



## FATAL HEPATITIS E IN PREGNANCY: A CASE REPORT

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**ABSTRACT** Hepatitis E is usually a self-limiting disease. However, the mortality rate for pregnant women infected with the hepatitis E virus (HEV) is high. Here we report a case of HEV infection in a 19-year-old pregnant woman. The patient presented at 38 weeks of gestation with abdominal pain and vomiting. She went into spontaneous labour within 4 hours of admission. The patient tested positive for IgM HEV antibodies and complicating hepatic encephalopathy due to acute liver failure. The patient maintained good hygiene and did not have any travelled history; hence the source of infection remains unclear. The newborn delivered with an APGAR SCORE of 4/10 was admitted to NICU. Both mother and baby died due to acute liver failure and severe birth asphyxia respectively. Hence, hepatitis E should be considered in the differential diagnosis in patients with acute hepatitis, especially during pregnancy.

**KEYWORDS :** Acute hepatitis, Hepatitis E, Jaundice, Pregnancy.

## INTRODUCTION

Globally the most common cause of hepatitis i.e., an inflammation of the Liver is hepatitis viruses. These hepatitis viruses are mainly of five types viz. A, B, C, D and E.<sup>[1]</sup> Among these five types of hepatitis viruses, about 3.3% of all viral hepatitis-related mortality was due to HEV.<sup>[2]</sup> HEV infection can cause outbreaks and sporadic hepatitis in people with poor sanitation, hence it is considered an important public health concern in most developing and industrial countries.<sup>[2,3]</sup> Despite improved socio-economic and sanitary conditions along with regular health awareness programs, hepatitis remains one of the major health problems in India.<sup>[1]</sup> Particularly, pregnant women are more vulnerable to HEV infection than other viral hepatitis.<sup>[2]</sup>

With the aim to draw urgent attention towards the establishment of routine laboratory diagnosis of HEV. Here, we present a case of a primigravida who was diagnosed with hepatitis E in the third trimester.

## Case Report

A 19-year-old primigravida with 38 weeks of gestation had complaints of abdominal pain and vomiting and was referred to a tertiary care centre, Solapur (Maharashtra, India). On admission, she looks deeply icteric and conscious but not oriented. Her pulse was 86/min and blood pressure was 110/70 mmHg. Uterus corresponds to 38 weeks of gestation with the cephalic presentation. The liquor was adequate. Foetal heart rate was 130/min. Uterine contractions were present. Her Cervix was dilated. She was in active labour. After 4 hours of admission, a female child of 2.1kg was delivered normally, but the baby did not cry immediately after birth. AGPAR SCORE of a baby was 4/10 after 1 minute and 5/10 after 5 minutes, after 4 hours of admission, hence baby shifted to NICU for further management, and the mother shifted to a recovery room after episiotomy sutures. Her blood sample was sent to the laboratory for routine haematological, biochemical as well as hepatitis A, hepatitis B, hepatitis C, and hepatitis E examination. The baby died during management in NICU due to severe birth asphyxia.

The patient was positive for hepatitis E but negative for other hepatitis viruses. Her routine haematological and biochemical investigations result on successive days are shown in following table 1 and table 2 respectively.

As there was severe thrombocytopenia, four times platelet transfusions were given during a week period, but still, the platelet count of the patient did not improve. On post-delivery day 3, the patient had breathlessness. Her oxygen saturation started dropping and hence she was intubated. The patient was kept under continuous monitoring and supportive management continues. But instead of all these efforts, the patient died of acute liver failure due to hepatitis E.

Table 1: Haematological investigation

Lab service	Hgb	RBC count	WBC count	Platelet count
Unit	g/dl	per $\mu$ l	per $\mu$ l	per $\mu$ l
Day 1	11.8	$3.92 \times 10^6$	7400	16000
Day 2	8.9	$3.07 \times 10^6$	8300	22000
Day 3	9.6	$3.29 \times 10^6$	16100	36000
Day 4	8.7	$2.33 \times 10^6$	22800	34000
Day 5	8.3	$2.28 \times 10^6$	25100	33000
Day 6	9.2	$3.67 \times 10^6$	16400	42000
Day 7	8.4	$3.52 \times 10^6$	16400	40000
Day 8	7.7	$3.4 \times 10^6$	22800	35000

Table 2: Biochemical investigation

Lab service	Alkaline Phosphatase	Bilirubin – Direct	Bilirubin – Indirect	Bilirubin – Total	SGOT	SGPT
Unit	U/L	mg/dl	mg/dl	mg/dl	U/L	U/L
Day 1	113	0.4	1	1.4	426	142
Day 2	102	0.3	1.4	1.7	400	168
Day 3	98	0.5	1.2	1.7	233	131
Day 4	63	4.1	6.3	10.4	1285	291
Day 5	50	5.9	6.4	12.3	548	174
Day 6	79	4.2	2.9	7.1	167	191
Day 7	70	3	2	5	163	184
Day 8	143	2.9	1.5	4.4	131	141

## Discussion

The water-borne Hepatitis E virus (HEV), is a single-stranded, non-enveloped RNA virus in the genus hepevirus and family hepeviridae. It is transmitted through the faecal-oral route, mainly due to the contaminated water.<sup>[1]</sup> Because of the poor sanitary conditions, HEV infection is considered an important public health concern, indeed, it is known as a disease of financial, educational and infrastructural poverty.<sup>[2]</sup>

HEV is distributed globally, but south and east Asia present the highest prevalence.<sup>[1]</sup>

Though the HEV infection generally presents with mild disease and usually have a self-limiting course with a case fatality rate of 0.1% in men and non-pregnant women, the mortality rate can reach up to 30% among pregnant woman.<sup>[1,3,4]</sup>

Due to the unknown pathogenic mechanism, pregnant women may be more prone to HEV infection. HEV is a risk factor, particularly in the third trimester of pregnancy for poor materno-foetal outcomes, which may include low birth weight, small for gestational age, preterm labour, stillbirth or intrauterine death but not miscarriage.<sup>[2,5]</sup> This may be because of the HEV related fulminant hepatitis that can progress to acute liver failure (ALF).<sup>[1,5]</sup>

Among the major causes of liver failure, only viral hepatitis was associated with poor maternal outcomes. Also, the burden of ALF is found to be highest in the Indian subcontinents, china and south-east Asia, where HEV is the commonest cause of epidemic and endemic acute hepatitis.<sup>[5]</sup>

To date, there is no specific treatment available for HEV infection.<sup>[2]</sup> Hence, an improvement in sanitary conditions, proper sewage disposal, clean drinking water, health education and public awareness regarding hygiene is the mainstay of the prevention of HEV infection.<sup>[5]</sup>

### Conclusion

Pregnant women are more susceptible to HEV infection and HEV in pregnancy is a risk factor for poor materno-foetal outcomes. Hence in pregnant women HEV testing should be included as a routine investigation.

**Conflicts Of Interest** - None to declare.

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