STUDY OF FETOMATERNAL OUTCOMES IN A TERTIARY CARE HOSPITAL RELATED TO LIVER DISORDERS DURING PREGNANCY

Sasmita Behuria [a], **Swarupa Panda** [b], **Sushanta Kumar Jena** [c] **and Minakshi Mohanty** [1,d]

[a] Associate Professor, Department of Obstetrics and Gynaecology, SCB Medical College and Hospital, Cuttack, Odisha, India , [b] Associate Professor, Department of Paediatrics, SCB Medical College and Hospital, Cuttack, Odisha, India , [c] Associate Professor, Department of Hepatology, SCB Medical College and Hospital, Cuttack, Odisha, India , [d] Associate Professor, Department of Community Medicine, SCB Medical College and Hospital, Cuttack, Odisha, India

ABSTRACT Introduction: Pregnancy-related liver diseases are significant medical conditions with poor prognoses that challenge obstetricians and hepatologists. Around 3% of pregnancies worldwide and 3-5% of pregnancies in India are impacted by it. Numerous symptoms can be present, including a yellowish discoloration of the sclera, black urine, anorexia, nausea, vomiting, and stomach pain. In addition, hyperemesis gravidarum, preeclampsia, eclampsia with liver dysfunction, hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome, intrahepatic cholestasis of pregnancy (IHCP), and acute fatty liver of pregnancy are among the specific liver illnesses associated with pregnancy. **Methods:** This prospective observational study was carried out at the SCB Medical College and Hospital in Cuttack, Department of Obstetrics and Gynecology. Based on the inclusion criteria, 85 prenatal cases were prospectively investigated. Those who underwent a thorough history and examination, clinical symptoms suggestive of liver disorders, all available LFTs, including LDH, as well as some more conclusive tests to help identify the underlying cause, were then monitored up until delivery in terms of the outcome for the maternal and the foetus. **Results:** There were 0.86% cases of hepatic problems during pregnancy. In the study group, 76.5% of cases appeared in the third trimester of pregnancy, 72.9% of cases were primigravida, and 90.59% of cases were between 20 and 30 years old. 76.4% of the participants in this study had a liver condition unique to pregnancy, of which 32.9% had pre-eclampsia, 11.7% had eclampsia, and 11.7% had HELLP syndrome. 16.4% had ICP, 2.3% had AFLP, and 1.1% had hyperemesis gravidarum. Morbidity was 34.12%, and maternal mortality was 10.58%. Preterm 21.1%, stillbirth 38.82%, live birth 61%, and IUGR 24.7%. In 28.57% of cases, NICU admission is necessary. **Conclusion:** Poor maternal and foetus outcomes are linked to abnormal liver function during pregnancy. Many pregnant women and their unborn children can be saved by routine prenatal screenings, liver problem diagnosis, and treatment.

KEYWORDS low platelet count, intrahepatic cholestasis of pregnancy, Gravidity

Introduction

Liver illness is a rare but potentially dangerous pregnancy condition that is more common in developing nations than in wealthy nations. Pregnancy-specific factors like hemolysis, elevated liver enzymes, low platelet count (HELLP syndrome), acute fatty liver of pregnancy (AFLP), intrahepatic cholestasis of pregnancy (ICP), hyperemesis gravidarum, and other diseases that develop incidentally during pregnancy, such as viral hepatitis, are among the causes of liver disorders in pregnancy. Nevertheless, a considerable decrease in bad outcomes for both the maternal and the foetus has been achieved thanks to breakthroughs in disease understanding and prompt identification and treatment.

The outcome for the foetus and the maternal is negatively impacted by liver problems during pregnancy, particularly in underdeveloped nations like India. It is responsible for 14% of maternal deaths and 60% perinatal deaths [1]. Additionally, it presents a diagnostic difficulty for hepatologists and obstetricians alike.

The prognosis for both maternal and the foetus has significantly improved due to developments in the pathophysiological mechanism, diagnostic methods, and management of liver disorders specific to pregnancy [2]. However, the way that different

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[1]Corresponding author: Minakshi Mohanty, themedona6@gmail.com

liver illnesses manifest clinically is extremely variable. In Jharkhand, a tribally dominating state, there is little information on liver diseases during pregnancy. Therefore, research is required to gather information regarding the scope of the issue in this area, the demographic factors, underlying causes, and the foetus' and maternal's outcomes in pregnancies complicated by liver problems. The objective of this study was to evaluate demographic variables, liver dysfunction's causes during pregnancy, and the feto-maternal outcome of pregnancies.

Methods

The current prospective observational study was carried out for a year at the SCB Medical College and Hospital, Cuttack, Odisha. 85 individuals with abnormal liver function tests or those suspected of having liver problems during pregnancy were selected from 9900 prenatal cases admitted to obstetric wards. These cases were recorded in a proforma and subjected to analysis. The student t-test and ANOVA test were used everywhere necessary in the statistical analysis. A p-value of 0.05 or less was regarded as statistically significant.

Inclusion Criteria

- All pregnant women with deranged liver function tests.
- Patients who were clinically suggestive of a liver abnormality.

Exclusion Criteria

- Women with chronic liver disease and drug-induced abnormal liver function tests.

Results

Out of 9,900 prenatal patients admitted, 85 cases of liver problems were detected, giving the incidence in the current study of 0.86%. The majority of instances (76.5%) were found to be primigravida and occurred in the 20–30-year age range. The majority of the cases weren't booked. Ninety-five (59%) women showed up during the third trimester. The demographic profile of patients with liver disorders during pregnancy is shown in Table 1.

Table 2 shows that 65/85 (76.4%) of the women exhibited pregnancy-specific liver impairment, with preeclampsia occurring in 28 (32.9%), eclampsia in 10, and HELLP syndrome in 10 (11.7%). In addition, 16.4% of pregnancies experience intrahepatic cholestasis, 2.3% have acute fatty liver, 1.1% have hyperemesis gravidarum, and 20 (23.5%) have viral hepatitis. Hepatitis E is discovered to be the most common viral hepatitis in pregnancy. Out of viral hepatitis cases, 50% were HEV-positive, 35% were HBV-positive, and 15% were HAV-positive cases.

Discussion

Pregnancy-related liver disorders can have catastrophic consequences for both the maternal and the foetus. They can manifest clinically as anything from modest constitutional symptoms to severe alterations in liver function tests. However, due to improved knowledge of the physiological changes that occur during pregnancy, early detection, and prompt patient management, its occurrence has decreased in the past [3-5].

In the current study, 51.6% of the cases were 20 to 30 years old, consistent with prior studies [1, 2]. 75.4% of respondents were from rural areas, which is consistent with the prevalence found in other studies [1,2]. According to the socioeconomic status highlighted by Jain M, Thaker H, Tiwari A et al. etc., in their studies [1,2], 68.2% of the population had poor socioeconomic status. In addition, 73% of patients were referred from outlying districts of the state because there were insufficient management facilities and required delivery and care in tertiary care facilities.

Most of the women in the current study were younger, of low socioeconomic status, and unbooked. Other Indian investigations have also produced similar outcomes. [1,2,3,6] According to several research, the prevalence of liver disorders during pregnancy ranges from 0.4% to 3.3%. [1,4,5] The incidence in the current study was 0.86%, which is comparable with findings from earlier investigations. The third trimester of pregnancy was the most typical. Most studies suggest that pregnancy-specific problems account for 67–89% of cases of abnormal LFT. [7,8].

Similar results were seen in our study, where 76.4% of women had preeclampsia, 32.9% had eclampsia, 11.7% had eclampsia, and 11.7% had HELLP syndrome. ICP occurred in 16.4% of cases, AFLP occurred in 2.3%, and hyperemesis gravidarum occurred in 1.1% of cases. The prevalence of viral hepatitis was 23.5%, with 50% of cases being HEV positive, 35% being HBV positive, and 15% being HAV positive. HEV is, therefore, the most prevalent viral hepatitis in pregnancy. The majority of instances of liver diseases in the first trimester were hyperemesis gravidarum, which has a highly odd pattern of a relationship with gestational age. Pregnancy-specific causes, such as preeclampsia, eclampsia, HELLP syndrome, ICP, and AFLP, are the etiological variables in the third trimester, as opposed to coincidental and non-pregnancy-specific causes in the second trimester. 9.4% of all abortion instances were reported in the current study, and 62% of deliveries were vaginal. Induction of labour was necessary for 28.2% of instances due to intrauterine death and maternal indication. In comparison, spontaneous vaginal birth happened in 34% of those cases. All of them gave birth vaginally. A total of 24 cases (28.23%) involved LSCS. These results agree with those of other research. [3,5]

The maternal death rate in the current study was 10.58%, which is comparable with findings from prior studies. [9,10] When it affects pregnant women, hepatitis E is reported to be the cause of highest mortality among all viral hepatitis. [3,9,10] In the current study, coagulopathy, ARF, ascites, pulmonary oedema, and hepatic encephalotasis were problems that 34.12% of pregnant women experienced. In the current study, live births comprised 61.1%, stillbirths were 28.24%, and abortions were 9.4%. 15.29% of live births were at term, 21.1% were preterm, and 24.70% had IUGR. Fresh stillbirth comprised 4.7% of all stillbirths, while macerated stillbirth comprised 23.53%. The term was 1.17%, preterm was 2.3%, and IUGR were 1.17% of all fresh stillbirths. Preterm births made up 48.05 percent of all deliveries, term births 22.08%, and IUGR 28.57%. NICU admissions as a whole were 28.57%. These findings agree with those of other research. [10,11,4,12]

Conclusion

The results of the current study suggest that although the indications and symptoms of liver disorders in pregnancy are nonspecific, the underlying condition may have major adverse effects on the health of the maternal and the foetus. Preeclampsia-related diseases are the most frequent cause of abnormal liver function tests, particularly in the third trimester of pregnancy.

For the diagnosis of a liver disorder, it is crucial to be vigilant and knowledgeable about recognising the signs and symptoms of liver disorders in pregnancy, such as preeclampsia, eclampsia,

Table 1 Demographic profile.

Demographic	Features	Number
Age	<20	13
	20-30	61
	31-40	11
ANC Care	Unbooked	59
	Booked	26
Trimester wise	<20	14
	20-28	19
	>28	52
Gravidity	Multi-gravida	32
	Primi–gravida	53

Table 2 Distribution of cases according to liver disorders.

Liver Disorder	Frequency
Viral Hepatitis (HEV=10, HBV=7, HAV=3)	20
Acute Fatty Liver of Pregnancy	2
Hyperemesis Gravidarum	1
Pre-eclapmsia	28
Eclampsia	10
Intrahepatic Cholestasis of Pregnancy	14
HELLP Syndrome	10

HELLP syndrome, intrahepatic cholestasis of pregnancy, acute fatty liver of pregnancy, hyperemesis gravidarum, and viral hepatitis, and then to correlate these results with the relative values of liver function tests in different liver disorders. Early diagnosis and fast treatment are essential for effective management of liver problems during pregnancy and for favourable maternal and foetal outcomes.

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Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study.

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