Section: Obstetrics and Gynaecology

Original Research Article

JAUNDICE IN PREGNANCY- A STUDY OF FETOMATERNAL OUTCOMES IN TERTIARY CARE HOSPITAL- GUNTUR MEDICAL COLLEGE

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ABSTRACT

Background: Aim and objective: To study the fetomaternal outcomes of various causes of jaundice in pregnancy.

Materials and Methods: Prospective observational study- conducted in Department of OBSTETRICS and GYNAECOLOGY, GUNTUR MEDICAL COLLEGE, from SEPTEMBER 2022 to SEPTEMBER 2024, a total of 2 years period. Informed consent was taken. Detailed history, demographic data recorded, physical examination and necessary investigations were done.

Results: The incidence of jaundice in our study was 0.34%. Out of 55 cases of jaundice complicating pregnancy 47 were treated and discharged in healthy condition. There were 8 cases of maternal mortality. The causes of maternal mortality were viral hepatitis leading to fulminant hepatitis in 3 cases, HELLP syndrome complicated by DIC in 3 cases, AFLP in 1 case and acute kidney injury in 1 case. Two pregnancies resulted in abortion, 15 cases had stillbirth, 18 cases had preterm delivery and there were 10 neonatal deaths within 1 week of delivery. The total perinatal mortality of 25 cases.

Conclusion: The causes of jaundice in pregnancy were often complex and clinically challenging. A team approach with consultation and referrals to gastroenterologist, general physician and radiologist helps optimise the management. Jaundice in pregnancy is best handled at tertiary hospital with requisite experience and expertise.

Keywords: Obstetricians, gastroenterologists, Pregnancy.

INTRODUCTION

Obstetricians, gastroenterologists, general physicians, radiologists should be familiar with disorders causing jaundice in pregnancy, and how these conditions affect and are affected by pregnancy. The conditions which cause jaundice in pregnancy can be both pregnancy specific and conditions unrelated to pregnancy.

Conditions specific to pregnancy are hyperemesis gravidarum, intrahepatic cholestasis of pregnancy, HELLP syndrome, acute fatty liver of pregnancy. Conditions unrelated to pregnancy include acute disorders coincidental to pregnancy such as viral hepatitis, chronic liver disease, haemolytic anaemia etc.

Intrahepatic cholestasis of pregnancy is the most common cause for jaundice in pregnancy which is pregnancy specific. Among conditions unrelated to pregnancy, viral hepatitis is the most common cause of jaundice in pregnancy.

Aim and Objectives: To study the fetomaternal outcomes of various causes of jaundice in pregnancy.

MATERIALS AND METHODS

Study design: Prospective observational study

Place of study: The study was conducted in the Department of obstetrics and gynaecology, Guntur medical college, Guntur, Andhra Pradesh, India.

Study period: From September 2022- September 2024 i.e, 2 years.

Inclusion Criteria: All the pregnant patients with elevated bilirubin levels and abnormal liver function tests.

Exclusion Criteria: All the pregnant patients with normal liver function tests were excluded.

Methodology: After assessment with regard to the inclusion and exclusion criteria, informed consent was obtained from the patients participating in the study. A detailed history was taken, socio-demographic data collected. A thorough physical assessment was done, the investigations ordered include complete blood picture, random blood glucose, renal function tests, liver function tests, coagulation profile, serology for Hepatitis A, C, B, E, ultrasound abdomen and ultrasound gravid uterus. The aetiology, clinical course, complications, maternal morbidity and mortality and fetal outcomes are documented, data analysed and compared to similar studies.

Statistical Analysis: Data collected was entered in Microsoft excel and was analysed using statistical package for social sciences.

RESULTS

The results of the study were as follows. The total number of deliveries in study period were 16501. Total number of cases of jaundice complicating pregnancy were 55. Thus the incidence of jaundice complicating pregnancy was 0.34%.

Demographic Data:(Table 1)

55 cases are studied, majority of them belong to the age group of 21-25yrs- 50.9%, 12.7% belong to age group 18-20yrs, 18% each in age group 26-30yrs and 31-35yrs. 58.18% reside in rural areas, 30.9% in semiurban dwellings, 10.9% in urban areas. 74.54% belong to lower socioeconomic class, whereas 16.36% belong to upper lower class and 9.09% belong to lower middle socioeconomic class.

Out of 55 cases, 41 cases were referrals from the primary health care centres and district hospitals which accounts to 74.54% of all cases. Out of 55 cases, 35 cases were booked cases, which accounts to 63.63%.

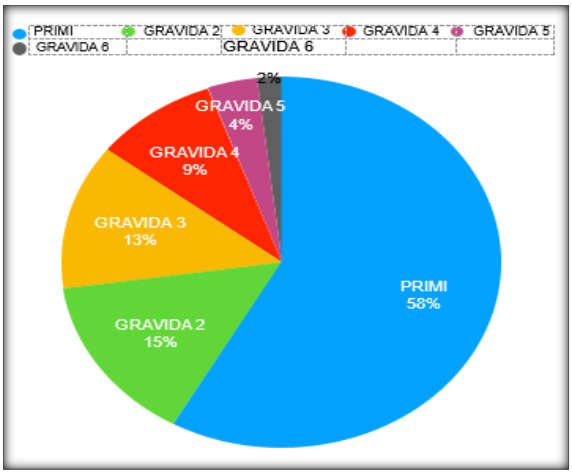

Figure 1: Parity Distribution

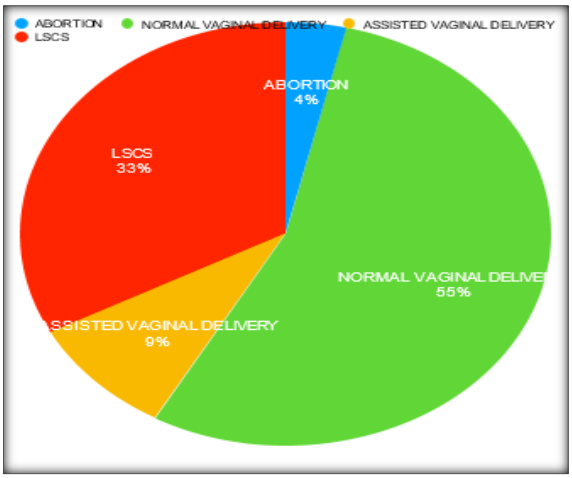

Figure 2: Outcomes of Pregnancy

Table 1: Sociodemographic Data

	No. of cases	Percentage
AGE		
18-20 yrs	7	12.7%
21-25 yrs	28	50.9%
26-30 yrs	10	18.18%
31-35 yrs	10	18.18%
Residence		
Rural	32	58.18%
Semi urban	17	30.9%
Urban	6	10.9%
Socioeconomic status		
Lower class	41	74.54%
Upper lower class	9	16.36%
Lower middle class	5	9.09%

Distribution According to Parity and Trimester: (Figure 1 And Table 2)

58% (32 cases) were primigravida, 14.5%(8) were second gravida, and 17.27%(15) were multigravida.

Most cases are diagnosed in 3rd trimester -80%, 10.9% are diagnosed in 2nd trimester and 9.09% in 1st trimester.

Table 2: Trimester wise Distribution

	No. of cases	Percentage
FIRST TRIMESTER	05	9.09%
SECOND TRIMESTER	06	10.9%
THIRD TRIMESTER	44	80%

Aetiology of Jaundice (TABLE 3)

HELLP syndrome was the most common cause of jaundice in pregnancy with 27.27% of cases, followed by viral hepatitis in 18.18% of cases and ICP in 18.18% of cases, haemolytic anaemia in 7.27% of cases, AFLP in 7.27% of cases.

The total bilirubin was elevated - < 5 mg/dl in 47.27% of cases, 5-10 mg/dl in 36.36% of cases, 11-15mg/dl in 10.9% of cases, >15mg/dl in 5.45% of cases. Elevated liver enzymes were present in 52.72% of cases, altered coagulation profile were present in 9.09% of cases.

Table 3: Aetiology of Jaundice in Pregnancy

	No. of cases	Percentage
HELLP SYNDROME	15	27.27%
AFLP(Acute fatty liver of pregnancy)	04	07.27%
ICP (Intrahepatic cholestasis of pregnancy)	10	18.18%
Hyperemesis gravidarum	03	05.45%
Haemolytic anemia	04	07.27%
Viral hepatitis	10	18.18%
Leptospirosis	01	01.81%
No definitive diagnosis attained	08	14.54%

MATERNAL COMPLICATIONS AND OUTCOMES (TABLE 4 & FIGURE 1):

54.54% of cases had normal vaginal delivery, 9.09% cases had assisted vaginal delivery, 32.72% cases had LSCS and 3.64% of cases had abortion.

21.81 % of all deliveries had postpartum hemorrhage as complication. Other complications include abruption in 4 cases (7.27%), DIC in 5 cases (9.09%), hepatic encephalopathy in 6 cases (10.9%), acute kidney injury in 4 cases (9.09%). There were 8 cases of maternal death in this study. The causes of maternal mortality were viral hepatitis leading in fulminant hepatitis in 3 cases, HELLP syndrome complicated by DIC in 3 cases, AFLP in 1 case and acute kidney injury in 1 case.

Table 4: Maternal Complications

	NO. OF CASES	PERCENTAGE
POSTPARTUM HEMORRHAGE	12	21.81%
ABRUPTION	04	07.27%
DIC	05	09.09%
HEPATIC ENCEPHALOPATHY	06	10.09%
ACUTE KIDNEY INJURY	04	07.27%
MORTALITY	08	14.55%

Neonatal Outcomes (Table 5)

69.09% of cases had live birth (38), 27.27% of cases had stillbirth (15), 18.18% of cases had neonatal death within a week of delivery majority of which were preterm deliveries (10). NICU admissions were needed in 36.36% of cases. 27.27% of cases had birth weight < 2kg (15), 34.55% had birth weight between 2- 2.5 kg, 18.18% had birthweight between 2.5- 3kg and 16.36% had birth weight > 3kg.

Table 5: Neonatal Outcomes

	NO. OF CASES	PERCENTAGE
GESTATIONAL AGE AT DELIVERY		
PRETERM	18	32.72%
TERM	35	63.64%

OUTCOME		
ABORTION	02	03.64%
STILLBIRTH	15	27.27%
LIVE BIRTH	38	69.09%
NEONATAL DEATH	10	18.18%
BIRTH WEIGHT		
< 2 Kg	15	27.27%
2-2.5 kg	19	34.55%
2.6-3kg	10	18.18%
> 3kg	09	16.36%
NICU ADMISSION		
YES	20	36.36%
NO	18	32.72%

DISCUSSIONS

Pregnancy associated liver disease causing jaundice is rare but recognition is important because it has potential to affect maternal and fetal morbidity and mortality.[1]

Pregnancy affects liver function tests. Albumin decreases, alkaline phosphotase, bile acids and cholesterol, triglycerides increases.[2] Abdominal assessment is modified in pregnancy, liver is pushed up by gravid uterus.[3] The common clinical signs and symptoms are jaundice, right upper quadrant abdominal pain, nausea, vomiting, pruritis ,ascites etc.[4]

Intrahepatic cholestasis of pregnancy is most common cause of jaundice in pregnancy which is pregnancy specific.[5] Diagnosed by measuring serum bile acids.[6] Acute viral hepatitis is most common cause of jaundice in pregnancy which is coincidental to pregnancy.[7] Hepatitis E is transmitted through feco-oral route. Hepatitis E is complicated by hepatic failure in as many as 60% of cases and there is 30% risk of maternal mortality due to fulminant hepatitis.[8]

The incidence of jaundice complicating pregnancy in this study was 0.34%. In a study in 2020, Sathyavarathan Nair Vinayachandran et al the incidence was 0.22%,[9] where as the incidence was 1.7% in the study conducted by Richa Tiwari et al,[10] where as incidence was 1 in 278 cases in study by Afshaan Ambreen et al in 2015.[11]

As for the aetiology of jaundice in pregnancy, HELLP syndrome was the commonest cause in this study with 27.27% of cases,[15] followed by intrahepatic cholestasis of pregnancy and viral hepatitis,[12] each with 18.18% of cases,[10] followed by AFLP and haemolytic anemia in 7.27% of cases.[4] There were 3 cases of hyperemesis gravidarum with jaundice and 1 case of leptospirosis. In study in 2018, Syed Masuma Rizvi et al,[13] ICP was found in 70% of cases, viral hepatitis in 18% of cases and HELLP syndrome in 7% of cases. However in 2022, in a study by Hrishikesh Joshi et al,[14] HELLP syndrome was the most common cause with 44% of cases, followed by AFLP in 32% of cases, ICP in 28% of cases and hyperemesis gravidarum in 12% of cases.

Most common complications seen in this study were - postpartum hemorrhage seen in 21.81% of cases, hepatic encephalopathy in 10.9% of cases, DIC in 9.09% of cases. Maternal mortality was seen in 8 cases. In 2018, study by Pradnya Changede et al,[15] DIC was seen in 12 cases (28%), postpartum hemorrhage in 6 cases (14%), hepatic encephalopathy in 5 cases (11.5%), 17 cases of maternal mortality were seen.

In this study there were 32.27% preterm deliveries and 27.27% still births and 18.18% neonatal deaths.[16] In study by Syed Masuma Rizvi et al 64% were term deliveries, 20% preterm deliveries and 3% intrauterine death. In the study by Hrishikesh Joshi et al there were 45% preterm deliveries and 12% neonatal deaths.

CONCLUSION

Pregnancy related liver diseases affects approximately 3% of pregnancies and can be fatal. Timely recognition and diagnosis are essential in order to institute appropriate management strategies. The patient history, physical examination, laboratory data, ultrasound examination will usually provide the diagnosis. Maternal and fetal survival have recently improved with enhanced diagnostic technology, better maternal and fetal monitoring, earlier diagnosis and multidisciplinary approach of management.

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