

ORIGINAL RESEARCH

Evaluation of effect of maternal liver disorder on fetal outcome

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Received: 13 December, 2020

Accepted: 03 January, 2021

ABSTRACT

Background: Liver diseases constitute a family of diseases in pregnancies that are less often studied individually. The study was conducted to assess effect of maternal liver disease on fetal outcome. **Material & Methods:** The present prospective study was conducted to assess effect of maternal liver disorder on fetal outcome. Thorough clinical assessment including detailed history and examination of these patients was done. The fetal outcomes were assessed. The data was collected from the medical record and statistical analysis was done using statistical software SPSS version 22. **Results:** The 1200 pregnancies were evaluated out of which 250 pregnant women had liver diseases. The prevalence was found to be 20.83%. Hypertensive disorders of pregnancy were the most common liver disease 124 (49.6%), followed by cholestasis 49 (19.6%). Prematurity was found in 30.8% newborn. Still birth was 12.8%. Early neonatal deaths occur in 11.6% and 20.8% newborns required NICU admission. **Conclusion:** The study concluded that the prevalence of liver disease was found to be 20.83%. Hypertensive disorders of pregnancy were the most common liver disease. Maximum newborns were born premature.

Keywords: Maternal liver disease, fetal outcome, liver dysfunction, newborn.

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INTRODUCTION

Liver as a vital organ plays important role for various metabolic changes during pregnancy. Pregnancy causes very few alterations in the results of standard liver tests. Findings such as elevated serum alkaline phosphatase levels, palmar erythema, and spider angiomas, which might suggest liver disease, are commonly found during normal pregnancy.¹ Pregnancy is a condition of metabolic and anatomic stress which alters mother physiology considerably. There are physiological and biochemical changes in liver functions which are needed to support the growing fetus. Any abnormal change needs to be differentiated from physiological change as liver dysfunction has adverse implications on the mother and fetus.² Liver involvement in pregnancy can be of 3 types i.e. liver disease as a consequence to pregnancy, liver disease coincidental to pregnancy and pregnancy in patients with pre-existing liver disease.³ Liver diseases which can be due to pregnancy as a consequence of changes in pregnancy include

intrahepatic cholestasis of pregnancy (ICP), acute fatty liver of pregnancy (AFLP) and, hemolysis, elevated liver enzymes and low platelets count (HELLP) syndrome. Apart from these, liver abnormalities are often encountered in patients with pre-eclampsia (PE) and hyperemesis gravidarum (HG). Coincidental or preexisting liver disease include acute and chronic viral hepatitis, cirrhosis of liver, vascular alterations such as Budd–Chiari syndrome (BCS), drug induced hepatotoxicity, autoimmune liver diseases, and metabolic disorders.⁴ These liver disorders in pregnancy may adversely affect maternal and fetal outcome. The study was conducted to assess effect of maternal liver disease on fetal outcome.

MATERIAL AND METHODS

The present prospective study was conducted to assess effect of maternal liver disorder on fetal outcome. Before the commencement of the study ethical clearance was taken from the ethical committee of the institute. Out of all the patients who attended antenatal

clinic, women with pre-existing liver disease or those suspected to have liver dysfunction on the basis of clinical and /or laboratory data were included. Thorough clinical assessment including detailed history and examination of these patients was done. These patients were then investigated and treated as per etiology. They were followed further throughout pregnancy. The fetal outcomes were assessed. The data was collected from the medical record and statistical analysis was done using statistical software SPSS version 22. P-value less than 0.05 was considered statically significant.

RESULTS

The 1200 pregnancies were evaluated out of which 250 pregnant women had liver diseases. The prevalence was found to be 20.83%. Hypertensive disorders of pregnancy were the most common liver disease 124 (49.6%), followed by cholestasis 49 (19.6%). Prematurity was found in 30.8% newborn. Still birth was 12.8%. Early neonatal death occur in 11.6% and 20.8% newborns required NICU admission.

Table 1: Spectrum of liver disease based on aetiology

Etiology of liver disease	n(%)
Hypertensive disorders of pregnancy	124(49.6%)
cholestasis	49(19.6%)
Hyperemesis gravidarum	15(6%)
Acute fatty liver of pregnancy	8(3.2%)
acute viral hepatitis	20(8%)
chronic liver disease	25(10%)
Others	9(3.6%)

Table 2: Fetal outcome in liver disease

Fetal outcome	n(%)
Prematurity	77(30.8%)
Still birth	32(12.8%)
Early neonatal death	29(11.6%)
Requirement of NICU admission	52(20.8%)
Mortality	60(21.42%)

DISCUSSION

The overall mortality attributed to liver disorders in pregnancy has dramatically decreased in the past few years because of better understanding of the physiologic changes that occur during pregnancy, early recognition of clinical and laboratory abnormalities that help in identifying the aetiology and its effective management in a timely manner. The incidence of liver disorder in pregnancy was reported in other prospective studies.^{3,5-7} The 1200 pregnancies were evaluated out of which 250 pregnant women had liver diseases. The prevalence was found to be 20.83%. Hypertensive disorders of pregnancy were the most common liver disease 124 (49.6%), followed by cholestasis 49 (19.6%). Prematurity was found in 30.8% newborn. Still birth was 12.8%. Early neonatal deaths occur in 11.6% and 20.8% newborns required NICU admission. Rathi U et al found that Liver disease was found in 107 (0.9%) of 12,061 pregnancies. Of these, fifty six (52.3%) had pregnancy-specific liver disorders (pregnancy-induced hypertension [PIH]-associated liver dysfunction 36--including HELLP syndrome 22 and pre-eclamptic liver dysfunction 14; intrahepatic cholestasis of pregnancy 10; hyperemesis gravidarum 7; acute fatty liver of pregnancy 3). Liver disorders

not specific to pregnancy included hepatitis E (16), hepatitis B, non A-E hepatitis and chronic liver disease (5 each) and others (14); in 6 patients no cause could be found. Ninety-six patients completed follow up. Overall maternal and perinatal mortality rates were 19.7% and 35.4%, respectively.³ In the study by Solanke *et al.*, viral hepatitis was the most common liver disease in pregnancy.⁸ In a study by Jain et al., they studied 55 patients in which the incidence of HELLP was 27.2%.⁹ In a study conducted by Patra et al, perinatal asphyxia was observed in 28% of cases.¹⁰

CONCLUSION

The study concluded that the prevalence of liver disease was found to be 20.83%. Hypertensive disorders of pregnancy were the most common liver disease. Maximum newborns were born premature.

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