

## **Global Health Burden of Viral Hepatitis**

Viral Hepatitis is the most common cause of acute & chronic liver disease in the world; more than half of the world's populations have been exposed to various form of Hepatitis virus infection. About 400-500 million people have chronic viral hepatitis. Chronic viral hepatitis is also the leading cause of liver cancer in the world. In a recent AASLD meeting, Viral Hepatitis has been described as a game changer in Hepatology. Liver foundation, WB has been committed to design strategies to prevent & treat viral hepatitis and related liver disease. In formulating such strategy, we must be aware of the global health burden of viral hepatitis.

### **Enterically transmitted Viruses – HAV & HEV**

Transmission rates of HAV are typically highest among young children & their contacts. In developing countries, water for injection is the most common way of transmission, where as food bourn transmission commonly occur in the developed world. Annually an estimated 1.5 million case of clinical Hepatitis A is reported. At the same time a much larger number do suffer from asymptomatic infection. With improvement in the standard of living, many countries in the world will have susceptible older children & adults, who are vulnerable for acute clinical hepatitis A.

Vaccination has resulted in decline of clinical hepatitis A & in the US the incidence has dropped from 12 cases per 100,000 populations to 1.0 case per 100,000 populations between 1995 to 2007. Prevention would require adequate sanitation, good personal hygiene and safe drinking water & food. Vaccination policies must be decided at the national according to nature of endemicity in a particular country.

HEV is usually transmitted through exposure to contaminated water. HEV genotype 1 & 2 are endemic in Asia & Africa, causing large water bourn epidemics. In the developed world HEV genotype 3 & 4 are infrequent cause of clinical Hepatitis E. Outcome of Hepatitis E can cause large scale epidemics. One such recent epidemic has been documented from Uganda, causing 10,000 cases of jaundice and 160 deaths in 2007-2009. In the developed world HEV seroprevalance may be higher than clinical case reporting & may represent subclinical HEV infection. Preventive measure included proper sanitation and safe drinking water. HEV vaccine is not yet available.

### **HBV & HCV**

Worldwide more than 350 million people carry HBV. 75% of which are Asians. Nearly one million people die annually, 94% of which are due to chronic liver disease. Globally HBV & HCV infection cause an estimated 57% of Cirrhosis of liver and 78% hepatocellular carcinoma.

## **HBV:**

It has been estimated that perinatal transmission accounts for 13-26% of chronic infection globally, which horizontal transmission is responsible for 37-52% of chronic HBV carriers. Exposures to HBV later in life cause chronicity in 26-40% HBV chronic cases. Nosocomial transmission is not uncommon and in 2000 an estimated 21 million HBV infections were caused by unsafe injection practices, representing 32% of all HBV new infections worldwide. India has a HBV carriage rate of 10% of world HBV carrier pool. At least 25,000 new cases added each year, because of lack of HBV vaccination at birth.

Universal infant immunization can reduce the HBV carriage rate as evidenced by such countries as China to developed world i.e. USA showing a decline of 82% (8.5 cases per 100,000 in 1990 to 1.5 cases per 100,000) in 2007. In the healthcare setting avoidance of unnecessary injection, clean equipment, universal precaution & disposal of medical waste as well as HBV vaccination & post exposure prophylaxis would prevent HBV infection.

## **HCV:**

HCV infection is endemic in most part of the world, with an estimated 175 million people infected with HCV. The risk of HCV transmission following a needle stick exposure is 1.8%. Perinatal transmission rate is 5-6% but rises to 14% among infants born to mothers who are co-infected with HCV & HIV. Sexual transmission rate is low 1.5%. However HIV-1 co-infection appears to increase the risk of HCV sexual transmission.

Prevalence of HCV is highest in Egypt (15-20%) compared to 1% among adult Indians (10 million). Contaminated injection in the health care setting has resulted in 2 million HCV infections in 2000, representing 40% of all new infections globally. An estimated 350,000 persons die of HCV related liver disease each year throughout the world. As no vaccine is available, HCV screening of at risk population, education & counseling can prevent HCV transmission.