

STUDY TO DETERMINE THE FETAL AND MATERNAL OUTCOME IN ACUTE VIRAL HEPATITIS

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Abstract

Acute viral hepatitis is the commonest cause of jaundice in pregnant women with clinical evidence of hepatitis with HEV being the predominant cause. Acute viral hepatitis is a systemic infection caused by six distinct types of viruses A, B, C, D, E and G. The present study was a prospective observational study done in the Department of Obstetrics and Gynaecology, Patna Medical College & Hospital, Patna over a 2 years period with 100 pregnant patients suffering from acute viral hepatitis. This study was conducted to know the prevalence, obstetric complications and maternal, perinatal outcome in pregnant women presenting with acute viral hepatitis. In our setup most common cause of acute viral hepatitis with adverse fetomaternal outcome was found to be with Hepatitis E. HBV was found to be the 2nd most common etiological factor followed by HAV. Adverse fetomaternal outcome like abortion, preterm, LBW, IUGR, IUD, higher NICU admissions, coagulation derangement, PPH, hepatic encephalopathy were mostly associated with HEV infection. Acute viral hepatitis was associated with a maternal mortality of 17% mostly attributable to HEV infection. In a developing country like India, awareness of pregnant women about viral hepatitis, regular ANC care, cost effectiveness and easy accessibility to health care system and treatment plays a key role in improving the current situation.

Keywords: Viral hepatitis, Maternal, Fetal, Pregnancy

INTRODUCTION

Acute viral hepatitis is a systemic infection caused by six distinct types of viruses A, B, C, D, E and G. Acute viral hepatitis is usually self limiting and has altered liver function test, rise in serum aspartate aminotransferase along with clinical jaundice.[1,2] Pregnancy appears to be a potential risk factor for viral replication and leads extreme low immune status of pregnant women. Viral hepatitis in pregnancy can lead to coagulation defects, postpartum haemorrhage, organ failure and high maternal mortality and poor outcomes of their newborns such as still births, neonatal deaths, acute and chronic liver disease and hepatocellular carcinoma. So early diagnosis and treatment is required for better management of the patients. Therefore, it is included in the screening tests in antenatal visits in health programme. Viral hepatitis is quite different in pregnant women than the non pregnant women in the developing countries.[3,4] HEV and HBV infections during pregnancy are associated with fulminant hepatic failure and high mortality rate.[5,6] HEV infection is responsible for worse maternal and fetal outcome in pregnant

women with compared to other types of viral hepatitis.[7] Hepatitis B during pregnancy is related to its role in the perpetuation of chronic infection through vertical transmission. Mothers with a reactive serum test for HBeAg have more circulating virus and higher rates of perinatal transmission than do mothers without detectable serum HBeAg and a reactive serum test for anti-HBeAg.[8] The risk for vertical transmission of HCV is about 5%-10% and the risk increases by 2 fold if there is co-infection with HIV. [9] This study was conducted to know the prevalence, obstetric complications and maternal, perinatal outcome in pregnant women presenting with acute viral hepatitis. Viral hepatitis is the most common cause affecting the pregnant patient, prevalence being one in 700 pregnancies[10]

Materials And Methods:

Study Subject

The present study was carried out with 100 pregnant women with clinical and biochemical evidence of acute viral hepatitis admitted in emergency and RCH clinic, Department of Obstetrics and Gynaecology,

Patna Medical College & Hospital, Patna irrespective of their age and parity.

Study Design-

It is a Prospective observational study

Study Duration

The study was conducted over a period of 2 years from November 2016 to October 2018.

INCLUSION CRITERIA

- All pregnant women visited to the obstetrics department , irrespective of gestational age and parity with sign and symptoms of acute viral hepatitis(jaundice,fever, nausea, vomiting) were included in the study.
- Recent onset of jaundice in absence of any chronic liver disease
- Sr.bilirubin >2.5mg/dl,
- serum aminotransferases >400u/lt
- Positivity for hepatotropic virus by using serologic tests.

EXCLUSION CRITERIA

- Pregnant women with other causes of jaundice like AFLP,HELLP syndrome, cholestasis of pregnancy were excluded.
- Those with clinical evidence of jaundice such as biliary obstruction,hemolytic jaundice, drug induced jaundice, those with clinical or laboratory evidence of chronic liver disease were excluded.

Parameters studied were demographic profile obstetric details of the patients and past pregnancy, Gestational age at the time of diagnosis and any other medical or obstetric complication and risk factors for hepatitis associated were also noted.

Menstrual history:

- Date of LMP
- EDD
- Previous menstrual cycle
- Age of menarchae

Obs history:

- Gravida
- Parity

Medical history:

- History of hepatitis
- History of other chronic liver diseases
- History of conditions requiring blood transfusion,or injectable drugs

Family history:

Any family member or close contact/ partner /children suffering from hepatitis.

Abdominal examination

- Fundal height
- Abdominal girth
- Fetal lie, presentation,osition
- Auscultation of fetal heart sound.

Routine Antenatal Investigations

- ABO & Rh typing
- Complete blood count
- Urine analysis-microscopic examination & culture
- HIV 1& 2 ELISA
- HBS Ag ELISA
- VDRL both partners
- Blood sugar 2hr after 75gm of oral glucose.
- Thyroid function test
- USG- for fetal welbeing and gestational age

Special investigation in relevance to this study:

- LFT-Serum bilirubin-direct & indirect , SGPT, SGOT ,HBSAg ELISA ,Anti HBC Ab- IgG & IgM , HBV DNA load,HBe Ag ,HCV RNA ,Anti HAV IgM & Anti HAV Ig G ,Anti HEV IgG& Ig M ,Coagulation profile ,RFT.

Results:

Table 1: Distribution Of Patients According To Parity

Parity	N (no.of pts)	%
G1	37	37%
G2	33	33%
G3	13	13%
G4	15	15%
G5	1	1%
>G5	1	1%
Total	100	100%

Most of the patients with acute viral hepatitis were primigravida (37%)

Table 2: Distribution Of Patient According To Gestational Age.

GA	N (no. of patients)	%
>37wks	73	73%
28-37wks	24	24%
24-28wks	1	1%
<24wks	2	2%

Our study shows that most of the patients with acute viral hepatitis presented in their third trimester with term pregnancy(73%).

Table 3 :Prevalance of Subtypes Of Hepatitis

Causative Hepatotrophic Virus	N (no. of patients)	%
A	20	20%
B	23	23%
C	2	2%
D	0	0%
E	53	53%
B+C	2	2%
TOTAL NO. OF PATIENTS	100	

As per our analysis most common cause of acute viral hepatitis in our setup was found to be Hep HEV(53%) virus followed by HBV (23%).

Table 4 :Maternal Morbidity

MTERNAL COMPLICATIONS	N(%)	Hep A	Hep B	Hep C	Hep D	Hep E	Hep B+C
PTL	39	12(30.76%%)	5(12.82%)	0	0	21(53.84%)	1(2.56)
IUFD	36	6(16.66%)	10(27.77%)	0	0	19(52.77%)	1(2.77%)
Deranged coagulation	34	0	11(32.35%)	0	0	21(61.76%)	2(5.88%)
PPH	31	1(3.22%)	9(29.03%)	0	0	18(58.06%)	3(9.67%)
HEPATIC ENCEPHALOPATHY	15	0	0	0	0	14(93.33%)	1(6.66%)
ARF/HRS	8	0	1(12.5%)	0	0	6(75%)	1(12.5%)
DIC	5	0	0	0	0	4(80%)	1(20%)

As per analysis the most common maternal complication in our study was found to be preterm labour found in 39% of cases .This was followed by IUFD (36%), deranged coagulation(34%), PPH(31%) cases, hepatic encephalopathy (15%) cases, ARF/HRS in 8% cases DIC in 5% cases. HEV was found to be the most common etiology for the maternal complications.

Table 5: Cause of Maternal Mortality

HEP A	1	5.88%
HEP B	2	11.76%
HEP C	0	0%
HEP D	0	0%
HEP E	12	70.58%
HEP B+C	2	11.76%
Total Mortality	17	100%

Maximum maternal mortality was seen with Hepatitis E 70.58%

Table 6:Fetal Outcome

Fetal outcome	No. of patients
Live birth	62
Iud	36
Abortion	2

According to our study maximum number of pregnant patients with acute viral hepatitis had live birth (62%).36% patients had IUD and 2% patients had abortion.

Table 7:Complication In The New Born

Newborn complications		Hep A	Hep B	Hep C	Hep D	Hep E	Hep B+C
LBW babies	16(25.80%)	3(18.75%)	4(25%)	1(6.25%)	0	8(50%)	0
IUGR	4(6.45%)	1(25%)	1(25%)	1(25%)	0	1(25%)	0
Preterm	22(35.48%)	8(36.36%)	2(9.09%)	0	0	11(50%)	0
Neonatal jaundice	4(6.45%)	1(25%)	0	0	0	2(50%)	1 (25%)
Nicu admission	12(19.35%)	3(25%)	1(8.33%)	0	0	8(66.66%)	0
Neonatal death	5(8.06%)	1(20%)	2(40%)	0	0	2(40%)	0

Most common complication in our study was preterm (35.48%) followed by LBW(25.80%) , 19.35% newborn required NICU admission, 6.45% newborn developed neonatal jaundice, 6.45% were IUGR babies. The reported neonatal death was 8.06%. Most of the complications was attributable to HEV infection

Discussion:

Viral hepatitis is one of the most common and potentially serious infections that can occur in pregnant women. Acute Hepatitis E during 3rd trimester of pregnancy is a cause of fulminant hepatic failure with mortality rate ranging from 15-45 % to over 70%.Our study was done over a period of 2 years with 100 pregnant females with acute viral hepatitis in the Department of Obstetric and Gynaecology, Patna Medical College and hospital, Patna. Maximum number (91%) of patients were in the age group of 20-29years.Most of the patients with acute viral hepatitis were primigravida (37%).Our study shows that most of the patients with acute viral hepatitis presented in their third trimester.35% of the patients belonged to low socioeconomic strata. 21% patients had no ANC visit where as 56% patients had less than the minimum recommended ANC visits of <4.98% patients with acute viral hepatitis presented with nausea and vomiting. 92% patients had loss of appetite.88% patients complained of yellowish discolouration of urine and sclera.76% patients presented with loose motion. Fewer patients presented with fever and disorientation. As per our analysis the most common seroprevalence among the patients with acute viral hepatitis was of HEV followed by HAV. Maximum number of patients delivered vaginally. Only 14% required cesarean section. Preterm labour was the most common maternal complication found in 39% patients. The mortality rate in our study was 17% mostly seen with IUD & hepatic encephalopathy .Our study showed a 62% live birth, 36% IUD, and 2% abortion. HEV was responsible for 52.77% IUD.HEV was associated for majority for the adverse maternal

and fetal outcome.HAV and HEV have similar epidemiology with outbreaks resulting from substandard hygiene and sanitation. Complete immunization against viral hepatitis of all women of reproductive age group, hygienic environment, information, education and communication activities can prevent the poor fetomaternal outcome in pregnant women with acute viral hepatitis. M Beniwal et al [11], conducted a prospective study on 97 pregnant patients in third trimester with acute viral hepatitis or fulminant hepatic failure consecutively attending the department of Obstetrics and Gynaecology and Medicine from March 2000 to April 2002 to find out the prevalence and severity of acute viral hepatitis and fulminant hepatitis during pregnancy in North India. HEV infection alone was responsible for 47.4% of the cases of viral hepatitis in pregnant females in the third trimester. Study conducted by Sweta Sahai et al during a period of 2007 to 2009 included all pregnant women with hepatitis reporting to the Department of Medicine, Jayarogya Group of Hospitals, Gwalior, who were studied prospectively. Most of the cases were young and in the age group of 21- 25 years. The predominant presenting symptom was jaundice. Viral Hepatitis in pregnancy caused a very high maternal mortality (19.1%) and fetal wastage (42.6%). Hepatitis E virus was the commonest causative organism (77.9%) responsible for viral hepatitis during pregnancy. It also caused the highest maternal mortality due to fulminant hepatic failure. Maternal mortality was significantly higher in those women presenting with features of encephalopathy, SIRS, high bilirubin levels and prolonged prothrombin time. Vertical transmission was noted in Hepatitis B and E.[12]

Conclusion:

Acute viral hepatitis is the commonest cause of jaundice in pregnant women with clinical evidence of hepatitis with HEV being the predominant cause. In our setup most common cause of acute viral hepatitis with adverse fetomaternal outcome was found to be

with Hepatitis E. HBV was found to be the 2nd most common etiological factor followed by HAV. Adverse fetomaternal outcome like abortion, preterm, LBW, IUGR, IUD, higher NICU admissions, coagulation derangement, PPH, hepatic encephalopathy were mostly associated with HEV infection. Acute viral hepatitis was associated with a maternal mortality of 17% mostly attributable to HEV infection. Thus, to conclude in a developing country like India, awareness of pregnant women about viral hepatitis, regular ANC care, cost effectiveness and easy accessibility to health care system and treatment plays a key role in improving the current situation. Moreover training of the doctors in PHC, EMOC and BMOC training in medical colleges and hospital to speed up the diagnosis and referral of the cases for a multidisciplinary team approach including obstetrician, gastroenterologist, neonatologist is the demand of the time.

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