

# Hepatitis in Pregnancy

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## ABSTRACT

**Objective:** To determine the frequency of viral hepatitis in general, spectrum of hepatitis E in particular, and to study the maternal and fetal morbidity and mortality associated with it. **Design:** Observational study. **Place and Duration of Study:** Fatima Memorial Hospital, Lahore from Jan06 to Sept 2006. **Patients and Methods:** In this prospective study, total number of pregnant women was 4723, sera of 35 pregnant women having clinical jaundice in pregnancy were analyzed for markers of hepatitis A, B, C and E viruses. **Results:** Of the 35 pregnant women with jaundice HEV IgM were 60%, HA V IgM 20%, Anti HCV 8.75%, Hbs Ag 5.71%, unexplained 5.71%. Amongst HEV 23.80% had hepatic encephalopathy, DIC in 42.85%, PPH in 23.80%, renal failure in 9.52% and maternal mortality in 4.76%. Approximately two third of pregnant women with HEV infection had preterm deliveries (76.19) % and perinatal mortality of 42.8%. **Conclusion:** Hepatitis E was the commonest etiological agent in those who had fulminant disease during pregnancy and was associated with high morbidity and mortality.

**Key words:** Hepatitis, hepatitis E, pregnancy.

## INTRODUCTION

Liver dysfunction complicates as many as 3% of pregnancies<sup>1</sup>. Commonest cause of jaundice in pregnancy with infections is due to hepatitis A, B, C and E. Incidence of hepatitis varies greatly around the world. In developed countries the incidence is around 0.1%. Whereas in developing countries it can range from 3-20% or higher<sup>2</sup>.

Hepatitis E virus accounts for sporadic and major epidemics of viral hepatitis in underdeveloped countries associated with high maternal and infant morbidity and mortality.

Hepatitis E virus is non enveloped RNA virus of calcivirus group, 32-34nm in diameter. It takes from two weeks to two months for hepatitis E to develop after being in contact with it. It is common in developing countries where there is not safe water supply especially South Asian countries Nepal, Iran, India, China, Pakistan, Mongolia and in travelers returning from these areas (Fig. 1).

Epidemics happen when water supplies are contaminated with sewage after monsoons and flooding. It is not transmitted through blood,

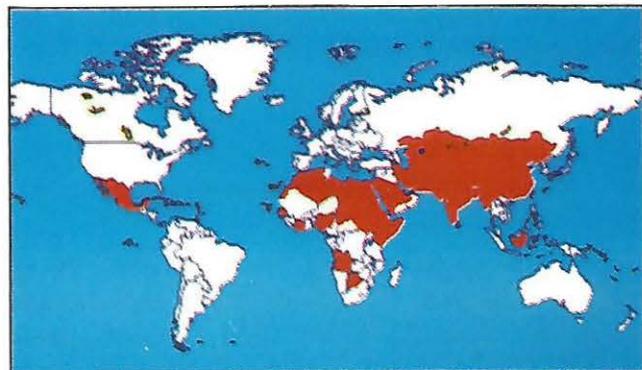


Fig. 1: Geographical distribution. Outbreaks or confirmed infection in >25% sporadic non-ABC hepatitis.

needles, and other body fluids or through sexual contact. Illness from hepatitis E is usually seen in young adults. Common symptoms include vomiting, abdominal pain and fever. Common signs include jaundice, dark urine and pale stools. Although usually self limiting and benign but pregnant women seems to be more likely to get severe infections and up to 20% of those who get it in the last three months of pregnancy die from infection<sup>3</sup>

Fulminate hepatic failure, disseminated intravascular coagulation, post partum hemorrhage, and complicates pregnancy further. Other obstetric complications include premature rupture of membranes, preterm deliveries with high infant mortality. Vertical transmission rate is 33.3% and some studies established mother to child transmission in up to 50%. Should HEV infected mother breast feed? Although anti-HEV antibody and HCV-RNA are present in the colostrums of HEV infected mothers, breast feeding appears to be safe for these infants. Transmission of infection may occur postpartum through close contact of mother infant pairs, especially in the presence of acute maternal disease<sup>6</sup>.

Viral hepatitis in pregnancy has been a subject of continuing interest and controversy. Reports from Europe and United States have shown the course of viral hepatitis during pregnancy to be in no way different from non pregnant women<sup>7,8</sup>. Malnutrition superimposed on the normal demands of pregnancy and inversions of T and B lymphocytes in early pregnancy has been postulated to be contributing factors for adverse outcome<sup>9</sup>.

The present study is aimed to find out the prevalence and severity of acute viral hepatitis, fulminant hepatitis during pregnancy, maternal and fetal morbidity and mortality.

### PATIENTS AND METHODS

A prospective study was conducted on 35 pregnant patients with acute viral hepatitis and fulminant hepatic failure. The patients were evaluated on the basis of history-, examination, liver function profile and serological markers for hepatitis, antiHAV (Elisa), HbsAg, antiHCV antibodies, IgM anti HEV.

The patients with HEV were followed up for the progression of the disease in terms of encephalopathy, DIC, renal impairment, mortality, preterm deliveries and perinatal mortality.

### RESULTS

We studied 35 cases of jaundice in pregnancy, aim was to study the spectrum of hepatitis E in pregnancy, which was the most

prevalent in all (21/35) 60% followed by HAV IgM 20% (7/35), AntiHCV 8.75% (3/35), HbsAg 5.71% (2/35), unexplained 5.71% (2/35) (Fig. 2).

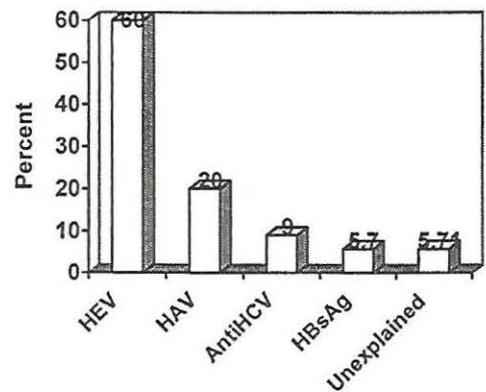


Fig. 2: Prevalence of hepatitis, Hepatitis E virus is most prevalent among pregnant women.

Most HEV were seen in young primigravida aged between 20-34 yrs from low socioeconomic status. The largest number of cases occurred in June and July. 18/21 cases of HEV presented with acute viral hepatitis, almost all were unregistered being referred to tertiary centre. Prevalence of HEV infection was seen more in third trimester (68%). (5/21) 23% presented with FHF, (9/21) 42.8% had DIC, (5/21) 23.80% had PPH, renal failure in (2/21) 9.52% and maternal mortality in (1/21) 4.75% (Fig.3). Fresh frozen plasma and blood were transfused in 85.71% of cases. Two cases were managed conservatively in which hepatitis was mild and were followed by LFT's as out patient department service.

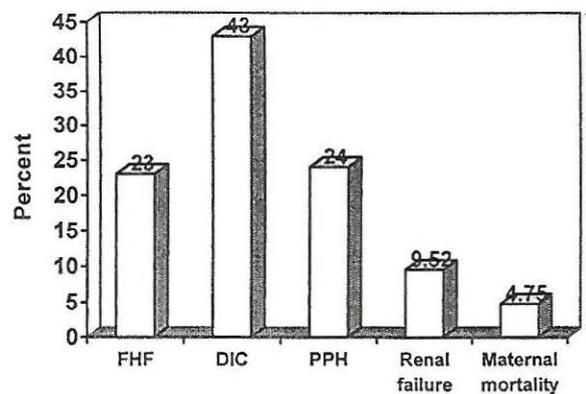


Fig. 3: Complications of Hepatitis E in pregnant women.

There were (16/21) 76.19% preterm deliveries, IUFD (3) 14.28%, early neonatal death rate of (6/21) 28.57% with Perinatal mortality rate of 42.8%.

## DISCUSSION

HEV infection alone is responsible for 60% of cases of viral hepatitis in pregnant females in third trimester, HAV infection was second most common cause, HCV,- affected women were 8.73% and HBV infection was less common (5.7%). This is corroborative with the fact that that HEV infection accounts for 50-70% of all patients with sporadic viral hepatitis in India, a study conducted by Aggarwal<sup>3</sup>, whereas in another study by Beniwal<sup>18</sup> it is reported to be 47.4%. HEV infection is reported to be 68% in third trimester and the prevalence of HEV infection in third trimester is reported between 40-57% according to Beniwal study whereas a study conducted by Aggarwal the prevalence of HEV in pregnant women in first trimester (76.9%), second trimester (88.9%), third trimester (83.8%) and puerperium (100%) and not differ significantly. Twenty three percent of the FHF cases were HEV positive with DIC 42.8%, where as its 53.2% in Aggarwal study. FHF in pregnant women caused by HEV was an explosive disease with short pre encephalopathy period, rapid development of cerebral oedema and high occurrence of DIC. Maternal mortality rate was 4.75% whereas mortality rate is in range of 30-45%<sup>5,11,12</sup>.

## SOME OF EPIDEMICS

Place	Year	Number of cases
India	1955	30,000
Myanmar	1976	20,000
Kashmir	1978	52,000
China	1986	10,000
Somalia	1988	11,000
Mexico	1989	4000
Iran	1999	hundreds
Sudan	2004	4000
Chad	2004	1000
Iraq	2004	hundreds

Regarding fetal outcome we had 18 live births, 3 IUFD. Out of 18 live births 15 were

preterm, 3 were at term. Out of 18 early neonatal deaths were 6(28%), Perinatal mortality rate of 42.8% which was high due to prematurity and sepsis.

In our study 35 pregnant women out of 4723 included with clinical jaundice so the subclinical cases may be missed.

## CONCLUSION

Although usually self limiting and benign disease in particularly severe among pregnant women. Hepatitis E in pregnancy is associated with high rate of pre term delivery and mortality. Essential antenatal care at domiciliary and peripheral levels, early detection can prevent most of complications. General health measures such as provision of safe drinking water, environmental sanitation, health education, well balanced diet would definitely improve maternal and fetal outcome.

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