



# Hepatitis and Healthcare Professionals

## (World Hepatitis Day Special Editorial)

PRITI GUPTA

It is my honour to write this editorial comment for IHRJ. I wish them success in their future endeavours.

Viral hepatitis is an inflammatory conditions of the liver caused by any one of the heterogeneous group of 'hepatitis viruses'. It currently consists of type A,B,C,D,E & G. Type F has been proved to be mutant of type B virus. This occurs through blood transfusion. Therefore, type F has been deleted from the list of hepatitis. Out of this these six types of hepatitis infection, type A & E are transmitted by feco- oral route through contamination of water other viral hepatitis B, C & D are transmitted by blood & body fluids. Type G rarely causes hepatitis. Other virus which have been implicated in hepatitis are cytomegalo virus, Epstein bar virus, Yellow fever virus & Rubella virus. For practical purposes these viruses are very important and an increase in prevalence has been noticed during the last few decades. The medical professionals are always at higher risk as they come in contact with infected patients more frequently. Hepatitis A & E is acute communicable inflammatory disease of the liver and its route of transmission is by feco-oral route. It is clinically characterized by sudden onset of fever, nausea, vomiting, malaise and pain in right hypochondriac region. In some of the cases it's difficult to diagnose in earlier face clinically unless person develops icterus or jaundice. Sometimes coma and death occurs if early diagnosis is not made and treatment not given in time. The case fatality rate is very low (less than 0.2% in hepatitis A). However, the mortality becomes very high in pregnant mothers. In India (hepatitis A) infection is more common during childhood following which child develops immunity by 10 years of age. As most of us are aware that 40,000 cases were affected in Delhi in 1955-56 due to contamination of Yamuna water with sewage and followed by next epidemic in 1970.

Similarly, pregnant mothers and new born are also not protected against hepatitis B by proper dose administration till date. Therefore, vaccination in

the pregnant mother is only recommended in high risk in pregnancy. Similarly, children also be considered and are subjected for immunization as per WHO schedule or Indian Academy Pediatric schedule for immunization.

Hepatitis B is a DNA virus and mode of transmission include parental, direct contact route, percutaneous route and sexual intercourse. Here, vertical transmission of HBV from carrier mother to babies is an important factor for the prevalence of disease in endemic areas. Transmission of HBV occurs at birth as a result of leakage of maternal blood to baby circulation or accidental inoculation of the blood.

It's more common in medical profession, even those segregating hospital waste are at higher risk. Other route of transmission includes breast milk. High risk professional groups include doctors, surgeons, dentists, nurses, laboratory workers, blood bank workers, IV drug abusers and sex workers. Acute hepatitis B infection among children is rarely symptomatic.

During acute infection, HBs- Ag becomes detectable followed by production of core antibody (Anti HBc).The chronic carrier state develops when there is inadequate production of anti HBsAg.

Laboratory diagnosis in hepatitis B is very important since detection of antibodies takes long time like several months especially in chronic cases. The importance of prevention and control is very important in prevention of this disease.

The channel of transmission of the diseases is blocked by following measures

- Sterilization of syringes, needles, catguts, surgical instruments etc.
- Avoiding sharing of toothbrush, razors, syringes among drug-abusers etc.
- Screening of blood donors for HBs Ag
- Avoiding homosexuality and multiple sexual partners.

- Instructions to the carriers-not to donate blood, not to share their razors, bath brush and tooth brush, etc. with others and to use condoms while having sexual intercourse.
- Sterilization of instruments (simple heating over a flame) before adopting procedures like nose piercing, ear pricking, acupuncture, and tattooing.

### Protection of susceptible:

- Plasma derived vaccine
- Recombinant DNA vaccine

Note- rapid schedule is recommended for high – risk individuals such as surgeons, dentists, lab – technician in blood bank, etc. as pre –exposure prophylaxis. The schedule is 0, 1 and 2 months with a booster dose at 12 months, followed by a regular booster dose, once in 8 years.

### Hepatitis E

This hepatitis was discovered in 1990 and called as Non A, Non B hepatitis- E virus (HEV). It is usually common in many developing countries including South East Asia region where sanitation measures are poor. It is an RNA virus, member of caliciviridae family. This the most common cause of hepatitis in adults, and sometimes exist as an epidemic. In India it occurred in Kanpur in 1991. Incubation period is almost same as hepatitis A (15 -60 days).

In south East Asian region, outbreaks have occurred time to time. However, young children are often spared in most hepatitis B epidemics. It is a self-limiting disease and lasts for several weeks only. Mainly young adults of 15-40 years are affected. Mild infections are more common in children in form of anicteric hepatitis.

Among pregnant women disease severity is high which may result in abortion, still birth and neonatal death. It may lead to stable cirrhosis. Diagnosis is made of by the level of anti HBV

antibodies. Gold standard of diagnosis is polymerase chain reaction (HEV-PCR).

### Prevention of hepatitis E:

- By sanitation barrier
- Boiling the water destroys HEV
- Chlorination of water can destroy HEV
- Preventive immunization is possible
- Immunoglobulins are used for post exposure persons.
- A vaccine to prevent hepatitis E virus infection has been developed and is licensed in China, but is not yet available elsewhere.

### Prevention:

- Primary prevention-hand hygiene
- Safe handling of disposable sharps and waste
- Provision of sterile syringes and needles for injectable use.
- Screening of blood for hepatitis B and C as well as for HIV and syphilis
- Training of health care professional.
- Promotion of correct and consistent use of condoms by health workers and their visitors.

### Secondary & tertiary prevention in HCV

- Education and counselling are an option for care and treatment.
- Immunization with A & B vaccine to prevent co-infection of these viruses.
- Early and appropriate management with anti-viral therapy
- Management of regular monitoring for early diagnosis of chronic liver diseases.

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