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EFFECT OF LIVER DYSFUNCTION ON MATERNAL COMPLICATIONS DURING PREGNANCY

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ABSTRACT

Introduction: Pregnancy-related liver illnesses, the aggravation of pre-existing liver diseases, or coincidental hepatic disease can all cause liver dysfunction during pregnancy. Pregnancy-related liver dysfunction can be severe enough to significantly increase the morbidity and mortality rates for both mothers and newborns. **Methods:** A prospective study was conducted on all pregnant women with liver illness who used the tertiary care center's indoor or outdoor services provided by the Department of Obstetrics and Gynecology over the course of a year. Included were women who had a history of liver illness or who were suspected of having liver dysfunction based on clinical or investigative findings. Every patient gave their informed permission. **Results:** 40. cases suffered from PPH, 4% cases developed shock and 5% cases developed sepsis and 17% cases required ICU admission. Few patients had multiple complications. A total of 17 patients admitted in ICU for one or more causes enlisted in patients. 94.12% of patients had PPH, 41.18% of patients had shock, and 29.41% of patients had sepsis. Out of 100 patients, 89% recovered and 10% cases had prolonged ICU stay and 1 maternal death was noted. **Conclusion:** Early identification of hepatic impairment and rapid therapy improve outcomes for both the mother and the baby. Additionally, we can prolong pregnancy and avoid preterm birth in some liver illnesses such as cholestasis. Acute fatty liver during pregnancy is associated with high maternal mortality.

KEYWORDS : PPH, Liver disease, Maternal

INTRODUCTION

Liver dysfunction in pregnancy can be due to pregnancy related liver diseases or exacerbation of pre-existing liver disease or coincidental with pregnancy. Liver dysfunction in pregnancy can be severe enough to cause significant maternal and neonatal morbidity and mortality.[1] Pregnancy related liver disorders occur at a specific period of gestation, while non-pregnancy-related liver diseases can occur at any time.1 Globally the incidence of abnormal liver function tests (LFTs) in pregnant women is 3-5% similar to Indian studies which have also quoted the incidence of abnormal LFTs during pregnancy to be 6.7% and 3.3% in another Indian study.[2-4]

The timing of clinical manifestations and abnormal liver tests in pregnancy are considered before making a diagnosis and planning treatment strategies. Decisions must be made considering the maternal and fetal implications in mind, and rapid diagnosis followed by immediate delivery will determine maternal and fetal outcome in pregnancy.[5]

Complications of liver dysfunction in pregnancy can be because of liver derangement per se or because of the combined effect of pregnancy related morbidities with liver derangement. Cholestasis of pregnancy was associated with preterm labour and premature rupture of membrane (27.4%), meconium stained liquor(15.7%), fetal distress (13.7%), and postpartum haemorrhage (2%) in one study.[3] Disseminated intra vascular coagulation (33.3%) was the most common complication in patients of liver dysfunction associated with HELLP syndrome and pre-eclampsia according to one study.[4] Hepatitis E and acute fatty liver of pregnancy are associated with significant maternal and perinatal morbidity and mortality.[2] Other fatal complications of liver dysfunction include acute renal failure, hepatic encephalopathy, DIC, complications of blood and blood products, ICU admission and maternal death.[2] Hence this prospective study was an attempt to determine the association between thyroid hormones and prolactin among women with AUB.

METHODS

All pregnant women with liver disease attending the indoor or outdoor services of the Department of Obstetrics and Gynaecology of the tertiary care centre during the period of one year was studied prospectively. Women with pre-existing liver disease or those suspected to have liver dysfunction based on clinical or investigative data were included. Informed consent was obtained from all the patients.

They were subjected to a detailed clinical history, physical and obstetric examination. Apart from routine antenatal investigations, specific tests like liver function tests, viral markers, total bile acids, renal function tests, coagulation profile and abdominal ultrasound scan etc. were done to identify the etiology of liver disorders.

Various causes of liver disorders, maternal outcomes were noted, and data were analyzed. The patients were jointly managed by a team of gynecologists, gastroenterologist, and intensivist.

Data were presented as mean, standard deviation, frequency, and percentages.

RESULTS

Baseline Characteristics

In this study, a total of 100 patients were included. The mean age of the patients was 28.87±4.8 years. Most of the patients aged 26-20 years (48%) followed by 21-25 years (26%). Only two patients had age more than 40 years. only 15% of the women had significant past history. The most common past history includes pregnancy-induced hypertension (7%) followed by hypothyroidism (5%), hepatitis (2%), and one woman had hyperemesis in previous pregnancy. We observed that 91% of the women had liver disorders peculiar to pregnancy while 7% of the women had liver diseases which were coincidental to pregnancy while 2 women had preexisting liver disease. Our study observed that 2 women had chronic hepatitis. Five percent of the women had hepatitis B and 2% had chronic hepatitis C infection. Forty percent of the women had preeclampsia, 26% had cholestasis, and 2% had acute liver failure (Table 1).

Maternal Complications

In our study, 40. cases suffered from PPH, 4% cases developed shock and 5% cases developed sepsis and 17% cases required ICU admission. Few patients had multiple complications (Table 2).

Cause of Maternal ICU admission

In our study, a total of 17 patients admitted in ICU for one or more causes enlisted in patients. 94.12% of patients had PPH, 41.18% of patients had shock, and 29.41% of patients had sepsis (Table 3).

Outcome

In our study, out of 100 patients, 89% recovered and 10% cases had prolonged ICU stay and 1 maternal death was noted (Table 4).

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.

A total of 100 patients were included. The mean age of the patients was 28.87±4.8 years. Most of the patients aged 26-20 years (48%) followed by 21-25 years (26%). Only two patients had age more than 40 years. only 15% of the women had significant past history. The most common past history includes pregnancy-induced hypertension (7%) followed by hypothyroidism (5%), hepatitis (2%), and one woman had hyperemesis in previous pregnancy.

We observed that 91% of the women had liver disorders peculiar to pregnancy while 7% of the women had liver diseases which were coincidental to pregnancy while 2 women had preexisting liver disease. In a study by **Tiwari et al,** most of the patients belonged to younger age group (20-29 years).[6] The age profile of present study was comparable with other studies.[7,8] Among pregnancy peculiar liver disease, preeclampsia was the commonest abnormality (40%). Other studies also showed similar result.[6] Whereas in prospective study done by **Krishnamoorthy et al and Sharma et al**, viral hepatitis was the most common cause of liver disease.[8,9]

40. cases suffered from PPH, 4% cases developed shock and 5% cases developed sepsis and 17% cases required ICU admission. Few patients had multiple complications. In our study, a total of 17 patients admitted in ICU for one or more causes enlisted in patients. 94.12% of patients had PPH, 41.18% of patients had shock, and 29.41% of patients had sepsis. In a study by **Singh et al** [62] reported documented morbidity in 34.12% mothers.[10] In a study by **Aparajita S et** al reported PPH in only one out of 51 mothers suffering from liver disease of pregnancy.[4]

Out of 100 patients, 89% recovered and 10% cases had prolonged ICU stay and 1 maternal death was noted. In a study by **Suresh et al** reported 2.5% mortality similar to our study.[11]in a study by **Jain M et al reported** documented high maternal (14.5%) mortality.[12]

CONCLUSION

The result for the mother and the newborn is improved by early detection of hepatic impairment and subsequent prompt therapy. Additionally, in a few liver diseases like cholestasis, we can extend pregnancy and prevent preterm. High maternal mortality is linked to acute fatty liver in pregnancy.

Table 1: Baseline Characteristics

Baseline Characteristics	Frequency (n=100)	Percentage (%)
Age group (Years)	Frequency	Percentage
21-25	26	26%
26-30	48	48%
31-35	18	18%
36-40	6	6%
>40	2	2%
Pattern of liver disorders	Frequency	Percentage
Cholestasis	26	26%
Preeclampsia	40	40%
Preeclampsia +Cholestasis	18	18%
HELLP	5	5%
Hyperemesis Gravidarum	4	4%
Acute Fatty Liver	2	2%
HBsAg	5	5%
HCV	2	2%
Chronic Hepatitis	2	2%
Past History		
Hypothyroidism	5	5
PH in previous pregnancy	7	7
Preeclempsia	0	0
Hepatitis	2	2
Hyperemesis in previous pregnancy	1	1
No	85	85

Table 2: Maternal Complications

Maternal Complications	Frequency (n=100)	Percentage (%)
Postpartum haemorrhage(PPH)	40	40%
Shock	4	4%
Sepsis	5	5%
ICU admission	17	17%
Maternal death	2	2%
Multiple complication	32	32%

Table 3: Cause of Maternal ICU admission

Cause of Maternal ICU admission	Frequency (n=17)	Percentage (%)
Postpartum haemorrhage(PPH)	16	94.12%
Shock	7	41.18%
Sepsis	5	29.41%

Table 4: outcome

Outcome	Frequency (n=100)	Percentage (%)
Recover	89	89%
Death	1	1%
Recovery after prolonged ICU stay	10	10%

REFERENCES

1. Ahmed KT, Almashhrawi AA, Rahman RN, Hammoud GM, Ibdah JA. Liver diseases in pregnancy: diseases unique to pregnancy. *World J Gastroenterol*. 2013;19(43):7639-7646. doi:10.3748/wjg.v19.i43.7639
2. Tran TT, Ahn J, Reau NS. ACG Clinical Guideline: Liver Disease and Pregnancy. *Am J Gastroenterol*. 2016;111(2):176-194; quiz 196. doi:10.1038/ajg.2015.430
3. K SP, Kurian S. Study of abnormal liver function tests in pregnancy in a tertiary centre in North Kerala. *Int J Res Med Sci*. 2017;5(12):5193-5196. doi:10. 18203/2320-6012.ijrms20175118
4. Dsouza AS, Gupta G, Sandeep SG, Katumalla FS, Goyal S. Maternal and fetal outcome in liver diseases of pregnancy - A tertiary hospital experience. 2015;5(9).
5. García-Romero CS, Guzman C, Cervantes A, Cerbón M. Liver disease in pregnancy: Medical aspects and their implications for mother and child. *Ann Hepatol*. 2019;18(4):553-562. doi:10.1016/j.aohep.2019.04.009
6. Tiwari A, Aditya V, Srivastava R, Gupta G. A study of spectrum and outcome of liver diseases in pregnant women at BRD medical college. *Int J Reprod Contracept Obstet Gynecol*. 2017;6(8):3641-3645. doi:10.18203/2320-1770.ijrcog20173501
7. Karegoudar D, Dhirubhai P, Dhital M, Kapil Amgain D. A study of liver disorder and its consequences in pregnant women with jaundice in tertiary care centre in Belgaum, Karnataka, India. *IOSR J Dent Med Sci IOSR-JDMS*. 2014;13:84-86. doi:10.9790/0853-13511418
8. Krishnamoorthy J, Murugesan A. Jaundice during pregnancy: maternal and fetal outcome. *Int J Reprod Contracept Obstet Gynecol*. 2016;5(8):2541-2545. doi:10.18203/2320-1770.ijrcog20162224
9. Sharma S, Aherwar R, Jawade S. Maternal and fetal outcome in jaundice complicating pregnancy: a prospective study. *Int J Reprod Contracept Obstet Gynecol*. 2016;5(4):1084-1087. doi:10.18203/2320-1770.ijrcog20160862
10. Mikolasevic I, Filipec-Kanizaj T, Jakopcic I, et al. Liver Disease During Pregnancy: A Challenging Clinical Issue. *Med Sci Monit Int Med J Exp Clin Res*. 2018;24:4080-4090. doi:10.12659/MSM.907723
11. Suresh I, TR V, HP N. Predictors of Fetal and Maternal Outcome in the Crucible

of Hepatic Dysfunction During Pregnancy. *Gastroenterol Res*. 2017;10(1):21-27. doi:10.14740/gr787w

12. Jain M, Thaker H. A study of fetomaternal outcome of hepatic disorders in pregnancy. *Int J Reprod Contracept Obstet Gynecol*. 2019;8(3):1182-1185. doi: 10.18203/2320-1770.ijrcog20190902