



## A HIDDEN ENEMY : HCV

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### Abstract:

*Hepatitis C virus (HCV) was discovered for the first time in 1989. It causes chronic liver disease. HCV is a plus-stranded RNA virus and belong to family Flaviviridae. About 3.3% (20 crore) of global population are infected due to HCV. Mostly it spread through contaminated syringes. In developed countries prevalence of HCV is low, e.g. Germany (0.6%), Canada (0.8%), Australia and France (1.1%). Low but little higher seroprevalence rate have been reported in USA (1.8%), Italy (2.2%) and Japan (1.5–2.3%). In developing countries including Pakistan its prevalence is high 0.5–31.9%. Interferon based therapy are used for the treatment of HCV infection.*

### Keywords:

Hepatitis C (HCV), Flaviviridae, Interferon.

### Introduction :

For the first time in 1989 Hepatitis C virus (HCV) was discovered, as the main causative agent of chronic liver disease<sup>(1)</sup>. HCV is a plus-stranded RNA virus and belong to family Flaviviridae<sup>(2)</sup>. For HCV six genotypes (1-6) and subtypes have been described<sup>(3)</sup>. HCV originated from various areas to Asia and Africa and some of them spread globally. Globally Genotype 1 (subtypes 1a and 1b) is the most common types. The subtype 1a is most prevalent in US, while 1b in Europe. Genotype 3a is common in European intravenous drug users<sup>(4)</sup>. Like genotype 4, genotype 3 also have high rate of prevalence and incidence. In Mediterranean's clusters mostly genotype 2 are found while genotype 5 and 6 are rarely found<sup>(5)</sup>.

### Methodology:

The purpose of this review article is to provide information about HCV and update its epidemiology. In the preparation of this article a total of 20 published literatures were reviewed from international journals, local journals, news papers and books. 5 literatures of them were irrelevant and were excluded. The relevant literatures were reviewed comprehensively and analyzed.

### Global burden of Hepatitis C

Globally about 20 crore people are infected due to HCV, which is about 3.3% of the total population<sup>(6)</sup>. HCV cause chronic hepatitis in about 50% to 80% infected persons<sup>(7)</sup>. WHO estimated in 2004 that about 308 000 to 785 000 annual deaths are occurring due to liver cancer and cirrhosis caused by

## A HIDDEN ENEMY: HEPATITIS C VIRUS

HCV<sup>(8)</sup>. Public health establishments are producing understanding about hepatitis through publish and electronic media<sup>(9)</sup>. Hepatitis C prevalence obviously varies from one geographic area to the other. HCV prevalence is about 0.4% to 3% in Western Europe. HCV prevalence is higher in Middle East and Eastern Europe, where its exact numbers are not known<sup>(4)</sup>. Globally Egypt has the highest prevalence site where HCV is 9% countrywide and 50% in their certain rural areas<sup>(10)</sup>. Before 1990's the main cause of HCV transmission was contaminated injection, blood transfusion and intravenous drugs. In developed countries these mode of transmission are responsible for approximately 70% of HCV infections. In European countries various blood screening tests are performed to eradicate hepatitis C transmission<sup>(11)</sup>.

### Hepatitis C in Pakistan

Like other developing countries also in Pakistan HCV is spreading at frightening rates. In general population of Pakistan prevalence of hepatitis C varies from 0.5-31.9%<sup>(12)</sup>. In Pakistan about 1.7 crore people have low educational and health standard. Human development index of the United Nations estimated that on the basis of HCV infection, out of 174 countries, Pakistan is at 134<sup>th</sup> number<sup>(13)</sup>. In Pakistan about 1 crore people are assumed to be infected with HCV<sup>(14)</sup>. Economic Survey held in 2005-2006 reported that Pakistan spend only 0.75 percent of GDP on health sector<sup>(15)</sup>. So as compared to day care centers the circumstances of public hospitals are at decline state in Pakistan. If a patient is admitted to hospital, mostly preoperative test is not performing normally for that hepatitis B or C infected patients. The health care worker and other patient's location are at high risk of getting hepatitis B or C infection. A study carried out in one of the teaching hospital at Abbottabad, Pakistan reported that 30% of health care worker were having hepatitis C infection<sup>(16)</sup>.

### Disease transmission patterns of hepatitis C

The main cause of HCV transmission was risky injection, blood transfusion and intravenous drugs. Industrialized countries assumed that the main source of HCV transmission in their countries for the past few decades is injection drug use. In developing countries the main source of HCV transmission is unsafe therapeutic injections and transfusion, in these countries especially age-specific seroprevalence rate are responsible for high risk of HCV infection<sup>(17)</sup>.

In industrialized countries unsafe therapeutic injections are probably the main cause of HCV infection in high seroprevalence older age groups 30-50 years ago, and assume that may be the cause of spread in hyper endemic areas<sup>(18)</sup>. Famous countries of the developed countries where seroprevalence rate is relatively low include Germany (0.6%), Canada (0.8%), Australia and France (1.1%). Low but little higher seroprevalence rate have been reported in USA (1.8%), Italy (2.2%) and Japan (1.5-2.3%)<sup>(19)</sup>.

### Availability of treatment

Interferon based therapy are used for the treatment of HCV infection. It is used even before the discovery of HCV in 1989<sup>(20)</sup>. Interferon therapy is an important prospective factor for prevention of mortality and morbidity of HCV infection. Yet post exposure prophylactic use of interferon is not been justified by any data. Interferon has been used for 80-98% HCV infection<sup>(21)</sup>. In newly infected hepatitis C infected peoples chronic disease occurs in 60-85% cases<sup>(22)</sup>. The existence of symptoms from early to expansion of chronic infection has not been well established. Combination of pegylated interferon's and ribavirin, which was introduced in 2001 stimulate a persistent response in 42-82% of patients having chronic hepatitis C, depending on genotype<sup>(23)</sup>.

### Conclusion

From the available literature it was concluded that the HCV is one of the most prevalent disease worldwide especially in low income countries. For the control of the disease therapeutics approaches and control measure is very necessary.

### Competing Interest

The author declares that they have no competing internet.

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#### A HIDDEN ENEMY: HEPATITIS C VIRUS

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