Original Article

Liver Disease During Pregnancy

Etiology and Epidemiology of Patients Presenting with Liver Disease During Pregnancy

1. Aftab Haider Alvi 2. Mirza Muhammad Ilyas Baig 3. Omer Sabir

1. Asstt. Prof. of Gasteroenterology and Hepatology, FMH, Lahore 2. Assoc. Profof Medicine, FMMC, Lahore
3. Senior Registrar of Medicine. FMH, Lahore.

ABSTRACT

Objective: We conducted this study to elaborate the etiology and epidemiology of liver diseases presenting during pregnancy.

Study Design: It was a prospective, observational study.

Place and Duration of Study: This study was conducted in the Department of Gastroenterology, Fatima Memorial Hospital in collaboration with the Department of Obstetrics and Gynaecology from June 2011 –May 2013.

Materials and Methods: 73 patients were evaluated. Data was evaluated for quantitative and qualitative variables. Outcome of mother, pregnancy and neonates was also recorded where available.

Results: During the study period 73pregnant patients were evaluated for the presence of liver disease giving an incidence of 3.6%. The mean age of the patients was 26.3 $\pm$ 3.8 (median: 26, range: 16 – 45) years. The patients presented at a mean gestational age of 5.8 $\pm$ 2.4 (median: 6, range: 1- 9) months. The mean STB and ALT levels were 11.5 $\pm$ 8.5 (median: 9.3, range: 1.4 – 48) mg/dL and 943.5 $\pm$ 887.4 (median: 765, range: 13 – 4810) IU/L respectively. The mean duration of jaundice and mean hospital stay were 6.82 $\pm$ 5.32 (median: 5, range: 2 – 30) days and 5.6 $\pm$ 2.7 (median: 5, range: 1 – 18) days. Fulminant hepatic failure was seen in 6.8% of the patients. Acute Hepatitis E was the most frequent diagnosis in our population. Maternal deaths were seen in 8.2%, foetal deaths were seen in 12.3% and neonatal deaths in 6.5%.

Conclusions: Liver diseases during pregnancy can have multiple causes and may predict poor outcomes for the patients and neonates.

Key Words: Hepatitis, Jaundice, Hepatitis in Pregnancy.

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INTRODUCTION

Pregnant women may suffer from a variety of liver diseases and usually present with jaundice. Clinicians should be aware of the clinical presentations and causes of jaundice and be able to manage these conditions keeping in mind the peculiarity of the situation where foetus is also at risk because of the maternal condition.

The work up of these patients should be undertaken on an urgent basis and every effort should be made to elucidate the cause of jaundice. The liver diseases that present or flare up during pregnancy may have variable effects on maternal and foetal outcomes. The management of these patients will require close collaboration between a hepatologist, naonatologist and obstetrician preferable in a setup where advanced management facilities are available.

Correspondence: Aftab Haider Alvi
Asstt. Prof. of Gasteroenterology and Hepatology, FMH, Lahore
Phone No.: 042 111 555 600 Ext. 482.
E-mail: alviaftab@hotmail.com

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. 73 patients were enrolled over a period of two years from June 2011 –May 2013. These patients were either admitted under obstetrics service or were referred to us in the out- patient department for evaluation of symptomatic jaundice and/or deranged liver profile.

The demographics of the patients were recorded in specially designed prforma after taking informed consent and patients were triaged according to the severity of the condition for admission, follow up on outdoor basis or follow up on telephone. Every effort was made to follow these patients up to and beyond the completion of the pregnancy.

RESULTS

A total of 2012 gestations were managed by our Department of OBGYN during the period from June

2011 – May 2013. A total of 73 patients were referred to us with complaints of jaundice, giving a point incidence of 3.6%. The demographic profile of these patients is given in table 1. Maternal and fetal outcomes are tabulated in table 2 whereas table 3 shows the incidence of obstetric complications and neonatal outcomes. The frequencies of various signs and symptoms are given in table 4. Figure 1 shows the etiology of diseases leading to jaundice in pregnancy.

Table No.1: Demographic Profile

Total number of patients.	73	Parity	
Mean age	26.3 ± 3.8 years.	0 – 1	46 (63%)
Age range (years)		2 – 4	22 (30%)
15 - 25	30 (41.1%)	More than 4	5 (6.8%)
26 – 35	37 (50.7%)	Single/Multiple	
36 – 45	6 (8.2%)	Single	69 (94.5%)
Mean gestational age.	5.8 ± 2.4 months.	Multiple	4 (5.5%)
Pregnancy trimester			
1st Trimester	4 (5.5%)	Mean duration of jaundice.	6.82 ± 5.32 days.
2nd Trimester	16 (21.9%)	Mean duration of hospital stay	5.6 ± 2.7 days.
3rd Trimester	53 (72.6%)		
Mean presentation serum total bilirubin.	11.5 ± 8.5 mg/dL.		
Mean presentation serum ALT	943.5 ± 887.4 IU/L.		
ALT range (IU/L)			
0 – 39	5 (6.8%)		
40 – 299	12 (16.4%)		
300 and above	56 (76.7%)		

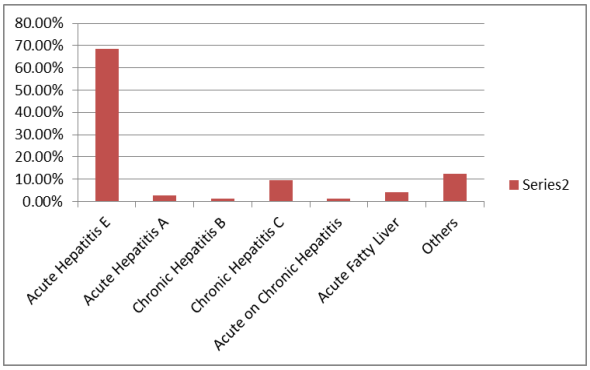

Figure No.1: Incidence of Liver Diseases at our centre.

Table No.2: Maternal and fetal outcomes

Maternal outcomes		**Fetal outcomes**	
Delivered, term, no complications	38 (52%)	Intrauterine Death	9 (12.32%)
Delivered, term, complications	5 (6.8%)	Full term delivery	43 (58.9%)
Delivered, preterm, no complications	7 (9.6%)	Spontaneous preterm	10 (13.7%)
Delivered, preterm, complications	6 (8.2%)	Induced preterm, foetal distress	6 (8.2%)
Discharged with viable pregnancy	12 (16.43%)	Induced preterm, maternal distress	4 (5.5%)
Fulminant Hepatic Failure	5 (6.8%)	Abortion	1 (1.4%)

Table No.3: Obstetric complications

Obstetric complications		**Neonatal outcomes. N=63**	
Ante-partam Hemorrhage	4 (5.5%)	Alive	58 (93.5%)
Intra-partam Haemorrhage	2 (2.7%)	Expired	5 (6.8%)
Postpartam Haemorrhage	5 (6.8%)		
Premature Rupture of Membranes.	2 (2.7%)		
None	60 (82%)		

Table No.4: Frequencies of various signs and symptoms

Symptoms	**Frequency**	**Signs**	**Frequency**
Fever	35 (47.9%)	Jaundice	69 (94.5%)
Lethargy	37 (50.7%)	Hepatomegaly	12 (16.4%)
Anorexia	39 (53.4%)	Splenomegaly	2 (2.7%)
Right Upper Quadrant Pain	24 (32.9%)	Encephalopathy	5 (6.8%)
Dark coloured urine	49 (67.1%)	Ascites	8 (11%)
Altered mental status	5 (6.8%)	Oedema	6 (8.2%)
Hematamesis	1 (1.4%)		

DISCUSSION

Our study was undertaken with a view to describe the causes and demographic profile of pregnant patients presenting with manifestations of liver disease. Our tertiarycare department boasts of a fully functional OBGYN and Gastroenterology – Hepatology unit.

Our study shows that gestation is complicated by the presence of liver diseases in up to 3.6% of the cases. This incidence is in confirmation to some of the previously published studies.[1,2]

The mean age at presentation was 26.3 ± 3.8 years (range: 15 – 45 years) and the mean gestational age was 5.8 ± 2.4 months (range 1 – 9 months). As expected most patients (53, 72.6%) presented in the third trimester. Some of the liver diseases have a predilection to present during the third trimester e.g. acute fatty liver of pregnancy and preeclampsia/HELLP syndrome.

The cardinal features of liver disease seen in our cohort are presented in table. It should be kept in mind that some of the physiological changes of pregnancy can give rise to symptoms and signs that can be ascribed to liver diseases such as vomiting, spider angioma, talengiectasia, palmer erythema and lower limb edema.[3,4] However an astute clinician will always order liver enzymes to exclude liver disease in these patients. It is not surprising that the most common symptom were fever and subjective complaints of lethargy and anorexia. Jaundice was the most common sign and encephalopathy was seen in 5 (6.8%) of the patients who were all diagnosed to have Fulminant Hepatitis leading to liver failure.

Serum albumin was found to be normal (more than 3.5 mg/dL) in 54 (74%) patients, between 2 – 3.5 mg/dL in 14 (19.2%) patients and less than 2 mg/dL in 5 (6.8%) patients. It should be kept in mind that a normal physiological response to pregnancy is hemodilution which will lead to decreased albumin as observed by Almashhrawi AA et al.[5] However in our cohort patients with liver failure had significantly decreased serum albumin not explainable by hemodilution alone.

The etiology of liver diseases experienced by our cohort is given in table. As expected Hepatitis E was the most common (n=50, 68.5%) and cause of fulminant hepatitis leading to liver failure in 5 (6.8%) patients. The incidence of Hepatitis E in our cohort is similar to Sultana R et al (25 out of a total of 38 patients, 65.8%)[6], however it differs from other regional studies.[7,8] Shukla S et al observed that most common viral hepatitis during pregnancy was hepatitis B. This is far from our experience as well as that of Sultana R and Kumara A. In our setup most of the patients booked with the department of OBGYN receive Hepatitis B vaccination either prior to or during the initial period of gestation. This probably explains such low incidence of Hepatitis B in our study population. Apart from the causes enumerated in the table, 1 of our patients had hyperemesis gravidarum with deranged liver profile. This patient became stable in the next few days but was kept on follow up for the duration of pregnancy. One patient developed jaundice in second trimester and the clinical picture was consistent with Intrahepatic Cholestasis of Pregnancy along with previous history of episodes of jaundice during pregnancy. Seven patients were diagnosed to have Preeclampsia/ Eclampsia/ HELLP syndrome. All except one of these patients presented during the third trimester.

There were six maternal deaths in our cohort (8.2%). 5 patients had fulminant hepatic failure (FHF) all due to Hepatitis E infection and one patient had acute fatty liver of pregnancy (AFLP). 5 deaths (4 with FHF and 1 with AFLP) occurred pre-partam and one death (FHF) occurred post-partam. Fulminant Hepatic Failure during pregnancy has a high maternal mortality rate as reported by the local data ranging from 30% to 90%[9, 10] The management requires specialist care in hepatobiliary intensive care units which are not available widely in this part of the world. The incidence of maternal death with acute fatty liver of pregnancy is thought to vary widely from 1.1%[11] to 12.5%[12].

Total perinatal mortality was 20.54%. This is slightly less than that reported by Sultana R et al.[6] There were 9 (12.32%) intrauterine deaths (4 in mothers with FHF, 2 in AFLP, 3 in mothers having preeclampsia/eclampsia/ HELLP syndrome) and one abortion in a patient with chronic hepatitis C. The foetal outcomes are generally thought to be poor in mothers with FHF. All of our patients who developed FHF had Acute Hepatitis E. The incidence of stillbirth was reported to be 54% from advanced centres.[13]) The foetal mortality in AFLP which was considered to be around 50% is now thought to be around 23%[14] (. However, it has to be noted that the foetal mortality in preeclampsia, eclampsia and HELLP syndrome can not only be ascribed to liver involvement. These are considered to be widespread systemic conditions involving all the organs of the body leading eventually to multi-organ failure. According to regional data the outcome of pregnancies complicated by HELLP syndrome is considered to be poor.[15, 16] (This impression is shared by other studies as well.[2]

There were 5 (7.9% of alive births) neonatal deaths in our cohort. Two of the deaths occurred after pregnancies were complicated by AFLP and one each was observed in neonates born to mothers with Chronic Hepatitis B, AFLP and HELLP syndrome. Three neonates expired because of respiratory distress syndrome and one each because of asphyxia and neonatal sepsis.

CONCLUSION

Liver diseases in pregnant patients at our institute show similar characteristics to patients reported from other regional centres. Acute Hepatitis E is the most common

cause of liver disease and has a bearing on the maternal and foetal outcomes.

Conflict of Interest: The study has no conflict of interest to declare by any author.

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