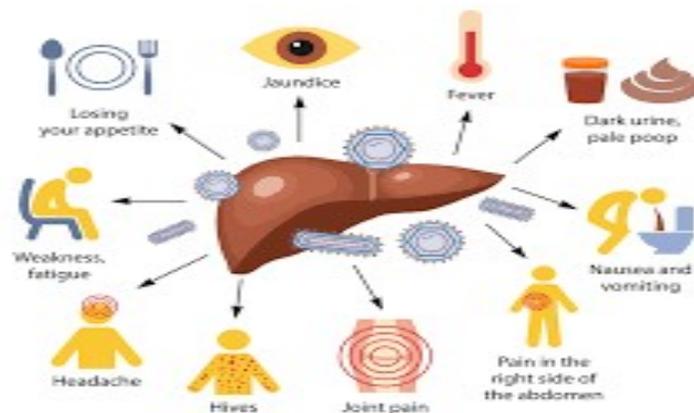
Hepatitis is a viral infection that affects liver. It belongs to the Hepadnaviridae family of viruses. HBV is endemic in Pakistan. Vaccine suppresses the growth of the hepatitis virus (HV), and when administered at delivery, it significantly lowers the chance of transmission from mother to child. Hepatocellular carcinoma which is one of the ten most common cancers worldwide, is closely associated with hepatitis B, and at least in some regions of the world with hepatitis C virus. Hepatitis B is a deadly infectious disease, which is increasing now days in Pakistan. Around world, 71 million people are living with hepatitis C virus (HCV) out which 7.1 million (10%) are present in Pakistan. There are several challenges that hinder elimination of HCV from Pakistan including the lack of patient awareness about the causes and transmission of disease, lack of affordability for investigations and drug treatment and lack of experienced healthcare professionals. Lack of effective medicine is also a factor in the suppression of disease. Antiviral medications can be used to treat chronic hepatitis infection. Cirrhosis can be treated to delay its course, lower the risk of liver cancer, and increase long-term survival. Treatment is only necessary for a small percentage of those with a chronic hepatitis B infection. It is concluded that hepatitis is a deadly disease which affects liver. There is a need of spreading of knowledge of this disease to people. Effective medicines will help to eliminate this disease.

**Keywords: Hepatitis, Hepadnaviridae, hepatitis virus (HV)**

## INTRODUCTION

A potentially fatal viral infection that affects the liver is hepatitis (Iannacone & Guidotti, 2022). The World Health Organization (WHO) estimates that 780,000 people worldwide pass away each year from hepatitis, which affects 240 million people globally on a chronic basis (Serle *et al.*, 2018). It is a DNA/RNA virus that replicates inside

the infected liver cells and belongs to the Hepadnaviridae family of viruses (hepatocytes)(Wang, Rudnisky, Belin, Ciolino, & Ophthalmology, 2018). The disease's most typical signs and symptoms are jaundice, diarrhea, nausea, stomach discomfort, and black urine (Tinôco & Freire, 2023).



Many times, during the acute stage, the symptoms are not noticeable. With roughly 9 million people infected and an increasing trend, HBV is endemic in Pakistan. Lack of knowledge and the absence of medical services are the most evident causes of this high infection rate (Bodrud-Doza, Shammi, Bahlman, Islam, & Rahman, 2020). There are various types of hepatitis, such as HA, HB, HC, HD, and HE. Some are DNA-based, and some are RNA-based (Xia, Qin, Ning, & Zhang, 2022). Different substances are

generated during the replication of DNA and RNA. The body creates several anti-bodies in response to hepatitis infection (Tiwari, Talreja, & Research, 2020). Several laboratory tests are routinely carried out for the diagnosis and separation of acute from chronic hepatitis. These antigens and antibodies serve as indicators of infection. After the original infection, hepatitis can be found in the blood stream (Sridhar *et al.*, 2018). Due to its expense and technological challenges, this test is not typically used as a

standard diagnostic test (Turner *et al.*, 2020). The identification of Hepatitis surface proteins which are regarded as serological markers in acute Hepatitis infection, is done using an enzyme-linked immunosorbent assay (ELISA) (Reddy *et al.*, 2015). The primary issue with this approach is the later generation of hepatitis antibodies, even though this test is often utilized for diagnostic purposes. Due to these restrictions, there is a critical need for laboratory tests that can identify diseases early on in order to lower the death rate (Chatellier *et al.*, 2016). Nearly all diseases, including malignancies and infectious diseases like hepatitis, begin with molecular alterations (Kellokumpu-Lehtinen *et al.*, 2019). Due to several restrictions, these alterations are typically unpredictable using standard laboratory techniques (Haight *et al.*, 2019). Raman spectroscopy has the capacity to detect these changes at the cellular scale at an early stage since each biomolecule produces a different peak in the Raman spectrum, creating molecular fingerprinting (Li *et al.*, 2020). Raman spectroscopy has become very popular in the realm of biomedical studies and medical diagnosis because of its selective character (Depoortere *et al.*, 2016). Although Raman spectroscopy has several benefits over commonly used laboratory procedures, it nevertheless has significant drawbacks (Chen

*et al.*, 2020). Hepatitis of some forms can be avoided with vaccination (Zaman *et al.*, 2020). Moreover, vaccine suppresses the growth of the hepatitis virus (HV), and when administered at delivery, it significantly lowers the chance of transmission from mother to child (Qiao *et al.*, 2019). Antiviral medications can be used to treat chronic hepatitis infection. Cirrhosis can be treated to delay its course, lower the risk of liver cancer, and increase long-term survival. Treatment is only necessary for a small percentage of those with a chronic hepatitis B infection (Pan *et al.*, 2020).

## DISCUSSION

Viral hepatitis has emerged as a major public health problem throughout the world affecting several hundreds of millions of people. Viral hepatitis is a cause of considerable morbidity and mortality in the human population, both from acute infection and chronic sequelae which include, in the case of hepatitis B, C and D, chronic active hepatitis and cirrhosis. Hepatocellular carcinoma which is one of the ten most common cancers worldwide, is closely associated with hepatitis B, and at least in some regions of the world with hepatitis C virus. Hepatitis B is a deadly infectious disease, which is increasing now days in Pakistan. This disease is also rooted in the

poverty and illiteracy. There are huge discrepancies in health conditions between rural and urban areas and among different socio-economic strata, which have also played role in increasing the burden of this deadly disease. Furthermore, multiple social and cultural barriers are prevailing in the country might play an important role in increasing the burden of this disease in the society. Thus, it is important to review the literature on the burden in Pakistan and to study those social and cultural barriers causing rise in the burden of Hepatitis B. Thus, the objective of this review was to synthesize the findings regarding the burden of Hepatitis B in Pakistan and to review the social and cultural barriers, which have resulted increased burden of the Hepatitis B in Pakistan. This would help Policy makers and Government of Pakistan to take some appropriate actions against the most common barriers, playing an important role in increasing the burden of the disease. Globally 71 million people are living with hepatitis C virus (HCV) out of which 7.1 million (10%) are present in Pakistan. Genotype 3 is the most common HCV type in the country. World Health Organization is working with health authorities in different countries for effective control of HCV, to reduce its incidence by 90% and to reduce hepatitis related mortality by 65% by the year 2030. There are several

challenges that hinder elimination of HCV from Pakistan including the lack of patient awareness about the causes and transmission of disease, lack of affordability for investigations and drug treatment and lack of experienced healthcare professionals. Other major contributors to achieve HCV elimination are lack of effective drugs and delayed regulatory approvals combined with compromised monitoring by health authorities and lack of robust epidemiological data. Efforts are needed to educate the public about the modes of transmission and prevention of HCV infection, and massively upscale screening along with treatment. There is a dire need to prevent more than 200,000 new infections that occur each year in Pakistan.

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