

Hepatitis C Prevalence and Preventive Strategies in Pakistan

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Abstract

Objective: To critically review the preventive strategies of Hepatitis C and its prevalence in Pakistan; and to find out any existing gap in health care delivery, so as to minimize the burden of this major health problem.

Research Design and Methods: This study follows systemic review method and includes randomized control trial studies which focus on preventive strategies of Hepatitis C. Strict inclusion and exclusion criteria for study selection were made and followed. Data's were properly extracted and analyzed to minimize bias. Different data base was used including Google Chrome, Google, Pub Med, Cochrane Review using key words as Hepatitis C prevalence and prevention in Pakistan.

Results: The results from Randomized control trials studies will compare the benefits in control and cases using risk reduction strategy, drug intervention and are expected to show huge benefits in cases group.

Conclusion: Health education, access to ARVs at government Hospital, stop reusing of syringes, ANC visit for pregnant women, good governance decreases prevalence of hepatitis C.

Introduction and background

Hepatitis C virus is a small (55–65 nm in size), enveloped, positive-sense single-stranded RNA virus of the family Flaviviridae. Hepatitis C virus is the cause of hepatitis C and some cancers such as liver cancer (Ferri, Clodoveo 2015).

Hepatitis C is liver infection caused by Hepatitis C virus (CDC, 2018). Approximately 75 to 80 % of who become infected with virus developed chronic infection, only 15 to 25 % who are infected with Hep c virus clear it from body (CDC, No date).

Hepatitis C is usually spread when blood from a person infected with the hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with the hepatitis C virus by sharing needles or other equipment to prepare or inject drugs. Before 1992, hepatitis C was also commonly spread through blood transfusions and organ transplants. After that, widespread screening of the blood supply in the United States virtually eliminated this source of infection (CDC, 2018).

The hepatitis C virus is a blood borne virus and the most common modes of infection are through exposure to small quantities of blood. This may happen through injection drug use, unsafe injection practices, unsafe health care, and the transfusion of unscreened blood and blood products (WHO, 2017).

Hepatitis C is found worldwide. Globally, an estimated 71 million people have chronic hepatitis C infection (WHO, 2017).

Hep C virus is largely a blood-borne virus, with very low risk of sexual or vertical transmission, A number of cultural or ritual practices have been proposed as a potential historical mode of spread for hepatitis C virus, including circumcision, genital mutilation, ritual scarification, traditional tattooing and acupuncture. (Shepard, 2005).

Hep C is endemic in Pakistan, according to national survey conducted in 2007-2008 Hep c prevalence is about 4.8% (Qureshi H,2010). There is significant connection between Hep C and reuse of syringes. These findings validate currently implemented strategies by the national program for the control of hepatitis viral infections, including widespread vaccination of newborns and high-risk groups, support of auto-disable syringes, promotion of infection control and patient safety, public health education, and management of needy Chronic liver disease patients as a poverty-reduction health intervention.

Hep c transmission appears to be prevalent accruing at healthcare and community level. Understanding HCV epidemiology in Pakistan is significant in developing and targeting cost-effective prevention and treatment interventions against HCV, in order to meet the global target of HCV elimination.

According to Dr. Saeed Akhter high prevalence of Hep c in Pakistan is multifactorial, this includes use of dirty syringes, failure to screen blood before transfusion, use of unhygienic dental instruments, reuse of razor blades by barbers and poor infrastructure for infectious waste disposal.

According to W H O (2017), Unsafe injections play a big role in transmitting hepatitis C. The Government of Punjab is the first province in Pakistan to address this issue by introducing a policy to ensure that 90 % of all syringes used in the health sector are auto-disable, meaning that they cannot be used more than once. In addition, it has launched a program to improve infectious waste control that includes building 39 incinerators in health facilities.

According to Human Development Index of the United Nations, Pakistan is ranked 134th of 174 countries due to its poor educational and health standards.

According to Arshad and Usman (No date) current prevalence in of HCV in Sindh is 2.55%. Punjab 5.46%, KPK 6,07%, Baluchistan 25.77% and in Fata 3.37%. Literature searches were performed in PubMed, and Google Scholar. Fifty different studies were screened for this review, ranging from those published during the years 2000 to 2013. By calculating the mean average of all studies, it was clear that HCV percentage prevalence in the adult population was 11.55%, blood donors 10.10%, pregnant women 4.65%, children 1.6%, patients with different diseases 24.97%, and injecting drug users had the highest prevalence at 51.0%. HCV genotype 3a prevalence was found to be 63.45%, the highest of all genotypes.

There are 1.8 million chronic HCV carriers in Sindh province, the reason for the spread of this disease is lack of awareness, self-medication, illegal practice of non-qualified medical practitioners who use single syringe for many patients, unhygienic instruments of barbers and dentists (Dawn,2010).

Presently no vaccination available against HCV. Hep C and can be prevented by not sharing items of personal hygiene that may be contaminated such as razors, nail clippers, scissors, and tooth brushes (Saleem 2010).

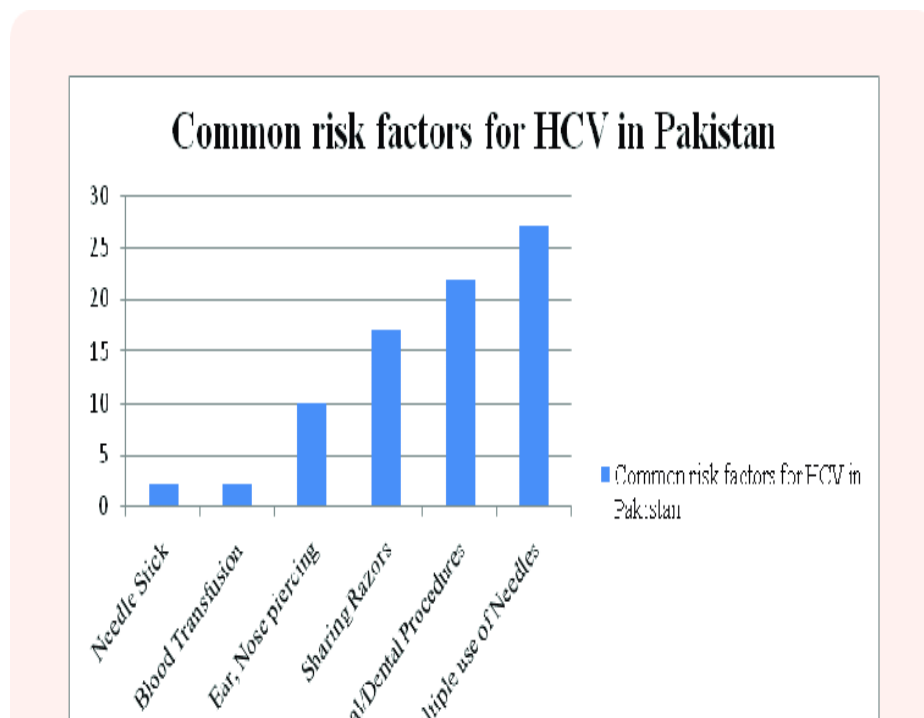


Figure 1. Prevalence (%) of HCV in Pakistan as per risk factors, showing risk factors on horizontal axis and percentage of prevalence of HCV on vertical axis

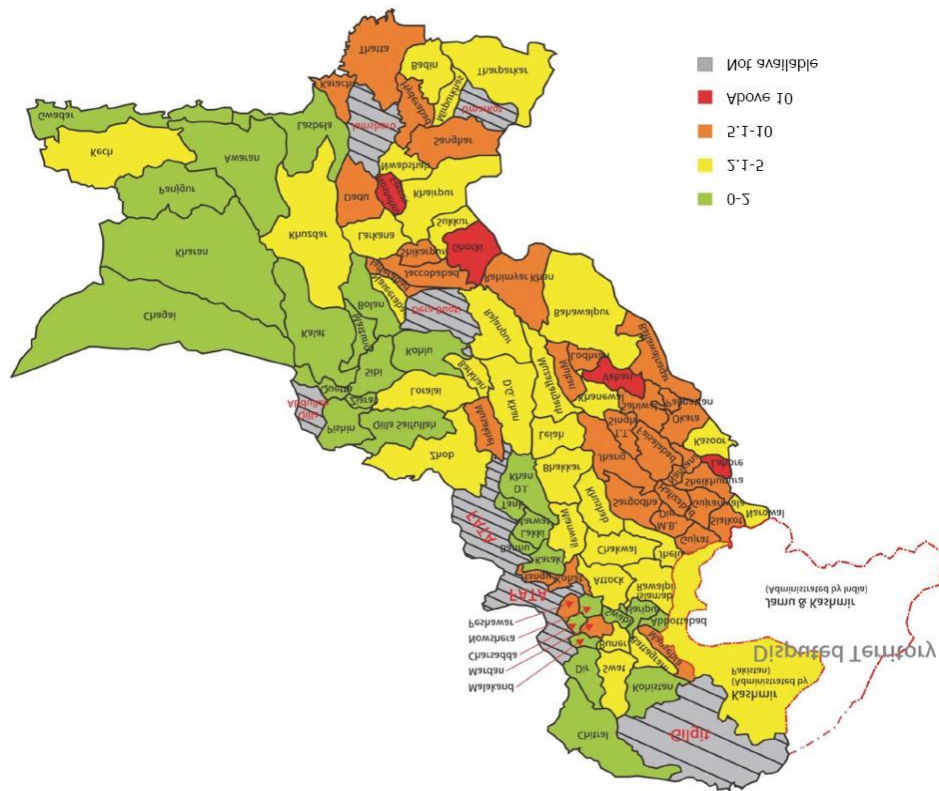


Figure 2. Hepatitis C virus prevalence and genotype distribution in Pakistan

Scholars have questioned why the government is failing to come up with a decisive preventive strategy that can curb the disease and help nations prolong the gift of life (Goyder et al., 2008). Therefore, the purpose of this systemic review is to carry out an investigation on current preventative strategies that are being implemented to help reduce this major health problem. Furthermore, in this review HCV background will be thoroughly discussed and a comprehensive critical analysis of literature will be undertaken of policies, books and other important material to make available an effective analysis. It is expected that after carrying out the intended critical analysis an overall conclusion will decide on what is need to improve the prevention strategies carried out in the Pakistan. At the end recommendations' will be made on the best way forward to promote better health among the citizens. On the long run this will ensure an effective approach in policy development on how the disease is to be successfully managed and controlled.

Rationale

Based on the evidence above, HCV is one of the preventable diseases; however, it may lead to serious life-threatening complications. Pakistan is facing a huge burden of this disease, as the number of people with diabetes is doubled since 1994 to 2012. Hepatitis C causes huge financial burden, as Government of Pakistan is spending its 2.8 billion of annual health budget on treatment of HCV and its complication.

To prevent this growing problem and reduce the morbidities and mortalities caused by diabetes, a systemic review was needed to find out the best preventative strategies that can be used to reduce the occurrence of HCV further in Pakistan.

Aim and objectives

Aim of this review is to critically review the prevalence and preventive strategies for Hepatitis c in Pakistan. So that a best preventive strategy can be identified that can be used to minimize the burden of this major health problem in Pakistan. The aim is also to find out any existing gap in the preventive strategies, that is causing increase incidence of Hepatitis.

Objectives

1. To provide a project that may increase awareness to various groups on the magnitude of the disease to enable communities to harness efforts in helping to reduce the prevalence of the disease.
2. To provide information that is detailed to government agencies so that they may attempt to build legal mechanism on issues such as Reusing of syringes and to build proper health care waste management system; which plays a greater role in increasing the occurrence of the disease.
3. To explore the impact of preventive strategies and drugs interventions in high risk group people, so that appropriate intervention could be used for different age groups.
4. To find out any existing gap in preventive strategies that can help in curbing the disease.

Review of literature methodology

The growing rates of HCV and its lifelong complications in Pakistan need to be curbed. To ensure best preventive strategy and prevalence is averted this study was found to be a prerequisite to prevent further HCV incidence in Pakistan. To carry out the literature review different database engine were used, such as, Google, Google Chrome, PubMed, Cochrane review, NCBI, Department of health, sage journals. In addition to that different Ngo sites were also reviewed including world health organization, to find out updated information. Key words like HCV, HEP C prevention, HCV Prevalence in Pakistan, risk factors and complication of HCV were used. The essence of the literature review is to find out the prevalence and best preventive strategies of HCV in Pakistan by exploring numerous literatures over last few years.

Risk factors and challenges found.

Healthcare waste management is a main challenge for hospitals in developing countries, where health care staff and communities are exposed to risk due to poor handling of waste (Hossain 2011).

Ignoring the importance of waste management not only makes a healthcare facility more dangerous for its current patients but also sets in motion a cycle of infection outside its wall (Steven Bishop, 2016).

Hospitals in Pakistan produce about 250,000 tons of waste per year. Hospital waste has been reported to be poorly handled and managed by the hospital staff and administration respectively. This leads to environmental and health consequences within hospitals as well as to outside population (Ramesh et al 2010).

In Pakistan, studies suggest that, most hospitals and independently working physicians do not comply with HCWM practices exposing themselves, other staff, and patients to sharp injuries and infection (Ikram A 2010).

Hospitals in Pakistan whether private or public do not follow and oblige HCWM guidelines of WHO and do not practice Pakistan bio-safety rules 2005. Few recommendations are

The HCV epidemic in Pakistan continues to rise due to lack of education and awareness of the disease, shortage of medically qualified and scientifically trained health care workers and lack of health infrastructure. There are certain misconceptions and some lack of knowledge about hepatitis C which can be overcome by proper education and introduction of specific programs through social media, seminars and also by provision of free hepatitis blood screenings at least once a year for early detection (Mallick et al 2018).

It is important to universally screen all antenatal mothers. However, large scale epidemiological studies are required to determine the cost-effectiveness of the screening and prevention of vertical transmission (Saba M 2006).

From 2000–2011, Interferon plus Ribavirin was the recommended treatment option for Hepatitis C patients (Waheed, 2015). The ultimate goal of the therapy was to make the viral load undetectable, which will decrease the burden of hepatocellular carcinoma and cirrhosis

Sofosbuvir is an FDA approved pyrimidine analog of HCV polymerase which showed oral administration, high potency, high resistance to the emergence of mutants and low side effects (Bhatia et al., 2014).

Government policy and prevention strategies for Hep C in Pakistan

Pakistan has the second largest HCV burden in the world (Gower et al 2014). with transmission being driven by multiple risk factors including community (barbering, ear/nose piercing) and health care practices (blood transfusion, medical injections) and injecting drug use (Janjua et al 2010). A national survey from 2007 reported that 4.8% of the population, or nearly 8 million individuals, had been exposed to HCV at that time (Qureshi H 2010). More recent estimates suggest that 7.0 million persons were chronically infected in 2013, meaning that Pakistan harbors one-tenth of the global burden of HCV. This emphasizes the crucial importance of tackling the HCV epidemic in Pakistan, for any global effort to eliminate HCV. Since 2005, the Pakistan government has launched national and provincial hepatitis prevention and control program, including screening and treatment for HCV-infected individuals (CDC 2011). Further local initiatives have focused on educational interventions for HCV prevention (Krishnaniet al 2010). Data are lacking on the effectiveness of these interventions.

Best estimates indicate that Pakistan currently harbours one-tenth of the global HCV burden. Our analyses suggest that without further treatment interventions, this HCV burden will increase further by 2030, with the number of prevalent and incident infections increasing by two-thirds to 1.1 million new infections annually and 12.6 million prevalent chronic infections, and close to 1.5 million individuals dying from ESLD.

These results highlight the urgent need for operationalizing country-wide prevention and treatment interventions to control the HCV epidemic in Pakistan, and the importance of strategies for prioritizing treatment to optimize the impact achieved. The only country currently undertaking a comparable number of treatments is Egypt, where 500 000 patients were treated between January and September 2016 (WHO,2010).

For Pakistan to initiate a similar undertaking, a major commitment will be needed from Pakistan federal and provincial g A major obstacle confronting all HCV elimination programmers is the identification of infected individuals, which will entail considerable screening. The implementation of nationwide screening programmes will be essential, as few (< 5%) HCV-infected individuals in LMICs know their status (WHO,2016). In Pakistan, this will require screening of the general population, due to the diffuse nature of the country's HCV epidemic; this could be optimized through targeting subpopulations with higher prevalence and improving the linkage to treatment following diagnosis governments.

The aim of systemic review is to identify, assess and summarize the findings from individual studies, hence making the evidence available for analyst and policy maker to develop the best policy maker to develop the best policy that address the problem.

Article accepted

1. Research on human being between age group 18-65
2. Research undertaken in English language
3. Books, journals, newspapers, from 2000 to 2017.

Article rejected

1. Unpublished research
2. Research in languages other than English
3. Research on animals.

Results and discussion

This systematic review has critically reviewed some primary research studies on HCV prevention involving Improvement in healthcare waste management, Antenatal screening and usage of drugs. The majority of the included studies were randomized control trials, which has concluded that either lifestyle changes or pharmacological therapy could be utilized in order to prevent or to delay HCV in the majority of individuals.

This study follows systemic review method and includes randomized control trial studies which focus on preventive strategies of Hepatitis C. Strict inclusion and exclusion criteria for study selection

were made and followed. Data's were properly extracted and analyzed to minimize bias. Different data base was used including Google Chrome, Google, Pub Med, Cochrane Review using key words as Hepatitis C prevalence and prevention in Pakistan.

The results from Randomized control trials studies will compare the benefits in control and cases using risk reduction strategy, drug intervention and are expected to show huge benefits in cases group. Health education, access to ARVs at government Hospital, stop reusing of syringes, ANC visit for pregnant women, good governance decreases prevalence of hepatitis C. However, it was stressed that the intervention conducted at health care centers to change behaviors of participants were complex, there is no assurance that these results could be achieved in local health setting without actual support of health care staff.

Recommendations

1. The recommendations provided here will help the government to provide a state program that will collaborate effectively to enable prevention to be possible in Pakistan. It is important to ensure that policy makers make choices on how the prevention efforts will be integrated into the practice to enable successful programs to be undertaken nationally.
2. The government at all levels should ensure a long-term approach, which is designed to meet the demands of tackling the disease by introducing more preventive measures
3. An effective monitoring and evaluation system should be introduced in order to reduce the burden of providing a poor-quality service to the clients in general.
4. The recommendations provided above will not cost government significantly as these are only focusing on education and awareness programs and other simple measures.

Conclusion

Overall, Health education. Proper healthcare waste management, antenatal screening suggested to prevent HCV. However much is needed to change behaviors of participant who are at the high risk of HCV, hence policy maker should develop a policy that creates an environment and conditions that are conducive to achieve and maintain an active lifestyle by those who are at high risk of HCV. HCV is one of the very common Infectious diseases that can lead to chronic and hazardous complication; if not managed properly (WHO, 2011). Although there are preventive policies and programs in Pakistan but they seem to be failing to curb the disease frequency (BBC, 2011).

Hence a systemic review was needed to explore the available preventive strategies that can used to prevent the disease any further. Furthermore, based on analysis of the studies SCREENING is believed to be the best cost and clinical effective way that can prevent or postpone the onset of the disease.

However further research is needed to explore how a best environment and conditions are created that can help individuals to dwell into achieving the active lifestyle and making healthy choices. The answer can be; to increase education and awareness programs, promote a change in behavior, increase access to ARVs, improve access to physical activity even through funding football clubs which may be a long-term benefit to males.

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