

HEPATITIS C IN PAKISTAN: AN ALARMING THREAT

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ABSTRACT

Hepatitis C virus (HCV) is one of the most widespread infectious diseases. It is becoming a major public health problem of developing countries, including Pakistan that has the second highest prevalence rate of HCV ranging from 4.5% to 8% (World Health Organization). There are various determinants that are contributing to the rising trend of hepatitis C in Pakistan. The most prevalent cause includes reuse of syringes and needles, usage of unsterile equipment, especially by local dentists and barbers, multiple sex partners, unscreened blood transfusions, unavailability of proper health care delivery system, and lack of awareness. The general public is either infected with the virus or they are most vulnerable of contracting it, due to several malpractices and misperceptions. Therefore, there is an urgent need to take preventive measures at primary, secondary and tertiary level to tackle this widespread disease.

Keywords: Hepatitis C, Causes, Prevention, Pakistan.

INTRODUCTION

"This is Hepatitis. Know it. Confront it". (Slogan of world hepatitis day)

The human body is made up of essential organs that work together for adequate functioning and maintaining homeostasis. Some essential organs of our body are brain, liver, heart, lungs and kidneys. Every organ has its own importance. If any one organ is affected the whole body suffers. Among them, the liver is a vital organ that processes and stores nutrients, filters the blood, fights infections and removes toxins. When the liver is inflamed or damaged, its function is affected. "Hepatitis" means inflammation of the liver. Many illnesses and conditions can cause hepatitis, for example, drugs, alcohol, chemical toxins, autoimmune diseases and certain viruses. When we speak in terms of viral hepatitis, the most common types are Hepatitis A, B, and C. Hepatitis C virus (HCV) is one of the most widespread blood borne virus and is associated with significant morbidity and mortality. World Health Organization (2002) estimates that about 3% of the world's population has been infected with HCV and that there are more than 170 million chronic carriers who are at risk of developing liver cirrhosis and liver cancer. In addition, it also states that countries with

high rates of HCV are Egypt (22% of population), Pakistan (4.95% of population) and China (3.2 % of population).

In terms of Pakistani context, WHO has rated Pakistan as second country in the world, having high rates of hepatitis C. Approximately 10 Million Pakistanis are affected with hepatitis C (Chaudhry et al, 2010). The general public is either infected with the virus or they are most vulnerable of contracting it, due to several malpractices and misperceptions such as unscreened blood transfusions, unavailability of proper health care delivery system, poverty, lack of education and above all, misuse of drugs. Thus, such an alarming situation has devastating implications for patients, families, health care professionals and society. This paper aimed to discuss the prevalence, natural history, causes, risk factors and preventive measures of hepatitis C.

Prevalence of HCV in Pakistan

In Pakistan, "The Serial infector" HCV rates vary among provinces, age groups and gender. The prevalence rate reported in Punjab is 6.7%, in Sindh 5%, in Baluchistan 1.5%, and in Khyber Pakhtunkhwa 1.1% (Umar & Bilal, 2012). The prevalence of hepatitis C among male population was found to be 53% while in female population was 47%

(Chaudhry et al, 2010). According to Waheed, Talha, Safi & Qadri (2009) six studies showed a percent prevalence of HCV in the pediatric population which was 1.72%. Furthermore, hepatitis C is rising significantly from the other viral infections. According to Pakistan Medical Research Council survey, it was concluded that hepatitis B was the common virus in chronic liver disease before 1995-1996, but after the identification of hepatitis C virus now this is becoming the leading causative agent (Ahmed, Arif, Alam & Qureshi, 2010). These epidemiological data suggest that hepatitis C rates have risen significantly over the past few years in Pakistan as well as in the entire world.

Natural History

Before understanding the disease occurrence, its progression and treatment strategies, it is essential to know about the disease's natural history. The investigators from the Centers for Disease Control first recognized the virus in 1989. Previously, it was formerly known as non-A non-B hepatitis because the blood samples were negative for both hepatitis A and hepatitis B. The host, agent and environment triad model have to be essential for the disease to occur. In the context of hepatitis C, the agent is the hepatitis C virus. It is a single stranded positive RNA virus (Akbar, Idrees, Manzoor, Butt & Awan, 2009). It is classified into seven major genotypes because mutations occur frequently during replication (Sharma, 2010). According to Waheed, Talha, Safi & Qadri (2009) the most prevalent genotype in Pakistan were 3a. The next factor of this model is the host which is only human. The last factor is the environment which plays a key role in the transmission of HCV virus into the host mainly through contact with the blood of an infected person.

Once transmitted to the host, the virus goes through various stages of disease progression termed as natural history. Events that occur in the natural history of an infectious disease are categorized into four stages. The first stage is the susceptible stage, which includes certain risk factors that make an individual vulnerable of disease occurrence. Second is the subclinical stage i.e. within 7-21 days after viral transmission HCV RNA becomes detectable in serum. The incubation period of HCV averages 6-8 weeks. Next is the clinical phase in which HCV RNA levels rise rapidly after

infection followed by a delayed increase of serum alanine aminotransferases (ALT) 4-12 weeks after an infection indicating hepatic injury (Maasoumy & Wedemeyer, 2012). Commonly reported symptoms include fatigue, nausea, abdominal pain, loss of appetite, mild fever, itching or myalgia and jaundice as the most specific liver related symptom. Last is the stage of disability and recovery. The majority of patients who acquire HCV do not spontaneously eliminate the infection and progress on to develop chronic HCV infection that results in liver injury which may lead to fibrosis and variable progression to cirrhosis (Wilder & Patel, 2014).

Causes and risk factors of HCV in Pakistan

On the other hand of the spectrum, the necessary cause of Hepatitis C is the HCV. However, it contains many sufficient causes that include risk factors in which IV drug users are at a higher risk for HCV infection. Secondly, the reuse of syringes and needles is considered as a main etiological factor towards increased HCV prevalence (Waheed, Talha, Safi & Qadri, 2009). Moreover, people in developing countries are usually anemic, and are more prone to traumatic injuries. If the blood itself is carrying pathogens, then the situation turns to be worst. About 1.2 to 1.5 million transfusions are carried out annually in Pakistan (Waheed, Talha, Safi & Qadri, 2009). In addition to that, third world countries like Pakistan have a burden of barbers who are illiterate and unaware of transmission of the virus through the repeated use of razors and scissors on different customers without sterilizing them. Others at high risk are hemodialysis patients, intranasal drug users, healthcare workers, individuals who have multiple sex partners or an HCV-infected partner, and infants born to HCV-positive women before. Lastly, it is also said that the fashion can be dangerous as well because tattooing, body piercing, and the use of infected manicure equipment increases the risk for HCV infection (Waheed, Talha, Safi & Qadri, 2009).

Treatment

Since no vaccine is available for treating HCV infection, therefore researchers focus on different antiviral therapies. Patients with HCV infection are usually treated with interferon therapy (INF) and ribavirin therapy because of their effectiveness and enhanced immune response

against HCV infection (Munir et al, 2010). Research shows that chronic HCV infected patients gives an end treatment response (ETR) i.e. 74.1% and sustained viral response (SVR) i.e. 98% to INF and ribavirin therapy in genotype 3 (Amir, Rahman, Jamal & Siddiqui, 2013). On the other hand, in Pakistan and other countries interferon therapy is not accessible for common people because of unaffordability. Therefore, the Food and Drug Administration (FDA) introduced PEG-INF Alpha 2a and PEG-INF Alpha 2b interferon therapies. Thus, the treatment approach is based on individual response to the therapy that facilitates the prognosis of disease condition.

Preventive measures

As some antiviral therapies are highly expensive, it is more preferable to emphasize prevention. Starting from primordial prevention, it aims to stop the development of risk factors for a disease in a population. This can be achieved by mass education and promoting a healthy lifestyle in childhood. Secondly, primary prevention can be achieved through safe injection practices, blood transfusion safety, sufficient sterilization of reusable material such as surgical or dental instruments and health education programs. For maintaining patient safety and providing protection, safe injection practices should be a part of Standard Precautions. Blood transfusion safety can be achieved by a collection of blood from voluntary donors from low risk populations, and testing of all the samples for transfusion transmissible infections and compatibility. WHO (2010) recommends that, blood should be screened for hepatitis C, hepatitis B, HIV, and syphilis. Moreover, health education programs should be launched in the institutions and community about hepatitis awareness and control. Secondary prevention activities include early detection of high risk groups through screening and medical management of disease in order to increase the chances of successful treatment and limiting cross-infection. Lastly, tertiary intervention aims to improve function and minimize the impact of established disease primarily liver damages, and delay the complications through rehabilitation.

HCV infection represents as a major threat to the Pakistani population as well as the health care providers. It is the

health care provider's responsibility to spread an awareness in hospitals and community settings about preventive measures of HCV so that its transmission can be controlled. WHO (2010) has proposed a strategy of behavior change among patients and health care providers through prescribing oral medication wherever possible and use a syringe or needle from a new and sealed packet for every injection. Another strategy is community engagement which is a key to ensure that people are aware of the risks of unsafe practices and can demand rational and sterile use of equipment. In addition, as a large proportion of health care in Pakistan is delivered by the private sector, so the proposed interventions must include private health care providers and be low cost and sustainable.

Recommendations

Further recommendations to reduce the burden of disease includes the development of diagnostic assays based on local genotype, which will be more sensitive, specific and economical. Due to the vital importance, HCV genotyping should be available in all clinical laboratories as a routine laboratory diagnosis and should be carried out before the start of an antiviral treatment. It is also recommended that the media should also take part in providing awareness about the preventive measures of HCV. Moreover, in collaboration with the health ministry, a health channel or medical awareness advertisements should be shown on television. The current treatment is neither economically nor fully effective in all patients and carries significant side effects such as the depression and suicidal ideation associated with interferon therapy. The need of the hour is to find out the new strategies and targets for local genotypes of HCV.

Conclusion

In conclusion, hepatitis C is one of the major causes of morbidity and mortality worldwide that need to be addressed and taken seriously. Therefore, it is time that health care providers assess the population and implement strategies at the primordial, primary, secondary and tertiary levels. As a health care professional, it is our responsibility to protect populations from HCV infection because everyone has a right to live healthy.

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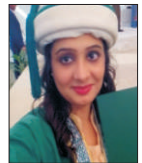
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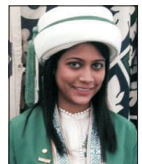
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