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A Prospective Study on Fetomaternal Outcome in Pregnancies at term Complicated with Jaundice

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ABSTRACT
To find out the effect of jaundice during pregnancy on feto-maternal outcome. The present study was a prospective observational study. This Study was conducted from 18 months (March 2019 to August 2020) at Department of gynecology and obstetrics I.P.G.M.E. and R. total 50 patients were included in this study. Most of the (64.0%) patients were 21-30 years old. Majority of the patients were rural papulation and belong to low socio economic status. In this study, majority of the patients were IPD. unbooked and referral cases. Pallor was 48.0%, icterus was 66.0% and edema was 56.0%. Majority (90.0%) of the patients had normal HPLC, Beta thalassemia trait was (6.0%) and Beta thalassemia major was (4.0%). 18.0% patients had HbsAg, Anti HAV was (8.0%) and Anti HEV was (6.0%). Majority of the (68.0%) patients had normal USG. 4.0% AFLP (clinically), 20.0% HELLP, 4.0% hemolytic anemia and 24.0% P-ICP, 8.0% patients had obstructive jaundice, 8.0% preeclampsia and 32.0% viral hepatitis. Needed PRBC transfusion was (36.0%), 24.0% patients required Platelet transfusion and 18.0% patients needed FFP transfusion. We found that majority (14.0%) of the patients had PPH Complication. About (20.0%) patients had ITU admission and only 5 patients had maternal mortality. About 22 (48. 9%) babies needed admission in NICU and 7 babies had neonatal mortality. The prevalence poor feto-maternal outcome can be improved by creating public awareness, proper sanitation facilities, safe drinking water and immunization against viral hepatitis, improved antenatal care for early detection and timely referral to well equipped hospitals.

INTRODUCTION

Pregnancy jaundice is a serious medical condition that is becoming more common in developing countries. The hemodynamic, hormonal and immunological changes that occur during pregnancy not only affect the course of both acute and chronic jaundice but they may also affect the outcome of the pregnancy. Increased serum oestrogen and progesterone levels have an effect on hepatic functioning during pregnancy. Physical signs such as palmer erythema and spider angiomas, which may indicate liver disease are occasionally seen in normal pregnancy.

Acute viral hepatitis is the most common cause of jaundice in pregnancy due to infections with hepatitis viruses A, B, C, D and E.[1,2] The course of most viral hepatitis is unaltered in pregnancy with the exception of Hepatitis-E in which maternal and foetal mortality rates are significantly increased[2]. Hepatitis E is the most common cause of fulminant hepatic failure (FHF) in pregnancy specially in third trimester leading to high maternal mortality[3]. Other common maternal complications in jaundice are preterm labour, postpartum haemorrhage (PPH), renal failure, disseminated intravascular coagulation (DIC). The various foetal complications are intrauterine death, prematurity and risk of vertical transmission of the infection[1]. Another group of jaundice unique to pregnancy include intrahepatic cholestasis of pregnancy, pre-eclampsia associated with HELLP syndrome, acute fatty liver of pregnancy and hyperemesis gravidarum[4]. There are few patients of jaundice in pregnancy having preexisting liver disease like chronic active hepatitis, Wilsons's disease[4]. Like other developing countries, many young mothers of India become victims of hepatitis during pregnancy and lose their lives. There is scarcity of data available in this aspect documenting prevalence, profile and effect on outcome of pregnancy. The incidence of jaundice varies from 0.4-0.9 1000^{-1} deliveries. Jaundice in pregnancy carries a grave prognosis in both mother and fetus and is responsible for 10% of maternal deaths. The present study analyzes the causes and the feto-maternal outcome in pregnancies affected with jaundice.

MATERIALS AND METHODS

The present prospective analytical study was carried out in a tertiary care center attending outdoor and admitted in indoor in pregnent women with jaundice at term. Approval for this study protocol and clearance was obtained from ethics committee of the Institute. It was a prospective observational study in 50 pregnant women with jaundice at term for a period of 18 months (March 2019 to August 2020). Each case record proforma was completed by taking proper history, general, systemic and obstetrics examination, liver function tests, USG, hemogram, bleeding time, clotting time, coagulation profile, viral markers like HBsAg, anti HCV, anti HAV, antiHEV, HPLC if clinical situations demands.

Maternal outcome was studied in terms of mode of delivery, maternal morbidity like PPH, hepatic failure, renal failure, DIC, encephalopathy, need for blood transfusions, ITU/CCU admission and mortality. Perinatal outcome in terms of APGAR score, birth weight, requirement of NICU admissions, fetal morbidity and mortality.

Inclusion criteria: Pregnant women in term gestation (more than 37 weeks) with jaundice attending outdoor and admitted in ward.

Exclusion criteria: Preterm pregnancies complicated with jaundice, jaundice due to sepsis.

RESULTS

In our study, 6 (12.0%) patients were ≤20 years old, 32 (64.0%) patients were 21-30 years old and 12 (24.0%) patient were 31-40 years old. In our study, 23 (46.0%) patients were P0+0, 6 (12.0%) patients P0+1, 6 (12.0%) patients P1+0, 8 (16.0%) patients P1+1, 3 (6.0%) patients P2+0 and 4(8.0%) patient P3+1. 23 (46.0%) patients were Primi-gravida and 27 (54.0%) patient had Multigravida. In our study, 30 (60.0%) patients were from rural area and 20 (40.0%) patients from urban area. About 39 (78.0%) patients were lower class, 7 (14.0%) patients were belong to lower middle class, 3 (6.0%) patients middle class and 1 (2.0%) patients upper middle class. About 38 (76.0%) patients were in IPD and 12 (24.0%) patients were in OPD. In our study, 15 (30.0%) patients were booked cases.

In our study, 32 (64.0%) patients were referral cases and 18 (36.0%) patients presented self. We found that, 24 (48.0%) patients had Pallor, 33 (66.0%) patients had Icterus, 28 (56.0%) patients had edema at the time of admission. About 2 (4.0%) patients had Beta thalassemia major, 3 (6.0%) patients had Beta thalassemia trait and 45 (90.0%) patients had normal HPLC. About 9 (18.0%) patients had HbsAg, 4 (8.0%) patients had Anti HAV and 3 (6.0%) patients had Anti HEV. In our study, 4 (8.0%) patients had CBD stone, 1 (2.0%) patients had GB stone, 2 (4.0%) patients had IUFD, 9 (18.0%) patients had IUGR and 34 (68.0%) patients had Normal USG. In our study, 2 (4.0%) patients were diagnosed AFLP (clinically), 10 (20.0%) patients had HELLP, 2 (4.0%) patients had hemolytic anemia, 12 (24.0%) patients had ICP, 4 (8.0%) patients had obstructive jaundice, 4 (8.0%) patients had Preeclampsia and 16 (32.0%) patients had viral hepatitis.

Our study showed that, 18 (36.0%) patients undergone LSCS, 5 (10.0%) patients undelivered and 27 (54.0%) patients undergone vaginal delivery. In our

study, 3 (16.7%) patients had CPD, 6 (33.3%) patients developed fetal distress, 4 (22.2%) patients post CS, 2 (11.1%) patient repeat CS and 3 (16.7%) patients had unfavourable cervix. In our study, 18 (36.0%) patients required PRBC transfusion. About 12 (24.0%) patients needed platelet transfusion and 9 (18.0%) patients had FFP transfusion. About 3 (6.0%) patients had AKI, 1 (2.0%) patients developed DIC, 1 (2.0%) patients developed hepatic encephalopathy, 1 (2.0%) patients had mods and 7 (14.0%) patients had PPH. In our study, 10 (20.0%) patients needed ITU admission.

In our study, 5 (10.0%) patients were expired and 45 (90.0%) patients were discharged. About 22 (48. 9%) babies needed admission in NICU. About 7 (15.6%) babies had neonatal death and 38 (84.4%) babies were discharge.

Our study showed that, mean age in years of patients was (26.5800±5.2957) similar study age group of 20-30 years (58%), mean Gestational age of patients was (38.4200±1.1968), mean Initial SBP of patients was 137.8000±22.7542, Initial DBP of patients was 87.4400±11.0586, mean HB of patients was 9.3920±1.1930, mean Plt (lakhs) of patients was 1.6660±0.7018, mean direct bilirubin of patients was 3.5060±2.0920, mean indirect bilirubin of patients was 1.5780±0.7587 and mean total bilirubin of patients was 5.0840±2.6425, mean INR of patients was 1.5320±0.9520, mean SGPT of patients was 249.4600±214.1472, mean SGOT of patients was 313.4600±252.0592, mean LDH of patients was 505.1200±175.5119, mean Urea of patients was 57.4400±19.9102, mean Creatinine of patients was 1.5580±1.4126, mean Urine dipstick of patients was 0.7400±1.0461, mean Apgar score of patients was 6.5778±1.8401, mean fetal weight of patients was 2.5978±0.7028 (Table 1-3).

Table 1: Distribution of diagnosis, mode of delivery and complication

Parameters	Frequency	Percentage
Diagnosis		
AFLP (clinically)	2	4.0
HELLP	10	20.0
Hemolytic anemia	2	4.0
ICP	12	24.0
Obstructive jaundice	4	8.0
Preeclampsia	4	8.0
Viral hepatitis	16	32.0
Total	50	100.0
Mode of delivery		
LSCS	18	36.0
Undelivered	5	10.0
Vaginal delivery	27	54.0
Total	50	100.0
Complication		
AKI	3	6.0
DIC	1	2.0
Hepatic encephalopathy	1	2.0
MODS	1	2.0
PPH	7	14.0
No	37	74.0
Total	50	100.0

Table 2: Distribution of Indication for LSCS, PRBC transfusion, platelet transfusion, FFP transfusion, ITU admission, maternal outcome, NICU admission, perinatal outcome, dengue NS1 and malaria dual antigen

Parameters	Frequency	Percentage
Indication for LSCS		
CPD	3	16.7
Fetal distress	6	33.3
Post CS	4	22.2
Repeat CS	2	11.1
Unfavourable cervix	3	16.7
Total	18	100.0
PRBC transfusion		
No	32	64.0
Yes	18	36.0
Total	50	100.0
Platelet transfusion		
No	38	76.0
Yes	12	24.0
Total	50	100.0
FFP transfusion		
No	41	82.0
Yes	9	18.0
Total	50	100.0
ITU admission		
No	40	80.0
Yes	10	20.0
Total	50	100.0
Maternal outcome		
Death	5	10.0
Discharge	45	90.0
Total	50	100.0
NICU admission		
No	23	51.1
Yes	22	48. 9
Total	45	100.0
Perinatal outcome		
Death	7	15. 6
Discharge	38	84.4
Total	45	100.0
Dengue NS1		
No	50	100.0
Total	50	100.0
Malaria dual antigen		
No	50	100.0
Total	50	100.0

DISCUSSIONS

The present study was a prospective observational study. This study was conducted from 18 months (March 2019 to August 2020) at Department of Gynaecology and Obstetrics I.P.G.M.E. and R. Total 50 patients were included in this study.

Yadav *et al*.[5] found that the mean age of the study population was 26.09±4.90 years. Kapadia *et al*.[6] observed that incidence of jaundice in pregnancy was found to be 0.65% in present study. Most commonly involved patients belonged to age group 25-29 years. Padh *et al*.[7] found that out of total 70 patients 54 (77.13%) patients were from age group of 20-29 years. In our study, out of 50 patients most of the patients were 21-30 years old. Age was statistically significant (p<0.00001). We found that, significantly higher number of patients had P0+0 (p = 0.0012). We observed that, Multigravida was not significantly higher than prim gravid (p = 0.42372) similar study by Haider *et al*.[8] Total 50 patients were included in this study multigravida were 80%, Soren *et al*.[9]. Patient were between age group of 25-30 years from lower socio-economic status with maximum being primigravidae and Padh *et al*.[7] found that out of total 70 patients, maximum patients were multigravida i.e., 28 (40%).

Table 3: Distribution of mean all parameters

Parameters	No.	Mean	Standard deviation	Minimum	Maximum	Median
Age in Years	50	26.5800	5.2957	19.0000	39.0000	26.0000
Gestational age	50	38.4200	1.1968	37.0000	41.0000	39.0000
Initial SBP	50	137.8000	22.7542	110.0000	190.0000	128.0000
Initial DBP	50	87.4400	11.0586	70.0000	120.0000	84.0000
Hb	50	9.3920	1.1930	6.8000	12.0000	9.5000
Plt (lakhs)	50	1.6660	0.7018	0.4000	3.0000	1.6000
Direct bilirubin	50	3.5060	2.0920	1.2000	9.0000	2.8000
Indirect bilirubin	50	1.5780	0.7587	0.6000	3.5000	1.2000
Total bilirubin	50	5.0840	2.6425	2.5000	11.5000	4.2000
INR	50	1.5320	0.9520	0.7000	6.8000	1.4000
SGPT	50	249.4600	214.1472	56.0000	878.0000	145.0000
SGOT	50	313.4600	252.0592	48.0000	1034.0000	201.0000
LDH	50	505.1200	175.5119	250.0000	940.0000	480.0000
Urea	50	57.4400	19.9102	32.0000	106.0000	50.0000
Creatinine	50	1.5580	1.4126	0.6000	7.4000	1.0500
Urine dipstick	50	0.7400	1.0461	0.0000	3.0000	0.0000
APGAR score	45	6.5778	1.8401	0.0000	9.0000	7.0000
Fetal weight	45	2.5978	0.7028	1.4000	4.0000	2.6000

Padh *et al*.[7] found that out of total 70 patients 53 (75.71%) women from rural area, 66 (94.28%) women coming from lower middle and lower socio economic class. Reshma showed that out of 245 subjects, 37.1% were from urban areas and 62.9% belong from rural background and our study showed that, significantly higher number of patients were belong to rural area (p = 0.0455) and we observed that, significantly higher number of patients were belong to lower class (p<0.00001). In our study, IPD patients was significantly higher than OPD patients (p<0.0001).

We found that, significantly more number of patients had un-booked and referral. Similar, study by Haider *et al*.[8] total 50 patients were included in this study 50% were unbooked.

Tripti *et al*.[10] found that, out of 41 patients, pallor 41 (100%) patients had pallor, edema 18 (3.90%) andIcterus 41 (100%).

Our study showed that, lower number of patients had pallor was not statistically significant (p = 0.68916) and more number of patients had edema was not significant (p = 0.23014). We observed that, significantly higher number of patients had Icterus (p = 0.00138).

In our study, Beta thalassemia trait was significantly higher than Beta thalassemia major (p<0.00001).

We found that, significantly lower number of patients had HbsAg, Anti HAV and Anti HEV (p<0.00001). Our study showed that, significantly higher number of patients had Normal USG (p<0.00001). Kishore *et al*.[11] showed that total 0.72% pregnancies were complicated by jaundice. HELLP syndrome was the commonest cause of jaundice in pregnancy (36.7%), followed by viral hepatitis (32.7%). Hepatitis E was the most common type of viral hepatitis (91.8%). Best fetal outcome was seen in viral hepatitis (live birth rate 67.6%).

In our study, majority number of patients had viral hepatitis was not significant (p = 0.37346) and similar study by Rizvi 18% with viral hepatitis. We found that, LSCS was not significantly higher than vaginal delivery (p = 0.0703). Rizvi SM, LSCS was done in 69 patients (69%), normal vaginal delivery in 24 patients (24%).

Haider *et al*.[8] found that foetal distress was 20.0% of newborn problems and our analysis found that the higher number of patients with foetal distress was not statistically significant (p = 0.4593).

It was found that, significantly lower number of patients had PRBC transfusion, Platelet transfusion and FFP transfusion. Haider *et al*.[8] found that major maternal complications included coagulation failure and renal impairment in 40% and 20% of cases, respectively, followed by septicemia, hepatic coma, ICU admission, Abruptio placenta, PPH and maternal mortality in 12.0, 10.0, 20.0, 28.0, 30.0 and 4.0% of cases, respectively. Foetal discomfort was 20.0%, stillbirths were 10% and IUDs constituted 10% of all newborn problems.

We found that, significantly higher number of patients had no complication (p<0.00001). Reshma found that out of 211 live births, 26% (55) did not have any postnatal complications, while 15.6% (55) were admitted to SNCU, 1.42% to NICU, 4.73% had sepsis as a complication, 31.27% had neonatal jaundice, 14.2% had respiratory distress syndrome, 2.36% had metabolic complications and 4.26% died.

Our study showed that, significantly lower number of patients had ITU admission (<0.001) and lower number of patients had NICU admission was not significant.

In our study, discharge patients 45 (90.0%) in maternal outcome was significantly higher than died patients 5 (10.0%) in maternal outcome (p<0.001). We found that, discharge patients in perinatal outcome was significantly higher in died patients (p<0.001).

CONCLUSION

Evaluating various socio-economic factor, etiological factors, maternal and fetal outcome it can be concluded that high maternal mortality and morbidity in our country are due to poor hygiene, inadequate sanitation, malnutrition, prevalence of

anemia, delay in seeking medical advice, lack of awareness and delay in referral to the higher centers delaying initiation of proper treatment.

The prevalence poor feto-maternal outcome can be improved by creating public awareness, proper sanitation facilities, safe drinking water and immunization against viral hepatitis, improved antenatal care for early detection and timely referral to well equipped hospitals . The notable short comings of this study to mention are small sample size involving in a single centre though carried out in a tertiary care hospital.

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