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# A COMPREHENSIVE STUDY TO EVALUATE THE MATERNAL AND FETAL OUTCOMES IN PREGNANCIES COMPLICATED WITH JAUNDICE

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**ABSTRACT** **Introduction:** Pregnancy with jaundice is regarded as high risk pregnancy so it is considered very important sign during antenatal check up. Incidence of jaundice in pregnancy is 0.4-0.9/1000 in India. Jaundice complicates a small percentage (3-4%) of all pregnant women, yet it takes a major toll on health of both mother and fetus especially in developing countries like India. Jaundice in pregnancy carries a grave prognosis for both mother and fetus, and is responsible for 10% of maternal deaths as high as 18% and 60% of perinatal deaths. **Aim:** To know the incidence and to evaluate the causes of jaundice in pregnancy. To know the effect of jaundice on maternal and fetal outcomes. **Material And Methods:** All booked, unbooked and referred pregnant women with deranged liver function tests admitted in department of obstetrics and gynaecology, Swaroop Rani Nehru hospital, Motilal Nehru Medical College Prayagraj between 1stJan 2021 to 31stDec 2021 were taken up for study. Results were statistically analysed for maternal and neonatal outcomes. **Results:** The incidence of jaundice was 8.4 per 1000 cases, 66.6% were referred from peripheral hospitals, of all the 85.7% were between age group of 20-35 years, Max. no. of cases were primigravida. The most common cause was HELLP. The maternal mortality was 14.2%, and perinatal mortality was 31.5%. The common maternal complications were postpartum hemorrhage, hepatic encephalopathy, disseminated intravascular coagulopathy, hepatorenal failure. **Conclusion:** Jaundice in pregnancy has adverse fetomaternal outcome. Improvement in health awareness, education and regular antenatal checkups, early referrals result in early diagnosis and treatment of jaundice during pregnancy, thus reducing maternal and fetal mortality and morbidity.

**KEYWORDS :** Jaundice, Pregnancy, Viral hepatitis, Mortality, Morbidity.

## INTRODUCTION

Pregnancy with jaundice is regarded as high risk pregnancy so it is considered very important sign during antenatal check up. Incidence of jaundice in pregnancy is 0.4-0.9/1000 in India. Jaundice complicates small percentage (3-4%) of all pregnant women, yet it takes a major toll on health of both mother and fetus especially in developing countries like India. Jaundice in pregnancy carries a grave prognosis for both mother and fetus, and is responsible for 10% of maternal deaths as high as 18% and 60% of perinatal deaths.

Liver function tests remain largely unchanged during pregnancy except the increased levels of alkaline phosphatase (ALP). ALP is physiologically produced by placenta at the brush border membranes of the syncytiotrophoblast. Causes of jaundice could be peculiar to the pregnancy such as HELLP syndrome, acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy, severe hyperemesis and jaundice complicating toxemia of pregnancy. It can be concurrent with pregnancy such as due to infective pathology like viral hepatitis, gall stones, pancreatitis or it could be due to drugs administered during pregnancy. The present study analyses the cause of the disease, altered liver function, maternal and fetal morbidity and mortality in jaundice complicating pregnancy. This study will be helpful in better understanding and improving the maternal and perinatal outcome in jaundice complicating pregnancy.

## MATERIAL AND METHODS

The study was conducted in The Department of Obstetrics and Gynaecology, Swaroop Rani Nehru hospital, Motilal Nehru medical College Prayagraj between 1stJan 2021 to 31stDec 2021. This retrospective observational study included 21 pregnant women with jaundice admitted in the department during study period. Elaborate history and thorough general, systemic and obstetric examination were carried out. Liver function tests like serum bilirubin total, direct and indirect, total proteins, albumin and globulin, serum transaminases, serum alkaline phosphatase, clotting time, bleeding time and ultrasonogram, complete hemogram, reticulocyte count, coagulation profile, viral markers study including HBs Ag, Anti HCV Ab, and VDRL were done in all patients. Maternal outcome was noted in terms of the mode of termination of pregnancy, maternal morbidity and mortality. Fetal outcome was assessed by perinatal morbidity and mortality.

## RESULTS

Total number of antenatal admissions during this period was 2480. Total number of pregnant women with jaundice was 21. The incidence of jaundice complicating pregnancy during this period in the hospital was 0.85%. The patients in the study group were in the age range from 19 years to 37 years. Nearly 85.7% of the jaundiced patients were between 20 and 35 years. The incidence of jaundice was more common in low socio-economic groups. Maximum numbers of cases were primigravida 47.6% and multi gravidae were 28.57%. Out of 21 cases, 17 cases (80.95%) presented with jaundice during III trimester(Table-1).

| Age Group | No. of cases | Percentage |
|---|---|---|
| <20 years | 1 | 4.76 |
| 20-35 years | 18 | 85.71 |
| >35 years | 2 | 9.52 |
| Booking Status | | |
| Unbooked | 14 | 66.6 |
| Booked | 7 | 33.3 |
| Referral Status | | |
| Referred | 14 | 66.6 |
| Direct | 7 | 33.3 |

| Gravidity | No. of Cases | Percentage |
|---|---|---|
| Primigravida | 10 | 47.6 |
| Second gravida | 2 | 9.5 |
| Third gravida | 3 | 14.2 |
| Fourth gravida | 1 | 4.7 |
| Gestational age | | |
| 1st Trim. | 1 | 4.7 |
| 2nd Trim. | 3 | 14.2 |
| 3rd Trim. | 17 | 80.95 |

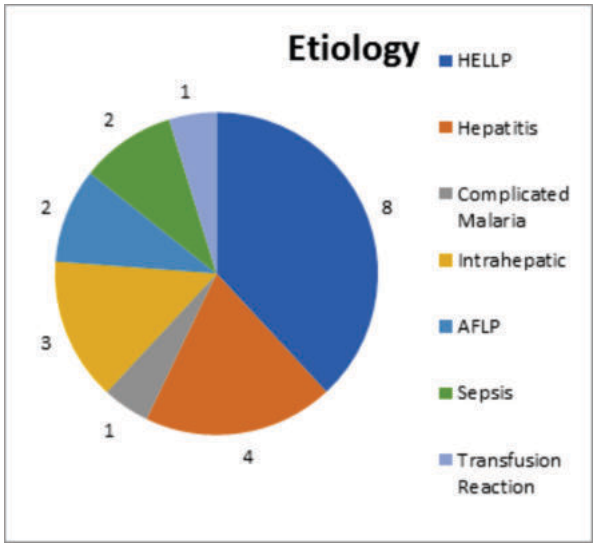
2 Patients had past history of jaundice. 3 patients had history of blood transfusion. On analyzing the presenting symptoms, 33.33% had high colored urine. Nausea and vomiting were present in 19.04% of patients. Other predominant symptoms were fever, loss of appetite and upper abdominal pain. Itching was present in 28.57% of cases. Jaundice was present in all the cases. Other signs were hepatomegaly, splenomegaly, scratch marks and Ascites (Table -2)

| | | |
|---|---|---|
| Yellowish | 07 | 33.33 |
| Fever | 09 | 42.8 |
| Nausea & Vomiting | 4 | 19.04 |
| Abd. Pain | 1 | 4.7 |

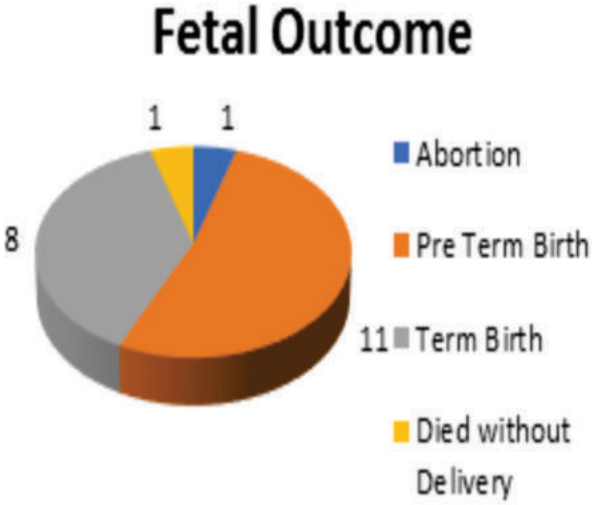
4.76% of patients showed positive for bile pigments and bile salts in the urine. The level of S. bilirubin varied widely between 2.1 to 18.5mg/ dl. 14.2% of patients had high S. bilirubin more than 14 mg/dl. The serum transaminase level was below 100 IU/L in 38.09% of patients, 28.57% patients had level more than 400 IU/L. S. alkaline phosphatase was more than 200 U/L in 71.4% (Table – 3).

| S.Bilirubin | | |
|---|---|---|
| 2-5 | 12 | 57.12 |
| 6-10 | 5 | 23.8 |
| 11-15 | 2 | 9.5 |
| 16-20 | 2 | 9.5 |
| ALP | | |
| <200 | 12 | 57.1 |
| 200-500 | 7 | 33.3 |
| >500 | 2 | 9.5 |
| SGOT | | |
| <400 | 9 | 42.8 |
| 400-800 | 9 | 42.8 |
| >800 | 3 | 14.2 |

HELLP syndrome was the commonest etiology in 38.09%. Hepatitis was the next common etiology in 19.04%. Acute fatty liver of pregnancy, cholestasis and portal hypertension were the other causes (Table – 4).



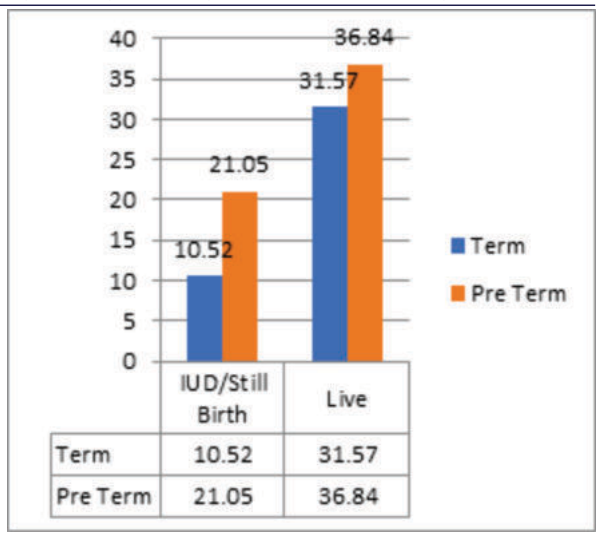

Out of 21 patients, 19 delivered. 1 patient died antenatally and 1 had abortion. 68.4% of patients delivered vaginally. 31.57% patients had caesarean deliveries. Out of 19 patients, 8 patients (42.10%) had term deliveries, 11 patients (57.89%) had preterm deliveries (Table-5).




Maternal mortality was 14.2% (3 out of 21 patients) in jaundice complicating pregnancy. Among 3 deaths, 1 was due to acute fatty liver of pregnancy, 2 died of HELLP syndrome, sepsis being common in all 3 deaths(Table – 6).

| AFLP | 33.3% |
|---|---|
| HELLP | 66.6% |
| Sepsis | 100% |

Perinatal mortality was 31.5%, which included 2 term IUD/stillbirths (10.52%), 4 preterm IUDs (21.05%). There were 13 live births (68.42%), Of these 7 were preterm and 6 were term babies (Table – 7).




## DISCUSSION

Total antenatal admissions during the study period were 2,480, of which 21 patients had jaundice and the incidence is 0.85%. 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 [1, 2].

In present study, high level of S. bilirubin, SGPT and SGOT levels more than 500 IU/ml were associated with viral hepatitis. Harshad, et al. also reported that marked elevation of bilirubin and transaminases (10 fold) occurred in viral hepatitis whereas patients with pregnancy associated liver disease like HELLP, Intrahepatic cholestasis of pregnancy and hyperemesis had only 2-3 fold elevation [1].

Viral hepatitis was the cause in 19.04% cases whereas Shukla, et al. [2] reported 57% and Harshad, et al. [1] reported 47% cases of viral hepatitis. 38.09% of cases had HELLP syndrome in present study. Rathi U, et al. reported 52.3% of cases with liver dysfunction due to preeclampsia and HELLP [3]. Intra hepatic cholestasis of pregnancy was diagnosed in 3 patients.

In the present study, 14.2% patients died, 47.05% patients developed complications and 52.94% had uneventful recovery. 11.7% patients had atonic PPH. 17.6% had DIC, 5.88% had hepatic encephalopathy. Abruption and hepatorenal failure were seen in 11.7%. 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 [4]. Rathi U, et al. reported 3 cases of AFLP and among them 2 cases died of DIVC and multiorgan failure [3]. 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 [3]. West brook, et al. reported one death in pregnancy due to variceal bleeding [5].

Study by Rasheeda CA, et al. observed that mortality rate of hepatitis E infection in southern India was very low 3-4% compared to high mortality 30-100% seen in studies from Northern India [6]. Study by Harshad, et al., reported that mortality was 41% in pregnancy associated liver disease and 7.5% in viral hepatitis and concluded mortality due to hepatitis E was low [1].

Preterm deliveries were 57.89% (36.84% live births and 21.05% intra uterine deaths). The higher incidence of preterm delivery was supported by Kumar, et al. [7] 66.6% and Harshad, et al. [1]. 32% is due to high fever, increased cytokine release, disturbed hormonal status and debilitating effects of viremia of hepatitis. The perinatal mortality in present study was 31.5% comparable to Rathi U, et al. [3] who reported 35.4% and Kumar, et al. [7] reported 26.5%. According to Williamson, et al. [8], the poor fetal outcome in intrahepatic cholestasis of pregnancy was due to the toxic bile acid level in the fetus causing fetal arrhythmia. 68.4% babies were below 2.5 kg in present study and among them there was 38.46% mortality. Shukla, et al. reported 30.8% mortality in low birth weight babies [2].

## CONCLUSION

Although liver dysfunction is infrequently seen in pregnancy, it can result in severe maternal and fetal compromise. Viral hepatitis is the most common cause of jaundice in pregnancy. Generating public awareness about the various routes of transmission of the different types of infective hepatitis, improving sanitary conditions and habits, imparting health education and knowledge of preventive measures, routine and regular antenatal check-ups and viral markers as a part of routine antenatal screening can help in reducing the burden of jaundice in pregnancy. Jaundice in pregnancy should be managed as a team with collaboration of obstetrics, internal medicine, gastroenterology, anesthesia and critical care so that early diagnosis and aggressive management can prevent and reduce fetomaternal morbidity and mortality.

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