RESEARCH
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MATERNAL AND FETAL OUTCOME IN PREGNANCY WITH JAUNDICE

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ABSTRACT
Introduction: Jaundice in pregnancy is an essential medical issue encountered more commonly in underdeveloped nations than in industrialized countries. Pregnancy- specific conditions include acute fatty liver, recurrent cholestatic jaundice, and jaundice exacerbating pregnancy-related toxemia.
Aim: To evaluate the effects of jaundice on a pregnant patient's fetal and maternal outcomes in a tertiary care hospital. To review the findings and clinical manifestations for this patient.
Methods: The Prospective observational clinical study was conducted in Bankura Sammilani Medical College and Hospital, Obstetrics and gynaecology department, Bankura, West Bengal. All Antenatal women with jaundice complicating pregnancy cases during 18 months period were studied. Different parameters including age, parity, and gestational age, mode of delivery, maternal complications, and perinatal outcome in terms of birth weight, perinatal morbidity and mortality were studied.
Results: In our study, 62(86.7%) patients were delivered patients and 6(13.3%) patients were undelivered patients. The value of z is 9.6039. The value of p is <.00001. The result is significant at p < 0.05 In our study, 13(20.9%) patients had Preterm deliveries, 47(69.1%) patients had Term delivery, and 2 (3.2%) patients had abortion. The value of z is 8.266. The value of p is <.00001. The result is significant at p <.05. In above table showed that the mean HR (bpm) (mean±s.d.) of patients was 82.3± 6.4. In above table showed that the mean SBP (mm of Hg) (mean±s.d.) of patients was 122±15.7.
Conclusion: Pregnancy complications caused by jaundice have a substantial impact on both the mother's and the fetus's outcomes and are linked to higher rates of maternal death and morbidity in underdeveloped nations like India. Since there are many cases of jaundice and abnormal liver function tests during pregnancy, which negatively affect fetomaternal outcome, it becomes necessary to raise awareness about the significance of regular antenatal care, health education, early diagnosis, and appropriate timely treatment to ameliorate many cases and to bring out a satisfactory mother and fetal outcome.
Keywords: Jaundice complicating pregnancy, maternal outcome and fetal outcome.

INTRODUCTION

Pregnancy-related jaundice is a significant medical condition that is more common in developing than in industrialized nations.It might be particular to the pregnancy viz.acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy and jaundice aggravating toxaemia of pregnancy. In India, the frequency of jaundice varies between 0.4 and 0.9 per 1000 births. 10% of maternal fatalities during pregnancy are related to jaundice, which has a serious prognosis for both the mother and the fetus. [1] The current study examines the etiology of jaundice-affected pregnancies as well as the fetomaternal outcome. Because there are several possible reasons, abnormal liver test findings occur in 3% to 5% of pregnancies. The clinical effects might range from swiftly lethal to self-limiting.

postpartum hemorrhage, renal failure, encephalopathy, and diffused intravascular coagulation.[2] Serum bilirubin levels that are too high have a vasoconstrictive impact on placental arteries as well as a cardiotoxic effect that can induce intrauterine mortality and fetal asphyxia. Furthermore, increased bilirubin has a biological impact that causes premature labor by increasing uterine contractility and sensitizing the myometrium to oxytocin. Many factors, including poor hygiene, inadequate sanitation, malnutrition, the prevalence of anemia, delaying seeking medical assistance, a lack of knowledge, and delaying referral to higher facilities, contribute to the high rates of maternal death and morbidity in our

nation. Raising public awareness, providing hygienic conditions, securing clean drinking water, immunizing against viral hepatitis, enhancing prenatal care for early identification, and building hospitals with enough critical care resources can all help lower the frequency of viral hepatitis in pregnancy. This can reduce the mortality and morbidity of jaundice, which can complicate pregnancy. The purpose of this research is to track clinical presentations and investigations in order to ascertain the outcomes for both the mother and the fetus in pregnant patients treated at Bankura Sammilani Medical College and Hospital who www have jaundice.

Liver diseases during pregnancy presents a distinctive clinical challenge for gynaecologist and hepatologist as they are poorly studied and may lead to materno-fetal complications.[3] The prevalence of liver dysfunction during pregnancies ranges between 3-10%. [4] Jaundice, also referred as hyperbilirubinemia, is presented by accumulation of bile pigments in the skin that results in yellowing mucous membranes and the skin. [5] Jaundice in pregnancy may lead to adverse materno-fetal outcomes including perinatal and maternal mortality which accounts for around 60% and 14% respectively. [6] However, it is caused by a number of causes, some related and some coincidental including abnormal liver functioning distinctive to pregnancy, pre- hepatic causes, hepatic causes and post-hepatic causes of jaundice. The aim to evaluate the effects of jaundice on a pregnant patient's fetal and maternal outcomes in a tertiary care hospital. To review the findings and clinical manifestations for this patient.

MATERIALS AND METHODS

Sixty eight women with jaundice complicating pregnancy admitted and treated at Bankura Sammilani Medical College and Hospital, Bankura for a period of 18 months were studied.

Data collection for recruitment of an eligible patient in the study. Informed consent taken.

A detailed history including patient's age, socioeconomic status, booking, and details of menstrual history to arrive at the expected date of delivery was obtained.

Patients were enquired in detail about their complaints and duration like nausea, vomiting, pruritus, anorexia, yellow coloured urine and schlera, pale stools, edema legs, bleeding tendency, joint pain, fever and others.

Past history of jaundice especially in previous pregnancy and history of blood transfusion were elicited.

Systemic and obstetric examinations were carried out.

Investigations included liver function tests, serum billirubin, SGOT, SGPT, Viral markers, prothrombin time (PT), partial thromboplastin time (PTT), bleeding time (BT), clotting time (CT), platelet count and ultrasound abdomen were carried out as and when required.

HIV screening was done in all patients.

Medical gastroenterologist opinion was obtained for all cases.

Labour was closely monitored. Jaundice perse was not an indication for cesarean section. Vaginal delivery with close monitoring was preferred and cesarean sections were done only for obstetric indication. After cross matching fresh blood was kept ready as alteration in coagulation profile was expected in jaundice complicating pregnancy.

Atonicity was managed with oxytocin drip, injection methergin and injection15 methyl PGF2a.

Patients were kept in the labour ward for close observation. Clotting time was repeated hourly if it was prolonged till it becomes normal.

Soon after delivery all babies were assessed by paediatrician. Alive or dead, sex, gestational age at birth weight, apgar score and presence or absence of any congenital anomalies were looked for and noted. As per paediatrician opinion sick babies were admitted in preterm ward for intensive care.

Of the 68 women, 28 had viral hepatitis, 2 AFLP, 18 HELLP, 1 1 cholestatic, 5 HELLP with severe pre eclampsia, 1 HELLP with pre eclampsia, 1 HELLP with acute kidney injury, 2 HELLP with viral infection, 3 Hyperemesis gravidarum.

The maternal outcome was noted in terms of the mode of delivery, maternal complications and maternal mortality. The relation of maternal morbidity and mortality to the admission serum bilirubin level was analyzed.

Fetal outcome was assessed by perinatal morbidity and mortality.

RESULT

Table 1: Distribution of Pregnancy Outcome

	Total	Percentage
Delivered	62	86.7
Undelivered	6	13.3
Total	68	100

Table 2: Distribution of Maturity of Baby

Maturity of baby	No.(n)	Frequency (%)
Preterm	13	20.9
Term	47	69.1
Abortus	2	3.2
Total	62	100

Table 3: Distribution of mean Vital Sign Characteristics in the Study Population

Parameter	Mean	S.D	RANGE
HR(bpm)	82.3	6.4	70-110
SBP(mm of Hg)	122	15.7	100- 160
DBP(mm of Hg)	79.2	0.6	70-110

Table 4: Distribution of various LFT parameters in study population

LFT parameters	Range	No	Percentage
Level of Initial bilirubin (mg/dl)	**<5**	34	50
	5-9	22	32.3
	10-15	10	14.7
	>15	2	2.9
SGPT	**Normal (up to 35)**	57	83.8
	36-1000	8	11.7
	>1000	3	4.3
PT-INR	**Normal**	63	92.6
	Raised	5	7.3

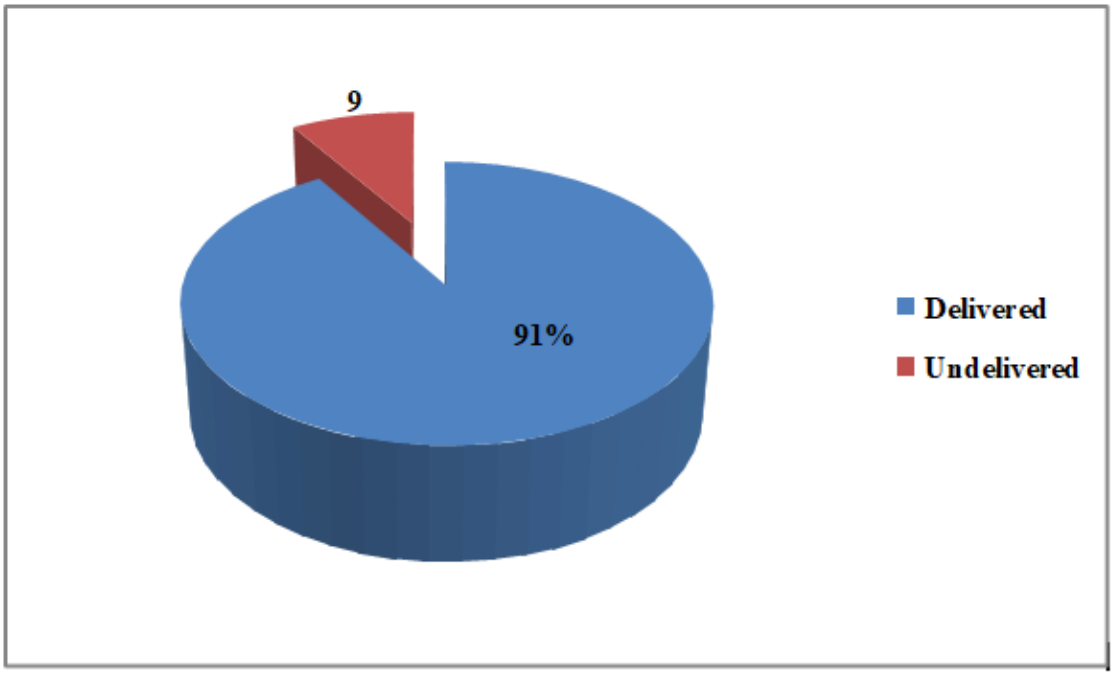

Figure 1: Distribution of Pregnancy Outcome

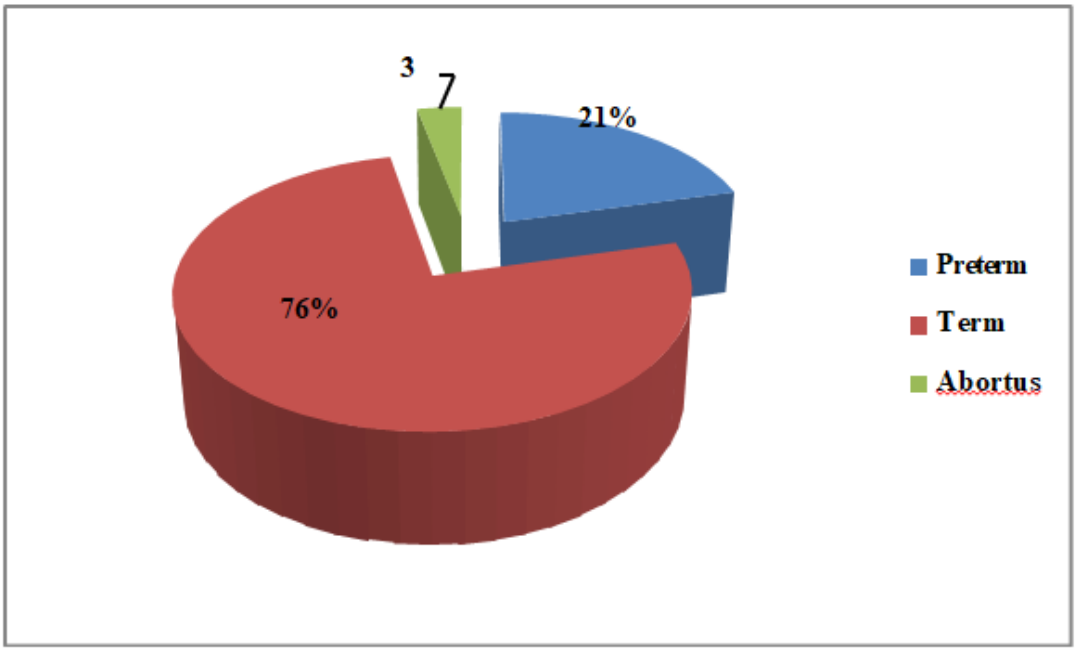

Figure 2: Distribution of Maturity of Baby

In our study, 62(86.7%) patients were Delivered patients and 6(13.3%) patients had undelivered patients. The value of z is 9.6039. The value of p is <.00001. The result is significant at p < .05. In our study, 13(20.9%) patients had Preterm Maturity of baby, 47(69.1%) patients had Term Maturity of baby, and 2 (3.2%) patients had Abortus Maturity of baby. The value of z is 8.266. The value of p is < .00001. The result is significant at p < 0.05 In above table showed that the mean HR (bpm) (mean±s.d.) of patients was 82.3± 6.4. In above table showed that the mean SBP (mm of Hg) (mean±s.d.) of patients was 122± 15.7. In above table showed that the mean DBP (mm of Hg) (mean±s.d.) of patients was 79.2± 0.6. In our study, 34(50%) patients had <5 Level of Initial bilirubin (mg/dl), 22(32.3%) patients had 5-9 Level of Initial bilirubin (mg/dl), 10(14.7%) patients had 10-15 Level of Initial bilirubin (mg/dl) and 2(2.9%) patients had >15 Level of Initial bilirubin (mg/dl). The value of z is 6.2197. The value of p is < .00001. The result is significant at p <0.05. In our study, 57(83.8%) patients had Normal (up to 35) SGPT, 8 (11.7%) patients had 36-1000 SGPT and 3(4.3%) patients had >1000 SGPT. The value of z is 9.3257. The value of p is <.00001. The result is significant at p < 0.05. In our study, 63(92.6%) patients had Normal PT-INR and 5(7.3%) patients had Raised PT-INR. The value of z is 9.9469. The value of p is <0.00001. The result is significant at p < 0.05.

DISCUSSION

It was observed that most of the patients delivered [62(86.7%)]. It was statistically significant (p < 0.00001) , (z = 9.6039)

The maximum incidence of jaundice was in 3rd trimester and the complications were also high during that period. Harshad et al, Shukla et al and other studies have stated that maximum incidence of jaundice was in III trimester and morbidity and mortality were also higher during III trimester. [7]

We found that, majority of the patients had Term Maturity of baby [47(69.1%)] and it was statistically significant (p<.00001), (z=8.266). The higher incidence of preterm delivery was supported by Kumar et al 66.6% and Harshad et al 32% is due to high fever, increased cytokine release, disturbed hormonal status and debilitating effects of viremia of hepatitis. [8] The perinatal mortality in present study was 35.5% comparable to Rathi U et al who reported 35.4% and Kumar et al reported 26.5%. Among 16 Neonatal deaths, HELLP syndrome constitutes 31.2%, hepatitis E 25%, hepatitis B 12.5%, and intrahepatic cholestasis of pregnancy 12.5%. According to Williamson et al the poor fetal outcome in intrahepatic cholestasis of pregnancy was due to the toxic bile acid level in the fetus causing fetal arrhythmia. [9] One intrauterine death was seen with chronic liver disease. Westbrook et al reported 26% of fetal loss with chronic liver disease. [10] 53.3% babies were below 2.5 kg in present study and among them there was 80% mortality.

In our study, the mean HR (bpm) of patients was [82.3± 6.4], the mean SBP (mm of Hg) of patients was [122± 15.7], and the mean DBP (mm of Hg) of patients was [79.2±0.6].

We found that, significantly higher of patients had <5 Level of Initial bilirubin (mg/dl) [34(50%)] and it was statistically significant (p < 0.00001) , (z = 6.2197)

Our study showed that, most of the patients had Normal (up to 35) SGPT [57(83.8%)] which was statistically significant (p < 0.00001) , (z = 9.3257) but Harshad et al also reported that marked elevation

of bilirubin and transaminases (10 fold) occured in viral hepatitis whereas patients with pregnancy associated liver disease like HELLP, Intrahepatic cholestasis of pregnancy and hyperemesis had only 2-3 fold elevation.[5]

Jain S et al reported 52 patients with fulminant hepatic failure and concluded that renal dysfunction was the indicator of poor prognosis in patients with fulminant hepatic failure. [11] Rathi U et al reported 3 cases of AFLP and among them 2 cases died of DIVC and multiorgan failure. [6] Third patient died of HELLP syndrome, had severe hypertension, proteinuria, ascites delivered a dead born baby, died of DIVC and hepatorenal failure. Rathi U et al reported 25% mortality due to preeclampsia associated liver dysfunction. The fourth patient was a case of non-cirrhotic portal hypertension with grade III esophageal varices died due to massive hematemesis at her second trimester. West brook et al reported one death in pregnancy due to variceal bleeding.

We found that, most number of patients had Normal PT-INR [63(92.6%)]. It was statistically significant (p<.00001), (z=9.9469).

CONCLUSION

Pregnancy and jaundice are a dangerous combo. It affects a tiny proportion of expectant mothers, yet it has a devastating effect on both the mother's and the fetus's life. Lowering maternal and fetal mortality and morbidity in a nation like India can be achieved by early transfer to a primary health center, prompt medical attention to the doctor, and health education to expectant mothers regarding warning signs and symptoms. According to our analysis, hepatitis was the most common cause of jaundice among all causes, with hepatitis B being the most common virus. The two most significant problems for mothers are hepatic encephalopathy and acute renal damage, whereas atonic PPH was the most frequent complication in the research. In our investigation, HELLP was the most prevalent cause of death. The high rate of maternal death in our nation might be caused by a number of things, including inadequate nutrition hygiene, delayed hospital referrals, delayed seeking medical care, and the prevalence of anemia. When they are admitted to the tertiary healthcare system, a large number of patients are already in a lifeless state and frequently show little improvement with therapy.

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