



Prevalence of acute viral hepatitis in women presenting with jaundice with fetomaternal outcome

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ABSTRACT

The present study aimed to find out prevalence of acute viral hepatitis in women presenting with jaundice with fetomaternal outcome in LallaDed hospital, which is a tertiary care hospital in Srinagar, J&K, India. The study was conducted in 80 consecutive pregnant patients presenting with jaundice. Patients were evaluated on basis of history, examination, liver function profile and serological markers for A, B, C&E viruses. Viral hepatitis was cause of jaundice in 70% of cases with HEV accounting for 45% of cases and HBV accounting for 25% of cases. Abortion, IUGR, preterm labor, PPH was common complications in patients with HbsAg positivity. In HEV IgM positive women prematurity (33%) was most common complication. 4(11%) maternal deaths occurred in women positive for HEV IgM. Viral hepatitis was predominant cause of jaundice with HEV causing majority of cases. Prematurity was common complication of HEV. Maternal mortality was 11% in HEV positive cases.

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INTRODUCTION

Jaundice in pregnancy is rare but potentially serious to fetal health. It can be caused by pregnancy or occur intercurrently. The most common cause of jaundice in pregnancy is acute viral hepatitis. Acute viral hepatitis is a systemic infection predominantly affecting the liver and is caused by six distinct types of virus A, B, C, D, E and G.¹ The course of most of the hepatitis is unaffected by pregnancy except in patients with hepatitis E in which fetal and maternal mortality rates are significantly increased. HEV is emerging as a cause of maternal and fetal mortality.^[1] The hepatitis B virus and hepatitis C virus infection in mother carries risk of transmission to the fetus. Risk of HBV transmission to fetus is 10% in first trimester and as high as 90% in third trimester.² The strong possibility of vertical transmission lends importance to diagnosing acute and chronic HBV infection in pregnant women and justifies

mandatory antepartum serum screening for HbsAg. Perinatal transmission also occurs in hepatitis C infection. In pregnancy it may cause septicemia, PPH, DIC, hepatic encephalopathy and coma with high mortality, effects on fetus are not known, but perinatal mortality is 51.5% which is high due to prematurity and sepsis.³ Hepatitis E is a self-limited, enterically transmitted acute viral hepatitis. It occurs in epidemic and sporadic forms in Indian sub-continent.⁴ HEV is a major cause of acute hepatitis in pregnant women with adverse maternal and perinatal outcome.⁵ The increased concentration of Th2 cytokines in pregnant women with hepatitis E may have a role in greater severity of HEV in pregnant women. HEV is associated with high rates of preterm labor and maternal mortality.⁶ There is no specific treatment available for HEV infection.

Recombinant vaccines are being developed and may be particularly useful for pregnant women.⁷

The study was undertaken to determine the incidence of viral hepatitis in women presenting with jaundice during pregnancy and correlate it with maternal and fetal outcomes.

MATERIAL AND METHODS

The study was conducted at Department of Obstetrics and Gynaecology, Lala Ded Hospital, which is a tertiary care hospital in Srinagar J&K, India. Consecutive pregnant women at any gestational age who presented with jaundice were systematically assessed for hepatitis virus infection by using LFT and serological analysis. Acute viral hepatitis was diagnosed by serum bilirubin level of $\geq 2\text{mg/dl}$, a serum ALT, AST level 2.5 times upper level of normal and positivity for any hepatotropic virus by using following serological tests: HbsAg, HCVIgM, antibodies to hepatitis A virus, hepatitis B core antigen and HEV. Patients with negative results on serology, dual infection and those with clinical evidence of other causes of jaundice such as biliary obstruction, hemolytic jaundice, drug induced jaundice and those with clinical or laboratory evidence of chronic liver disease were excluded from the study.

Women who met the case definition of acute viral hepatitis were managed in separate isolation ward. Patients were given standard care and were monitored for signs and complication of viral hepatitis (Fever edema, ascitis, paralytic ileus, nasal and gastrointestinal bleeding, high leukocyte count, high creatinine concentration, hepatic encephalopathy, clinically significant coagulation defect, hypoglycemia, hyponatremia, hypo/hyperkalemia and obstetric complications). If their condition improved patients were discharged and instructed to return for regular out patient follow up visits until delivery. Termination of pregnancy was considered in patients with IUD nonreactive NST, post, dated pregnancy and PROM only if patient had improving LFT and coagulation profile correctible by giving FFP. Women with AFD, NPOL, and obstructed labor underwent C section.

The study did not require institutional review or documented informed consent from patients because patient received care according to standard clinical protocol and care was not influenced by their inclusion in the study and data were collected and recorded according to ethical standards and norms in India and were analyzed with total anonymity of patients.

RESULTS

Table-1 Age distribution in studied subjects (in years)

AGE (in Years)	N	%
≤ 20	10	12.50
21 – 25	37	46.25
26 – 30	25	31.25
31 – 35	8	10.00
Mean \pm SD	25.2 \pm 4.0 (19,35)	

The mean age in the women in the study group was 25.2 \pm 4 {19-35 years}

Table-2. Distribution of cases in relation to order of pregnancy

Gravida	N	%
G1	14	17.50
G2	28	35.00
G3	21	26.25
G4	7	8.75
G5	6	7.50
G6	4	5.00

Out of 80 cases in study 12(17.5%) were primigravida, 28(35%) were second gravid, 21

(26.25%) were third gravid, while 21.25% were gravida four and above.

Table 3. Distribution of cases seropositive for hepatitis virus

Serology	N	%
HAV IgM	0	0
HbsAg	20	25
HCVIgM	0	0
HEVIgM	36	45

Out of 80 cases presenting with jaundice 20 (25%) were positive for HbsAg and 36(45%) were

positive for HEVIgM. No case of HAV or HCV was found.

Table-4. Distribution of cases seropositive for hepatitis virus with fetomaternal outcome

Outcome		HbsAg (n=20)	HEV IgM (n=36)
Abortion	n	5	0
	%	20	0
Preterm Labor	n	5	12
	%	20	33
IUGR	n	5	0
	%	20	0
IUD	n	0	4
	%	0	11
Fetal distress	n	5	0
	%	20	0
PPH	n	0	4
	%	0	11
Hepatic Encephalopathy	n	0	4
	%	0	11
Maternal Death	n	0	4
	%	0	11

Among 20 HbsAg positive women 5(20%) had abortion, 5(20%) had preterm labour, 5(20%) had IUGR, 5 (20%) had PPH & 5(20%) had fetal distress. Among 36 HEV IgM positive, 12 (33%) had preterm labour, 4(11%) had IUD, 4 (11%) had fetal distress and 4(11%) had PPH. 4(11%) maternal deaths occurred due to hepatic encephalopathy.

DISCUSSION

In our study 80 pregnant women presented with jaundice with 56 having features of viral hepatitis. Among these 20(25%) were HbsAg positive and 36(45%) were HEV IgM positive. NO HCV or HAV positive case was found in our study. In our study 70% of cases of jaundice were due to viral hepatitis. Sharda Patra et al(2007) determined in their study that 69% of patients presenting with jaundice had viral hepatitis.^[9] Yuel Veronica et al(2006) determined that acute viral hepatitis accounted for 61.54% of cases presenting with jaundice.¹⁰

HBV was responsible for 25% of cases presenting with jaundice. Archana et al (2004)³ and Tsenga et al(1992)¹³ observed HBV prevalence among pregnant women was to the tune of 25.4% and 22% respectively. In our study HEV was responsible for acute hepatitis in 45% of pregnant women presenting with jaundice. Benwal et al(2003) in their study determined that the HEV prevalence was 47.4% in pregnant women.^[1] Kumar et al(2004) have reported HEV prevalence to the extent of 45% in women presenting with jaundice.¹¹

The 20 HbsAg positive women were studied for pregnancy outcome. Among them 5(20%) had an abortion, 5(20%) had preterm labour, 5(20%) had IUGR, 5(20%) had PPH and 1(20%) developed fetal distress. Sharda Patra et al (2007) in their study have reported adverse pregnancy outcomes in HBV positive women.^[9] The outcomes in their study were preterm labour in 75%, IUD in 31%, abortions in 5% and stillbirth in 1%. Heibner et al(1977) have noted increased incidence of prematurity (31.6%) as against general population.¹²

In our study 36 cases turned out to be positive for HEV IgM. Among them 12(33%) had preterm labor, 4(11%) had IUD, 4(11%) had fetal distress and 4(11%) had PPH. 4(11%) maternal deaths occurred due to hepatic encephalopathy. Yuel Veronica et al(2006) reported preterm labour in 56%, IUD in 28%, IUGR in 20%, abortion in 22%, and fetal distress in 33% of HEV infected pregnancies. Maternal death rate was reported to be 12%.¹⁰ In our study preterm labor was the most common outcome followed by IUD. Maternal death rate in our study was 11.1%.

CONCLUSION

Viral hepatitis is the most common cause of jaundice in pregnancy with HEV being the predominant cause. Abortion, preterm labor, IUGR, fetal distress, and PPH were the common complication with HBV infection. In HEV infection prematurity was most common complication with IUD, fetal distress and PPH being other complications. HEV infection had a high maternal mortality of 11%.

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