

RESEARCH ARTICLE

PATTERN OF LIVER DYSFUNCTION AMONG ANTENATAL WOMEN ATTENDING OPD OF A TERTIARY CARE CENTER

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Key words:-

Acute Fatty Liver of Pregnancy (AFLP), DIC (Disseminated Intravascular Coagulation), HELLP (Hemolysis, Elevated Liver Enzymes and Low Platelet count), ICU (Intensive Care Unit), Intrahepatic Cholestasis of Pregnancy (IHCP), Liver Disorders

Abstract

Background: Liver disorders in pregnancy encompass a spectrum of diseases encountered during antenatal and postnatal period resulting in abnormal liver function tests and hepatobiliary dysfunction or both. This study is aimed at determining the pattern of liver disorders during pregnancy.

Methods:One hundred patients with liver disorders during pregnancy during the period of one year were included. Data was recorded in Excel workbook and analyzed.

Results: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. The most common antepartum complication was gestational hypertension and pre-eclampsia (34% followed by IUGR (17%).

Conclusions:Liver disease has deleterious effect on pregnancy outcome with increased maternal and foetal morbidity and mortality. Timely diagnosis by proper antenatal check-up, early interventions and intensive monitoring of both mother and fetus with the teamwork of obstetrician, physician, gastroenterologist, and anaesthetist can prevent and reduce feto-maternal morbidity and mortality.

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Introduction:-

Pregnancy may be compared to a typical clinical setting in which the body experiences a variety of physiological changes that have an impact on the liver in addition to other organs. Liver disorders in pregnancy encompass a spectrum of diseases encountered during antenatal and postnatal period resulting in abnormal liver function tests and hepatobiliary dysfunction or both. Incidence of liver disorders has been reported to be 3-5 % worldwide.¹ The basic metabolic, synthesis, and excretory activities of the liver during pregnancy are impacted by high amounts of estrogen and progesterone in the blood. Because of different hormonal, hemodynamic, and immunological changes during pregnancy.²

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Corresponding Author:- Dr. Mahak Rathore Address:- Senior Resident, Department of Obstetrics and Gynaecology, Dr. SS Tantia Medical College and Hospital, Sri Ganganagar, Rajasthan. Liver disorders in pregnancy include liver diseases peculiar to pregnancy (cholestasis, AFLP, pre-eclampsia, HELLP), liver diseases coincidental to pregnancy (acute viral hepatitis), and pregnancy in patients with preexisting liver disease (chronic hepatitis, cirrhosis, esophageal varices).³

Though appears to be affecting a small percentage, the impact on maternal and fetal health takes a major toll on antenatal patients and health care system. Hence, we undertook this study at a tertiary level referral centre.

Methods:-

All pregnant women with liver disease attending the indoor or outdoor services of the Department of Obstetrics and Gynaecology of the tertiary care centreduring the period of one year was studied prospectively. Women with preexisting 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 and fetal 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:-

Age distribution

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 (Table 1).

Obstetric history

In this study, 67% of the women were multigravida while remaining 33% of the women were primigravida.

Past history

In our study, 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 (Figure 1).

Gestational age at the time of diagnosis

In our study, 66% of women were diagnosed with liver diseases at the gestational age of 13-28 weeks while only 2% had pre-gestational hepatitis (Figure 2).

Type of liver disorders

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 2).

Mode of delivery

In our study, 80% of the women underwent normal vaginal delivery while remaining women underwent cesarean section.

Bilirubin levels

In this study, 53% of the women had serum bilirubin 1.2 mg/dl while only 2% had more than 15 mg/dl (Table 3).

Antepartum complications

In this study, the most common antepartum complication was gestational hypertension and pre-eclampsia (34% followed by IUGR (17%) (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. The overall incidence of liver disorder in pregnancy in our institution was 2.17%. Similar incidence was reported in other prospective studies.⁴Other studies revealed lesser percentage of pregnant women with liver dysfunction.⁵⁻⁷

In present study, most of the women (74%) belonged to age group 21-30 years. In a study by Tiwari et al, most of the patients belonged to younger age group (20-29 years).⁸ The age profile of present study was comparable with other studies.^{5,9}

The reported proportion of pregnancy-specific liver diseases among affected patients varied from 67% to 89% in previous studies.¹⁰⁻¹² In present study, 91% of affected patients had pregnancy-specific liver disease. This is similar to the finding of 86% in study by Tiwari et al.⁸

Among pregnancy peculiar liver disease, preeclampsia was the commonest abnormality (40%). Other studies also showed similar result.⁸ Whereas in prospective study done by Krishnamoorthy et al and Sharma et al, viral hepatitis was the most common cause of liver disease.^{9,13}

In our study, gestational hypertension and preclampsia developed in 34% of the women followed by IUGR (17%). Only 5% developed HELLP. In the study by Tiwari et al, HELLP syndrome developed in 15.62% of patients. In which 28 out of 30 were in women with hypertensive disorders of pregnancy and 2 in women with AFLP.⁸ **Table 1:-** Age distribution.

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 +	18	18%
Cholestasis		
HELLP	5	5%
Hyperemesis Gravidarum	4	4%
Acute Fatty Liver	2	2%
HBsAg	5	5%
HCV	2	2%
Chronic Hepatitis	2	2%

Table 2:- Pattern of liver disorders.

Table 3:- Bilirubin levels.

Bilirubin levels	Frequency	Percentage
1.2 mg/dl	53	53%
1.2-3	19	19%
>3-6	9	9%
>6-10	10	10%
>10-15	7	7%
>15	2	2%

Table 4:- Antepartum complications.

	Frequency	Percentage
Gestational hypertension and preeclampsia	34	34%
HELLP	5	5%
Antepartum hemorrhage (APH)	3	3%
IUGR	17	17%
Others (renal/coagulopathy/DIC)	3	3%



Figure 1:- Past medical history.





Conclusion:-

Liver disorders during pregnancy are uncommon but potentially dangerous. Timely diagnosis and a good intensive management protocol can prevent mortality and save lives.

References:-

- 1. Jain RK. Management of jaundice in pregnancy. Medicine Update. 2010;20:470-6.
- 2. Satia MN, Jandhyala M. A study of fetomaternal outcomes in cases of jaundice at a tertiary care centre. Int J ReprodContracepObstet Gynecol. 2016; 5(7):2352-57.
- 3. Pan C, Perumalswami PV. Pregnancy-related liver diseases. Clin Liver Dis. 2011;15(1):199-208.
- 4. Sharma S, Aherwar R, Jawade S. Maternal and fetal outcome in jaundice complicating pregnancy: a prospective study. Internat J Reproduct Contracept Obstetr Gynecol. 2016;5(4):1084-7.
- 5. Karegoudar D, Dhirubhai PR, Dhital M, Amgain K. A study of liver disorder and its consequences in pregnant women with jaundice in tertiary care centre in Belgaum, Karnataka, India. Mortality. 2014;28:75-68.
- 6. Acharya N, Acharya S, Shukla S, Athvale R, Shaveta. Study of Jaundice in Pregnancy. Glb J of Med research. 2013;13:25-9.
- 7. Oladokun A, Otegbayo JA, Adeniyi AA. Maternal and fetal outcomes of jaundice in regnancy at the University College Hospital, Ibadan. Niger J Clin Pract. 2009;12(3):277-80.
- 8. 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 ObstetGynecol2017;6:3641-5.
- 9. Krishnamoorthy J, Murugesan A: Jaundice during pregnancy: maternal and fetal outcome. International Journal of Reproduction, Contraception, Obstetrics and Gynecology Krishnamoorthy J et al. Int J Reprod Contracept Obstet Gynecol. 2016;5(8):2541-5.
- 10. Wong HY, Tan JYL, Lim CC. Abnormal liver function tests in the symptomatic pregnant patient: the local experience in Singapore. Ann Acad Med Singapore. 2004;33:204-8.
- 11. Tank PD, Nandanwar YS, Mayadeo NM. Outcome of pregnancy with severe liver disease. Int J Gynecol Obstet. 2002;76:27-31.
- 12. Harish K, Nitha R, Harikumar R. Prospective evaluation of abnormal liver function tests in pregnancy. Trop Gastroenterol. 2005;26:188-93.
- 13. Sharma S, Aherwar R, Jawade S. Maternal and fetal outcome in jaundice complicating pregnancy: a prospective study. Internat J Reproduct Contracept Obstetr Gynecol. 2016;5(4):1084-7.