

# How Can We Reduce the Burden of Hepatitis C?

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There are an estimated 130–170 million people with chronic hepatitis C virus (HCV) infection worldwide with approximately 350,000 deaths occurring per year due to HCV-related liver disease.<sup>[1]</sup> It has been suggested that there are 2.3–4.7 million people with HCV infections annually from nosocomial transmission alone.<sup>[2]</sup> As an example, in countries like Egypt, mass immunization has led to an exceedingly high HCV prevalence rate of 14–20%.<sup>[3]</sup> In most other populations in Africa, North and South America, Europe, and Asia, the prevalence in the general population is <3%.<sup>[4]</sup>

Chronic HCV infection is prevalent in the Asia-Pacific (AP) region in 1–2% population, i.e., affecting more than 100 million individuals. HCV is an important cause of liver cirrhosis and hepatocellular carcinoma.<sup>[5]</sup> Effective antiviral therapy can cure HCV infection with standard dose and duration treatment regimens with Peg interferon and Ribavirin. Sustained virological response is achieved in Asia for around 70% of patients infected with genotype 1, 90% infected with genotypes 2 and 3, 65% with genotype 4, and 80% with genotype 6.<sup>[6]</sup> As there is no effective vaccine, optimal control of HCV infection can be brought about by prevention of transmission of infection and also via identification and treatment of infected population.

There has been a dramatic drop in transmission related to blood and blood product transfusion due to appropriate and mandatory testing and growing concern for HIV infection.<sup>[7]</sup> The prevalence of HCV infection in Japan, South Korea, and Taiwan is expected to decline; however, the disease burden is expected to grow in the aging population. In India and China, the overall prevalence is expected to rise because of increased awareness and increasing diagnostic facilities. In Japan, the HCV population is prevalent in older age group, whereas it is seen in predominantly younger population in India and China.<sup>[7]</sup> In Australia, HCV case notification rates

have declined by almost 50% between 1999 and 2006.<sup>[8]</sup> Epidemic models for HCV in Australia showed HCV incidence picking in 1999 followed by a decline in 2005.<sup>[7]</sup> In Australia, 197,000 patients were estimated to have chronic HCV infection out of which advanced fibrosis was seen in 15% and 2% had HCV-related cirrhosis.<sup>[9]</sup> Estimates suggest that HCV is responsible for 15–60% patients of liver cirrhosis in AP Region. HCV contributes to hepatocellular carcinoma (HCC) in 80% patients of HCC in Japan, 30–40% in Australia and New Zealand and 18–30% in rest of the AP region.<sup>[10,11]</sup> There is scanty data about mortality due to HCV infection in AP region. One study from Australia showed that HCV infected individuals have a standard mortality ratio of 3.1 when compared to general population. HCV infected population in Australia is heavily weighted toward injecting drug users. The mortality study from Australia has shown increase in liver-related mortality after the age of 45 years (SMR = 2). Intravenous drug related mortality due to all causes were also higher in the age group of 15. Mortality rate among blood transfusion recipients was higher across all age groups (SMR = 2.1).<sup>[12]</sup>

In this issue, authors from New Delhi, India report about predominant genotype 3 (a well established fact) and this genotype responds well to the treatment. The most interesting fact in this report is that more than 40% patients had probably acquired HCV infection through multiple injection exposure and less than 10% patients had acquired infection through blood transfusion. Intravenous drug abuse as a mode of transmission of HCV infection in this study was extraordinarily low.<sup>[13]</sup> This data is quite similar to the previously published reports from India, which have been collectively presented.<sup>[7]</sup> This is quite a common mode of transmission in the AP region.<sup>[7]</sup> When we evaluated the natural history of HCV infection in India, more than 70% patients had acquired the infection due to transfusion of blood and blood products which were unscreened.<sup>[14]</sup> After the mandatory testing for HCV started in blood banks, there has been a significant drop in transmission of HCV infection by blood transfusion.<sup>[15]</sup> No studies from India have identified nosocomial exposure such as reusable glass syringe, which was practiced by almost 18% of the physicians, as a mode of transmission of HCV infection.<sup>[16–19]</sup>

Unsafe therapeutic injections have been documented to be a common source of HCV infection even in Western world.<sup>[20]</sup> Unsafe therapeutic injection practices include contaminated multi dose vials and saline bags from reinsertions of used needles and syringes, use of single needle or syringe to

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	DOI: 10.4103/1319-3767.82572

administer intravenous medication to multiple patients, and also due to the use of spring loaded finger stick devices without changing the platform to monitor blood sugar levels in multiples patients. A minute study of these studies suggests patient-to-patient transmission of HCV infection from failure to use aseptic precautions.<sup>[21]</sup> Unsafe therapeutic injections account for approximately 2 million new HCV infections per year.<sup>[2]</sup> Hence, to reduce the burden of HCV infection and to decrease the incidence of HCV infection, health care workers should play an important role. The safe injection practices should be followed meticulously.<sup>[22]</sup> These include the use of aseptic technique for injection equipment, not to administer medication from same syringe to multiple patients, use of fluid infusion and administration sets for one patient only, use of single dose vials, not to administer medication from single dose vial to multiple patients or combine leftover contents. Details of these precautions are available on “<http://www.cdc.gov/ncidod/dhqp/pdf/isolation2007>”.<sup>[23]</sup> We must remember what has been aptly described by Mariam Alter, “healthcare should not be a vehicle for transmission of Hepatitis C Virus”.<sup>[22]</sup>

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