



Research Article

CASE SERIES OF HEPATIC ENCEPHALOPATHY IN PREGNANCY: PRESENTATION, CAUSES AND OUTCOME

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ABSTRACT

Aim: Pregnant women presenting with complications of Acute or Chronic Liver diseases are often associated with poor prognosis. In this observational study we aimed to find out the association of different factors affecting the poor outcome.
Method: We compared and analyzed the clinical characteristics, laboratory examinations and the outcome in the form of maternal and fetal mortality.
Results: Maternal and neonatal adverse outcome mainly depend on the deterioration of clinical and laboratory parameters at the time of admission. Hepatic encephalopathy can be prevented by timely measures taken during the disease progression.
Conclusion: Pregnant women are more susceptible to develop acute liver failure. Mortality rate is very high in cases associated with higher grades of hepatic encephalopathy, higher bilirubin, lower platelet counts and deranged coagulation profile.

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INTRODUCTION

In a normal pregnancy many physiological and hormonal changes occur, some of which can mimic with liver disease. Liver dysfunction in pregnancy can be due to: pregnancy associated Live diseases, exacerbation of pre-existing liver disease or conditions unrelated to pregnancy.

Table 1 Classification of liver disease in pregnancy[1]

Table with 2 columns: Non-pregnancy related liver disease, Pregnancy related liver disease, Hypertension related liver diseases, and Coincidentally with pregnancy. Lists various conditions like Pre-existing liver disease, Viral infections, Cirrhosis, Autoimmune diseases, etc.

The relationship between pregnancy and hepatic function is complex phenomena. Pregnancy induces certain physiological changes in the liver, if these changes exaggerate, it may result in pregnancy-associated acute liver disease (PAALD). PAALD may occur as a result of pre-eclampsia, due to the HELLP (Hemolysis, Elevated Liver Enzymes, Low Platelet Count) syndrome and acute fatty liver of pregnancy.

PAALD has been proved to be associated with a worse prognosis and may require termination of pregnancy.[2]

Acute liver failure (ALF) is defined as the rapid development of hepatocellular dysfunction, specifically coagulopathy and encephalopathy in a patient with no previous hepatic disease.[1] Acute liver failure is the leading cause of hepatic encephalopathy. ALF in pregnancy can also occur due to an acute insult, most frequently a virus or a drug such as paracetamol.[3] Worldwide and especially in developing countries, the most common cause of ALF is viral hepatitis[2] In India, 95% of ALF is due to viral hepatitis out of which 40% is due to hepatitis E virus (HEV) and nearly 30% due to hepatitis B virus.[5,6,7] Wide variety of acute and chronic liver diseases like acute viral hepatitis, acute fatty liver of pregnancy, pre-eclampsia related liver injury etc. may lead to hepatic encephalopathy in pregnancy. Hepatitis E virus infection is a particularly important cause of viral hepatitis in developing countries where this infection is endemic. HEV infection in pregnancy can adversely affects the fetal outcome in respect of increased frequencies of abortions, stillbirths, and neonatal deaths.[3] Although few authors found a poor prognosis in pregnancy with HEV infection. Most of authors state that pregnancy per se is not to be regarded as a poor prognostic factor for a patient with ALF.[2,7] The difference in outcome among different studies has been attributed to the change in genotype of the virus or the nutritional status of pregnant women. Li XM et al Investigated the clinical characteristics of fulminant hepatitis in pregnancy. The most common complication of hepatitis in pregnancy was HE (76%). Others were HRS (64%), peritonitis (56%),

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hemorrhage (56%), and pulmonary infection (16%). Compared to the FHNP group, there were significant differences in the incidence rates of HE, HRS and hemorrhage and the incidence of preterm labor, dead fetus and neonatal asphyxia were high in this group.[10].

Grading of encephalopathy was done as follows.[8]

Grade 1: Loss of sleep rhythm, drowsiness, confusion, and flapping tremors

Grade 2: Features of grade 1 encephalopathy with loss of sphincter control

Grade 3: Unconsciousness with no response to oral commands, but responding to painful stimuli

Grade 4: Deep unconscious state, with no response to pain

Treatment of Hepatic encephalopathy in pregnancy is mainly supportive care, same as in all other forms of acute liver failure.[9] AFLP with pre-eclampsia or eclampsia patients may have benefit from early termination of pregnancy, and in cases of viral hepatitis supportive measures are taken first and delivery is planned accordingly. Vaginal delivery is preferable than cesarean delivery to prevent complications of coagulation disturbance. Neonate should be taken care for prevention of hypoglycemia, hypothermia and vaccinated or immunized against Hepatitis B infection.[1]

MATERIAL AND METHOD

The present study is a case series conducted at tertiary care center in north India during the period of 2 yrs. The study included total 10 pregnant cases, presented in emergency OPD with different grades of hepatic encephalopathy. Data regarding their age, socioeconomic status, symptoms and signs, different parameters of laboratory investigations; hemodynamic status, coagulation profile and viral markers were collected and analyzed. The hematological and biochemical investigation included Complete blood count, Liver function test, Kidney function test, Prothrombin time. The viral studies like anti-hepatitis A IgM, hepatitis B Surface Ag, anti-hepatitis C IgM and IgG, and anti-hepatitis E IgM also included in study. These cases were managed in intensive care unit of our tertiary care center. The course of their pregnancy was closely monitored till termination of pregnancy and their fetal outcome were recorded. The final outcome of observation was the discharge or death of the patient. A comparison was done between the “survivor” and “non-survivor” cases regarding the grade of encephalopathy, type of viral hepatitis, biochemical, hematological picture and coagulation profile to find out the factors responsible for maternal and neonatal mortality.

RESULTS

Symptoms and signs- All cases were between 21 and 35 years of age. All the cases belonged to the Low socio-economic strata of the society. The most common presenting symptoms were jaundice, nausea, vomiting, and abdominal pain.

Symptoms	No. of Cases(n=10)
Nausea	10
Vomiting	10
Jaundice	10
Pain in abdomen	06

Laboratory parameters

Lab parameters	No. of Cases(n=10)
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1: Hemoglobin(gm/dl)	<7	01	7-9.9	06	10-10.9	03
2: Total leukocyte count(cells/mm ³)	4500-11000	08	18000-21000	02		
3: Platelet counts(μL)	150-400,000	07	18000-62000	03		
4: Total serum bilirubin(mg/dl)	4- 8	7	8.1- 13	3		
5: ALT(IU/mL)	170- 350	6	351- 650	4		
6: AST(IU/mL)	200- 250	4	251- 350	6		
7: ALP(IU/mL)	200- 500	6	501-900	4		
8: Deranged Coagulation profile	04					

(Prothrombin time, INR)

ALT: Alanine aminotransferase, AST: Aspartate aminotransferase, SAP: Serum alkaline phosphatase, INR: International normalized ratio)

All cases were anemic and had increased serum bilirubin and Liver enzymes, 3 case had thrombocytopenia and 4 had deranged coagulation profile.

3: Type of Viral Hepatitis

Type of Viral hepatitis	Cases
Hepatitis B virus	01
Hepatitis E virus	03

Out of 10 cases of Hepatic encephalopathy 4 cases had Viral hepatitis; Hepatitis E virus were found in 3 cases and Hepatitis B in 1 case, other 6 cases could be a result of PAALD or undetected virus.

4: Grades of Hepatic encephalopathy

Grade	No. of cases(n=10)
Grade 2	03
Grade 3	04
Grade 4	03

Out of 10 cases of hepatic encephalopathy, 3 cases had grade 4 HE, 3 cases had grade 2 HE and 4 cases had grade 3 HE. Two cases in grade 4 had deranged coagulation profile and both patients did not survive with fetus in utero. Among both, one case had severe anemia (Hg 6 gm/dl) and other was Hepatitis E IgM positive.

5: Maternal and Fetal outcome

No of cases(n=10)	
Maternal outcome	
Survived	08
Died	02

Fetal outcome	
Survived	06
Died	04

Out of 10 cases, 8 women were survived and 2 women died. Among 8 cases, 6 cases had spontaneous vaginal delivery, all 6 fetuses survived. 2 cases had IUD and delivery conducted by induction of labor. While 2 cases had maternal mortality with fetus in utero. None had undergone cesarean section.

DISCUSSION

Our study included 10 cases of different grades of Hepatic encephalopathy in pregnancy. our collected data showed that all cases were in young age group and belong to lower socioeconomic strata of society. All cases had common sign and symptoms like Nausea, vomiting, pain abdomen and jaundice as also shown in different studies.[2,9,11]

All patients had different grades of Hepatic encephalopathy at the time of admission. Three patients with grade 4 Encephalopathy also had anemia, higher level of bilirubin and liver enzymes. Four cases had deranged coagulation profile, out of which, 2 patients died with fetus in utero. This finding

was correlated well with other studies which showed, the higher grade of hepatic encephalopathy and worse prothrombin time at the time of admission was associated with increased maternal and fetal mortality.[9,11]

Out of 10 cases, 4 cases were positive for Viral hepatitis infection, in which 3 had HEV infection and 1 had HBV infection. Two HEV positive cases had deranged coagulation profile and 1 had maternal mortality. The incidence of HEV infection is reported to be high in pregnant women as compared to non-pregnant women.[3,5,9] Six cases were delivered spontaneously and all 6 neonate survived, and 2 cases had intra uterine fetal demise, delivered by induction of labor while 2 cases died with fetus in utero. No case was undergone cesarean section.

The cases who died of Acute liver failure due to Acute viral hepatitis had worse prothrombin time, higher still-birth rate and worse hepatic encephalopathy at the time of admission. There was no difference in maternal mortality in pregnant women who delivered and in those who continued the pregnancy.[9] Though in some studies, maternal mortality is found to be high in PALLD as compared to Viral hepatitis group.[2,9,11] Maternal mortality and still birth rate in our series were associated with the higher grade of Hepatic Encephalopathy, coagulopathy and low platelet count at the time of admission.

CONCLUSION

Pregnant women are more susceptible for Acute Liver failure. ALF present with increasing grades of hepatic encephalopathy, due to any cause either Acute liver disease related with pregnancy (AFLP, HELLP syndrome) or unrelated to pregnancy like Acute viral hepatitis. The adverse maternal and neonatal outcome depend on the severity of the clinical presentation and deterioration of laboratory parameters at the time of admission, irrespective of the cause of the Acute liver injury. Therefore, early diagnosis and timely management is very important in pregnant women presenting with pregnancy related, or unrelated causes of Acute liver injury. Well-equipped intensive care setting and with multidisciplinary team approach management is mandatory in those patients.

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