The Professional Medical Journal
www.theprofesional.com
DOI: 10.17957/TPMJ/15.2748

ORIGINAL PROF-2748

ACUTE HEPATITIS E DURING PREGNANCY;
MATERNAL AND FOETAL OUTCOMES.

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Article received on:
01/01/2015
Accepted for publication:
21/09/2015
Received after proof reading:
13/11/2015

ABSTRACT… Liver disorders during pregnancy may have a strong bearing on both mother and the foetus. Acute Hepatitis E is rightly considered to be an emerging infection. Loco-regional studies have shown it to be the most common cause of Acute Hepatitis in pregnant females. We carried out our study to elaborate the demographic profile of pregnant females presenting with Acute Hepatitis E along with the fetomaternal outcomes. **Study Design:** It was a prospective, observational study. **Intervention:** None. **Settings and Participants:** Over a period of two years, 73 pregnant patients were evaluated by our team in the Department of Gastroenterology for suspicion of liver disease. **Outcomes and Measurement:** Data was evaluated for quantitative and qualitative variables. Outcome of mother, pregnancy and neonates was also recorded where available. **Results:** During the study period 73 pregnant patients presented with liver disease giving an incidence of 3.6%. Serological evidence of Acute Hepatitis E was found in 50 (68.5%) of the patients. Fulminant hepatic Failure developed in 5 (10%) patients. All five patients with FHF could not survive. There were 4 (8%) intra-uterine deaths, 1 (2%) abortion and 5 (10%) neonatal deaths. **Shortcomings:** Relatively small sample size. **Conclusions:** Acute hepatitis E during pregnancy predicts poor outcomes for the mothers, foetus and neonates.

Key Words: Acute Hepatitis E, Hepatitis, Pregnancy, Fulminant Hepatic failure.

Article Citation: Alvi AH, Sabir O, Ikram-ul-Haq R, Nawaz AA, Riaz I. Acute hepatitis e during pregnancy; maternal and foetal outcomes. Professional Med J 2015;22(11):1379-1382. **DOI:** 10.17957/TPMJ/15.2748

INTRODUCTION

Hepatitis E virus (HEV) is an RNA virus transmitted through faecal-oral route. Rarely transmission through infected blood products and vertical transmission is noticed.[1] Although self- limited in immune-competent patients, it retains the potential to cause fibrosis leading to chronic liver disease in immune-compromised hosts.[2] It has a predilection to cause severe disease in pregnant females with up to 60% developing fulminant hepatic failure and a maternal death rate of up to 31%.[3,4] The loco-regional data puts the incidence of maternal death at 6%[5], 20%[6] and 26.9%.[7] Intrauterine deaths, low birth weight and neonatal deaths are also seen more commonly.

MATERIALS AND METHODS

This was a prospective observational study carried out in our tertiary care centre with fully functional obstetrics and hepatology departments. The study was approved by the Institutional Review Board of our hospital. 50 patients were enrolled over a period of two years from June 2011 – May 2013. These patients were found to have serological evidence of Acute Hepatitis E and were either admitted under obstetrics service or were referred to us in the out- patient department.

The demographics of the patients were recorded in specially designed proforma after taking informed consent. According to the severity of their condition they were either kept admitted or followed in outpatient clinics. Strict follow up was maintained until delivery and early post-partum period. Neonates were followed in the neonatal/ paediatrics intensive care or nursery.

RESULTS

Out of a total of 2012 gestations managed by the OBGYN in the study period 50 patients were seen to have Acute Hepatitis E giving an incidence of 2.48%. The demographics profile is given in ta-

ble-I. Maternal and fatal outcome is presented in table-II whereas obstetric complications are given in table-III.

DISCUSSION

The incidence of liver diseases of any etiology was 3.6% out of a total of 2012 gestations over the study period. In our study acute hepatitis E occurred in 2.48% of the gestations. Out of the initial cohort of 73 patients, viral hepatitis of any ethology was seen in 61 (83%) patients. Patients with acute hepatitis E constituted around 82% of the patients with acute hepatitis of viral causes. Our incidence of Acute Hepatitis E differs from that given by Sultana R[6], Kumar A et al[7] and Jasiwal et al[8].

Mean age(years)	26.20 ±3.631.	**Season of Presentation**	
15 to 25	21 (42.0%).	Spring (Feb-April)	9 (18%).
26 to 30	24 (48.0%).	Summer (May - Sep)	32 (64%).
31 to 45	5 (10.0%).	Fall (Oct-Jan)	9 (18%).
Gestational age(months)	5.96 ± 2.45.	**History of blood transfusion**	
First trimester	4 (5.5%).	> 6 months	3 (6%).
Second trimester	16 (21.9%)		
Third trimester	53 (72.6%)		
Parity range		< 6 months	3 (6%).
0 TO 1	33 (66.0%).	**Contact**	
2 TO 4	14 (28.0%).	Contact in same house	6 (12%).
> 4	3 (6.0%).	Contact not in same house	2 (4%).
Gravida		None	42 (84%).
1	15 (30.0%).	**Serum Total Bilirubin at presentation (mg/dL)**	12.6 ± 8.64.
2 TO 4	28 (56.0%).	**Serum ALT on presentation (IU/L)**	1038.24 ± 846.9
>4	7 (14.0%).	**Hospital Stay**	5.72 ± 2.24
		Duration of Jaundice (days)	7.1 ± 5.89
		Weight of the new born (Total = 40) Kg.	2.4 ± 0.5. (Range: 1.5 – 4.1)

Table-I. Demographic Profile of the Patients.

MATERNAL OUTCOME	FREQUENCY	FETAL OUTCOME	FREQUENCY
Delivered at term without complications.	23 (48%)	IUD	5 (10%)
Delivered at term with complications.	6 (12%)	Full term delivery	29 (56%)
Delivered preterm without complications.	6 (12%)	Spontaneous preterm	6 (12%)
Delivered preterm due to distress.	10 (20%)	Induced preterm, foetal distress	6 (10%)
Fulminant Hepatic Failure	5 (10%)	Induced preterm, maternal distress	4 (8%)

Table-II. Maternal and Fetal Outcomes:

Obstetric Complications	
Total No.	**6 (12%)**
Antepartum haemorrhage	1 (2%)
Postpartum haemorrhage	4 (8%)
Premature rupture of membranes	1 (2%)

Table-III. Obstetric complications

Acute Hepatitis E shows regional variation and our incidence is close to that reported by Khuroo MS et al.[1] Fifty three (72.6%) of our patients presented in the third trimester, which is significantly more than patients presenting during the first two trimesters (p=0.003). This agrees with Sultana R et al[6] and Patra S et al.[9] However it should be kept in mind that patients may have been having symptoms for some days to a few weeks before seeking consultations and thus may have had delayed presentations.

It has been postulated that hepatitis E shows seasonal variation. Few studies have reported on this phenomenon. Most of our patients presented in summer season (n=32, 64%). The patients presented during spring and summer season were significantly more than patients presenting during the fall/winter season. Same trend was observed by Kumar a et al[7] and Dalton H et al.[10]

Eight (16%) of our patients had a history of contact with a jaundiced person at home during the last 6 weeks before presentation, whereas 6 (12%) of our patients had received a blood transfusion during the past one year. It is well known that the major route of transmission for acute hepatitis E is feco-oral and contaminated water is implicated[11] however transfusions[12,13] and vertical transmission are also thought to contribute. Aggarwal et al postulates that person to person transmission is rare and what seem to be secondary attack cases may be an outcome of shared water supply.[14] Our study was not designed to explore the incidence of transfusion transmitted hepatitis E or vertical transmission.

Our data reveals that only 23 (46%) of the pregnancies reached term without having complications. Six patients had obstetric complications (post-partum haemorrhage in 4 (8%), premature rupture of membranes and antepartum haemorrhage in 1 each (4%)). Six patients (12%) were delivered preterm spontaneously without complications. Of special note are our five patients who developed Fulminant Hepatic Failure (10%). All five of these patients expired (4 pre partum and 1 postpartum). It is well known that Fulminant Hepatic Failure requires advanced treatment in specialized liver intensive care units which are largely unavailable in this part of the world. As regards the foetal outcomes, intrauterine death was seen in 5 (10%) and abortion in 1 (2%). Preterm induction was undertaken in 10 (20%) of the cases (using vaginal prostaglandins): in six (12%) patients it was due to foetal distress and in four (8%) patients due to maternal distress. These results are in general agreement with loco-regional data depicting poor maternal and foetal outcomes for acute hepatitis E during pregnancy.[5,6,7] However Patra S et al[9] report complication and mortality rates much higher than our study. They have a larger cohort than ours and they admit having referral bias. Our cohort was taken up from our hospital's OBGYN department only.

In our cohort 3(6%) neonatal deaths were observed giving a total perinatal mortality of 18%. Birth weight of our cohort was 2.4 + 0.5 Kg (Range: 1.5 – 4.1) and the higher survival rate of these low birth weight neonates requires specialized units which fortunately our hospital has established.

CONCLUSION

Acute Hepatitis E during pregnancy can lead to poor maternal and foetal outcomes. We advocate the establishment of liver failure units to take care of these patients.

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