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Original Research Article

A clinical study on fetomaternal outcome in jaundice with pregnancy

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ABSTRACT

Background: Jaundice in pregnancy and pregnancy in women with preexisting liver disease is not very uncommon. However it takes a major toll on health of both mother and fetus, due to increased morbidity and mortality for both mother and fetus, categorizing pregnancy as a high risk one. The distribution of jaundice in pregnancy varies throughout the world, but is seen more in developing countries. The course and outcome of liver disorder in pregnancy is altered due to various hemodynamic, hormonal and immunological changes unique to pregnancy. The hepatic functions during pregnancy are affected by increase in serum estrogen and progesterone levels.

Methods: This was a prospective study of 70 cases of pregnancy with jaundice admitted in the department of obstetrics and gynecology at Sheth V.S. General Hospital, Ahmedabad, Gujarat, India. The duration of study was from June 2015 to December 2018. During this period 70 patients were admitted with jaundice in pregnancy. Patients were analyzed with regards to socio demographic profile, investigations, maternal and perinatal outcome.

Results: The incidence of pregnancy with jaundice in present study was 0.32%. Most common cause identified was viral hepatitis in 27 cases (38.57%) out of which 23(32.85%) cases being hepatitis E. Followed by HELLP syndrome, pre eclampsia, eclampsia in 24(34.28%) cases. 13(18.57%) cases were belonged to cholestatic jaundice of pregnancy. Rest 6(8.56%) cases belonged to malaria, portal hypertension due to liver disease etc. Out of total 70 patients 53(75.71%) women from rural area, 54(77.13%) patients were from age group of 20-29years. Maximum patients were multigravida i.e. 28 (40%) and 66(94.28%) women coming from lower middle and lower socio economic class. There were 9 maternal deaths, 5 due to DIC. Total vaginal deliveries were 40, 24 patients underwent LSCS, 4 patients had abortion, and 2 expired undelivered. Most common complication was DIC in 16(22.85%) cases and thrombocytopenia in 14(31.67%) cases. 30(42.85%) babies were LBW and 18(25.7%) babies were IUGR.

Conclusions: Prompt diagnosis and accurate evaluation and multidisciplinary approach of management in pregnancy with jaundice at a tertiary care center with good NICU is helpful in reducing maternal and perinatal mortality and morbidity.

Keywords: DIC, Hepatitis E, HELLP syndrome, Jaundice, Perinatal outcome

INTRODUCTION

The word “jaundice” is derived from French word “june” meaning yellow. By definition jaundice is yellow discoloration of skin & sclera because of increase in S. Bilirubin.¹ It is detected clinically at concentration of

2mg% or more. It is caused by disorders of hepatic & biliary tract or excessive hemolysis.² The hemodynamic, hormonal and immunological changes unique to pregnancy not only alter the course of both acute and chronic liver disease in pregnancy, but they may in-turn affect the outcome of pregnancy. The hepatic functions

during pregnancy are affected by increase in serum estrogen and progesterone levels.

Liver disease complicating pregnancy is divided into three general categories.²

- Jaundice induced by pregnancy: Hyperemesis gravidarum, intrahepatic cholestasis of pregnancy, acute fatty liver of pregnancy, pre-eclampsia, eclampsia, HELLP syndrome
- Jaundice coincidental with pregnancy but not induced by pregnancy: Acute viral hepatitis and other viral infections, gall stone disease, drug induced, hemolytic jaundice
- Jaundice that predates pregnancy due to chronic liver disease: Chronic hepatitis, cirrhosis of liver, alcoholic.

The incidence of jaundice in pregnancy varies throughout the world. It is around 0.1% in developed countries and ranges from 3-20% or higher in developing countries. Incidence of jaundice in pregnancy is 0.4-0.9/1000 in India.² Viral hepatitis is the most common cause of jaundice in pregnancy. The most common viruses responsible for viral hepatitis are hepatitis A (HAV), hepatitis B (HBV), hepatitis C (HCV), hepatitis E virus (HEV). Jaundice is the most common symptom of acute hepatitis. In developing countries like India, hepatitis E is the commonest cause of fulminant hepatic failure in pregnancy, mostly occurring in the third trimester of pregnancy leading to high maternal mortality ranging from 15-45%.³

METHODS

The study was a prospective study of 70 patients admitted in department of Obstetrics and gynecology at a tertiary care hospital with jaundice. The duration of study was June 2017 to December 2018. During this study period total 21750 deliveries occurred, out of which 70 patients were admitted with jaundice.

The demographic patterns, etiology, clinical course, maternal outcome, perinatal outcome and complications were observed.

Inclusion criteria

Patients who had symptoms and signs of jaundice which could be confirmed later by laboratory investigations (e.g. altered liver function tests).

All the patients were assessed thoroughly by both clinical examination and investigations in the form of component, SGOT, SGPT and alkaline phosphatase), coagulation profile, renal function tests (serum creatinine, BUN). Viral markers for hepatitis such as IgM HAV antibody, HBV, (HBsAg, HBeAg, anti-HBe), HCV (anti-HCV antibody), HEV antibody (IgM) were done in all patients. Other investigations were also carried out to confirm etiology (e.g.

serum LDH, D-dimer, FDP, urine routine, and microscopic examination, reticulocyte count) The above data was collected, scrutinized for the clinical and biochemical profile, etiology, maternal outcome and fetal outcome. Opinion from medicine and gastroenterology department was taken for better and comprehensive management of the patients. Critically ill patients were managed in intensive care unit by intensivist and obstetrician together. Neonatologist took care of newborns and admitted them to NICU for complications such as low birth weight, birth asphyxia, meconium aspiration syndrome, exaggerated physiological jaundice etc.

RESULTS

There were 21750 deliveries conducted during the year June 2017 to December 2018, out of which 70 women were admitted as diagnosed cases of jaundice. The incidence of jaundice in present study was calculated to be 0.32%. Satia MN et al showed 0.81% incidence of jaundice.⁴

Out of the 70 patients, 53 patients (75.71%) belonged from the rural area and 17(24.28%) from the urban set up. 16(22.85%) patients were registered and the other 54(77.14%) were referred during emergency from other peripheral hospitals. This is because most of the patients were from rural area and from lower socioeconomic class where probably the importance of antenatal registration and visits is not well established. 77.13% of the patients belonged to the age group of 25-29 years of age. This could also be due to the fact that most of the reproductive women in our set up belong to this age group.

Table 1: Pregnancy outcome.

Total no.:70	Pregnancy outcome	
30 (42.85%)	Pre-term	Vaginal delivery
10 (14.28%)	Term	
12 (17.14%)	Pre-term	LSCS
12 (17.14%)	Term	
2 (2.85%)		Expired undelivered
4 (5.71%)		Abortion

There was no significant difference seen in the affection of jaundice to gravidity. 17(24.28%) of patients were primi gravidas and 28(40%) patients were multigravidas.

In present study, most common cause of jaundice is infective viral hepatitis, it was seen in 27(38.57%) patients. Hepatitis E was the most common cause, accounting for 23(32.85%) of total cases and 85.18% of the infective viral hepatitis. Second most common cause is pre-eclampsia, eclampsia, HELLP Syndrome for 24 (34.28%) patients. Cholestatic jaundice is responsible for 13(18.57%) cases. Hemolytic jaundice was responsible for 2(2.85%) cases. Unique cases of non-cirrhotic portal fibrosis, severe vit.B12 deficiency and Gilbert syndrome contributed for 4(5.71%) of total cases.

Table 2: Perinatal outcome.

Total no: 64	Perinatal outcome			
31 (44.28%)	Live birth		Pre-term delivery (<37 Week) 42/64 (65.62%)	
28 (40%)	<2.5 Kg	Birth weight		
3 (4.28%)	>2.5 Kg			
15 (21.42%)	IUGR			
18 (25.71%)	Meconium stained liquor			
27 (38.57%)	NICU admission			
5 (7.14%)	SB	Mortality		
9 (12.85%)	Early Neonatal Death			
17 (24.28%)	Live birth			Term delivery (>37 Week) 22/64 (34.37%)
2 (2.85%)	<2.5 Kg	Birth weight		
15 (21.42%)	>2.5 Kg			
3 (4.28%)	IUGR			
10 (14.28%)	Meconium stained liquor			
10 (14.28%)	NICU Admission			
2 (2.85%)	SB	Mortality		
1 (1.42%)	Early neonatal death			
6 (8.57%)	Pre-term		IUFD	
2 (2.85%)	Term			

The study showed that anorexia, nausea, vomiting and diarrhoea was most common presenting symptom in 30 (42.85%) patients associated with abdominal pain in 26 (37.14) patients. Out of 70 patients 20 (28.57%) patients presented with complain of yellowish discoloration of sclera, stool and urine.

Icterus was the most common clinical finding in 66(94.28%) patients as compared to Mitta et al 100% patients had icterus.⁵ 9(12.85%) patients presented with hypertension and proteinuria suggestive of pre-eclampsia. Most of the patients presented with more than one symptom.

In present study the most common complications were DIC and thrombocytopenia occurring in 16(22.85%) and 14(20%) of the cases respectively. PPH and renal failure were found in 12(17.14%) and 3(4.28%) cases respectively. Study by Ambreen et al showed that DIC was the most common complication accounting for 20.7% patients, similar to the study.⁶

Nath J et al showed hepatic encephalopathy as a major complication present in 17% of cases which is 5.71% in present study.⁷

In present study, maternal mortality was 9/70(12.85%) however jaundice was responsible for 13.23% death of the 68 deaths that occurred in our department during study period. In the study highest mortality was due to DIC associated with multiorgan failure, septicemia, hepatic encephalopathy, pulmonary oedema and acute fulminant hepatic failure accounting for 7.14% of the total cases. Mortality due to DIC was accounting for 55.55% of total mortality of present study.

Pregnancy outcome

Out of 64 deliveries, 40(57.13%) patients delivered vaginally, 24(34.28%) patients by caesarean section, 2(2.85%) patient expired undelivered and 4(5.71%) patients aborted.

Out of 70 patients 42(59.99%) patients had preterm delivery and 22(31.42%) patients had term deliveries (Table 1).

Perinatal outcome

In present study showed that out of 64 deliveries, preterm delivery rate was 42(65.62%) and term delivery rate was 22(34.37%). In present study LBW was found in 30(42.85%).

In present study 18(25.7%) were IUGR. In present study liquor was meconium stained in 28(39.99%) deliveries. NICU admission rate was 29(52.85%) and major cause for admission was low birth weight. In present study IUFD was detected in 8(11.42%) cases. 25 babies died during perinatal period hence perinatal mortality rate was 35.71%(Table 2).

DISCUSSION

Jaundice in pregnancy is high risk pregnancy and requires tertiary centre care for management. Overall incidence of jaundice in India is 0.5-4/1000 deliveries.² The incidence of jaundice in our study is 0.32%. This is comparable to result Satia MN et al showed 0.81% incidence of jaundice.⁴

Most of the patients 77.13% belonged to age group 20-29 years, this could be due to early marriage and early childbearing in our country. 77.14% patients were emergency admission and most of them from rural area i.e 77.71%. This could be due to lack of knowledge regarding regular antenatal visits. In present study most common cause of jaundice is infective viral hepatitis, it is seen in 38.57% of the patients, similar to study by Acharya N et al who reported 60% patients with infective viral hepatitis.⁸

Hepatitis E virus was the most common cause, accounting for 32.85% of total cases of jaundice and 85.18% of infective viral hepatitis. Study by Acharya N et al had Hepatitis E as a cause of jaundice in 50% of the total cases and 83.33% of viral hepatitis cases.⁸ Second most common cause of jaundice in our study was pre-eclampsia, eclampsia, HELLP syndrome accounting for 34.28%. Most common complications in present study were DIC and thrombocytopenia occurring in 22.85% and 20% of cases respectively. In present study maternal mortality was 12.85%, however jaundice was responsible for 13.23%(9/68). 68 deaths were occurred in the department during study period. Highest mortality due to DIC was accounting for 7.145 of total cases and 55.55% of total

maternal mortality in present study. DIC was associated with multi organ failure, septicemia, hepatic encephalopathy, pulmonary oedema or acute fulminant hepatic failure. In present study 57.13% patients delivered vaginally, 34.28% patients by caesarean section, 2.85% patients expired undelivered and 5.71% aborted.

Out of 70 patients 59.99% patients had preterm delivery and 31.42% patients delivered at term, whereas 35% patients had preterm delivery and 62.5% patients had term delivery in study conducted by Mitta P et al which is contradictory to present study.⁵

In present study, LBW babies were found in 42.85% of babies and 25.7% babies were IUGR. NICU admission rate was 52.85%. In present study IUFD was detected. In 11.42% cases and perinatal mortality rate was 35.71%

All patients with jaundice were given special treatment. Bed rest and diet comprised the main factors in the management of these patients. A nutritious diet containing about 3000 Kcal daily was provided. High protein diet was recommended. Critically ill patients were admitted in intensive care unit and parenteral nutrition was given. Broad-spectrum antibiotics, mainly third generation cephalosporin's (which were not hepatotoxic) and metronidazole were given to prevent sepsis. Blood and blood products transfusion was required in 55 % of the cases who had an abnormal coagulation profile. All patients with coagulopathy and acute liver failure were administered N-acetyl cysteine (NAC). It acts as a glutathione precursor and has an anti-oxidant and vasodilating properties. Improvements in the consumption of oxygen and oxygen extraction ratio have been observed through various studies by intravenous administration of NAC. Ursodeoxycholic acid (UDCA) was given to all the patients as it improves pruritus. In obstetric cholestasis, the proposed mechanism of action of UDCA is displacement of more hydrophobic endogenous bile salts from the bile acid pool. This may protect the hepatocyte membrane from the damaging toxicity of bile salts; enhance bile acid clearance across the placenta from the fetus.⁹

CONCLUSION

Jaundice with pregnancy is a bad combination. It affects a small percentage of pregnant women yet takes a major toll on two lives the mother and the fetus. In a country like India, beginning from health education to the pregnant mother regarding warning signs and immediate visit to the doctor, to medical personnel at primary health centre for early transfer can go long way in lowering

maternal and perinatal mortality and morbidity due to jaundice in pregnancy. Lastly, a team collaboration of obstetrics, internal medicine, gastroenterology, and anaesthesia and critical care is very much essential to combat the grave complications of this condition and to achieve a fruitful outcome.

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