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Maternal and fetal outcome in jaundice complicating pregnancy

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Abstract

Background: The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. Jaundice in pregnancy carries a grave prognosis for both the mother and the fetus, and is responsible for 10% of maternal deaths. Liver disease in pregnancy is an important medical disorder seen more often in developing countries than in developed ones. The present study analyzes the causes and the fetomaternal outcome in pregnancies affected with jaundice.

Aim: 1. To analyze the maternal outcome in terms of mode of termination of pregnancy, maternal complications and mortality of jaundice complicating pregnancy. 2. To identify the relation of maternal morbidity and mortality in relation to admission serum bilirubin level. 3. To assess fetal outcome by perinatal mortality and morbidity. 4. To identify the various etiologies and distribution of jaundice with reference to age, parity and trimesters.

Subjects and Methods: Fifty women with jaundice complicating pregnancy admitted and treated at Government Kilpauk Medical College Hospital, Chennai from September 2017 to August 2018 were studied. A detailed history including patient's age, socioeconomic status, booking, parity 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, 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.

Results: The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. According to this study incidence is 2/1000 deliveries. Singh reported 1.03/1000 incidence while Kamalajayaram and Rama Devi reported 0.4/1000 incidence.

Conclusion: According to this study the initial bilirubin level at admission > 10 is associated with poor maternal outcome and high maternal mortality.

Keywords: Bilirubin, jaundice & perinatal outcome

Introduction

The factors responsible for a high maternal mortality in our country may be poor nutrition and hygiene, prevalence of anemia, delay in seeking medical advice, and delay in referral to the hospital. Many of the patients when brought to the tertiary health care system are already in moribund condition and often, do not respond to treatment. The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. Jaundice in pregnancy carries a grave prognosis for both the mother and the fetus, and is responsible for 10% of maternal deaths. Liver disease in pregnancy is an important medical disorder seen more often in developing countries than in developed ones. High maternal mortality and morbidity in our country are due to many factors like Poor hygiene, inadequate sanitation, malnutrition, prevalence of anemia, delay in seeking medical advice, lack of awareness, and delay in referral to the higher centers. Many patients are brought in moribund condition to the hospital at admission itself and hence they do not respond to treatment. The prevalence of viral hepatitis in pregnancy can be reduced by creating public awareness, proper sanitation facilities, safe drinking water, immunization against viral hepatitis, improved antenatal care for early detection and well equipped hospitals for intensive care. Thereby, mortality and morbidity of jaundice complicating pregnancy can be decreased.

Aim

1. To analyze the maternal outcome in terms of mode of termination of pregnancy, maternal complications and mortality of jaundice complicating pregnancy.
2. To identify the relation of maternal morbidity and mortality in relation to admission serum bilirubin level.

- To assess fetal outcome by perinatal mortality and morbidity.
- To identify the various etiologies and distribution of jaundice with reference to age, parity and trimesters.

Subjects and Methods

Fifty women with jaundice complicating pregnancy admitted and treated at Government Kilpauk Medical College Hospital, Chennai from September 2017 to August 2018 were studied. A detailed history including patient’s age, socioeconomic status, booking, parity and details of menstrual history to arrive at the expected date of delivery was obtained.

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Table 1: Age Distribution

Age		Percentage
<20	12	24
21-25	30	60
26-30	6	12
31-35	1	2
36-40	1	2

Of the 50 women studied 60% were in 21 to 25 yrs of age. Mean age is 23 yrs.

Table 2: Trimester Distribution

Trimester	Total	Percentage
I	1	2
II	13	26
III	36	72

The occurrence of jaundice was high during third trimester. 72% were in third trimester.

Table 3: Parity Distribution

Parity		Percentage
Primi	25	50
G2	20	40
G3	3	6
G4	1	2
G5	1	2
Total	50	

Of the total 50 women studied, 50% were primigravida and 40% were second gravida.

Table 4: Pregnancy Outcome

	Total	Percentage
Delivered	43	86
Undelivered	7	14
Total	50	

43 out of 50 patients delivered (86%). 7 remained undelivered.

Table 5: Mode of Delivery

Mode Of Delivery		Percentage
Labour Natural	28	65.1
Outlet	1	2.3
Vbac	1	2.3
Cesarean	12	25.6
Spontaneous Expulsion	1	2.3
Total	43	

Of the 43 delivered, 28 was labour natural (65.1), 1 outlet, 1 VBAC, 12 LSCS (25.6%) and 1 spontaneous expulsion. 4 cases of atonic PPH was observed. 3 were following labour natural and one following outlet forceps delivery.

Table 6: Fetal Outcome

Fetal Outcome	Total	Percentage
Born Alive	38	86.4
Dead Born	5	11.4
Abortus	1	2.3

Of the 43 delivered, one was a twin delivery but only one baby survived. 86.4% born alive and 11.4% were intrauterine death. 52.3% were male babies and 47.4% were female babies. 68.2% were preterm babies and 29.5% were term babies.

Table 7: Level of Initial Bilirubin

Initial Bilirubin	Total	Percentage
<5	24	48
5-10	17	34
10-15	7	14
>15	2	4

Maternal mortality and morbidity was directly related to the initial level of serum bilirubin. Initial serum bilirubin level of > 13 lead to 50% mortality. About 34% of women had an initial serum bilirubin level of about 5 – 10 mg / dl. Keeping the initial bilirubin level at admission as 10 mg/dl, the maternal outcome was poor and high mortality rate was seen when the bilirubin level exceeds 10 mg/dl. It is statistically significant.

Table 8: Statistical Significance of Initial Bilirubin Level (using chi square test)

Bilirubin Level	Expired	Recovered	Total
A (<10)	1	40	41
B (>10)	2	7	9
Total	3	47	50

Chi square= 5. 121 P= 0.023 statistically significant.

From the probability table of X², probability (P) value is found to be around 0.023. Hence the difference in the recovery pattern between the two groups is statistically significant. Hence the initial bilirubin level at admission > 10 is associated with poor maternal outcome and high maternal mortality

Table 9: Hence The Initial Bilirubin Level At Admission > 10 Is Associated With Poor Maternal Outcome And High Maternal Mortality. Maternal Complications

Maternal Complications		Percentage
Hepatic Encephalopathy	5	28
Arf	5	28
Atonic Pph	4	22
Abruption	3	17
Dic	1	5

28% developed hepatic encephalopathy, 28% ARF, 22% atonic PPH, 17% abruption and 5% DIC.

Table 10: Birth Weight

Birth Weight		Percentage
<2.5	23	52.3
2.5 – 3.5	21	47.7
>3.5	-	

Maximum weight among the 44 babies was 3.5 kg

Discussion

The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. According to this study incidence is 2/1000 deliveries. Singh *et al.* [11] reported 1.03/1000 incidence while Kamalajayaram and Rama Devi [12] reported 0.4/1000 incidence. Jaundice occurring in pregnancy can be due to acute yellow atrophy of liver due to infective hepatitis of A, B, C, D or E type. Cholestatic jaundice is also common during pregnancy, in which serum bilirubin levels of up to 6 mg% are seen with either minimal or no increase in serum enzyme levels. It is associated with prematurity in 19.5% and a perinatal mortality rate of 30%. HELLP syndrome is present in 3-10% of preeclampsia. It is associated with weight gain and edema in 60%, maternal mortality of 20%, DIC in 4-38%, neonatal mortality rate of 31%, and rupture and hematoma of the liver in 2%.

According to this study percentage of maternal deaths due to jaundice amongst total maternal deaths is 6% which is nearly comparable with the study conducted by Sapre and Joshi.

Various studies also report jaundice as one of the major indirect cause of maternal death, responsible for 5 to 30% of all maternal deaths. Maternal deaths were directly proportional to the level of the serum bilirubin. Trivedi *et al.* also observed the same. According to this study the initial bilirubin level at admission > 10 is associated with poor maternal outcome and high maternal mortality.

Conclusion

Jaundice in pregnancy is associated with high maternal and perinatal mortality rates. Viral hepatitis is the leading cause of jaundice according to our study with hepatitis E being the predominant virus. Hepatic encephalopathy and renal failure are the two important maternal complications. Hepatic encephalopathy is the common cause of death according to our study. According to this study the initial bilirubin level at admission > 10 is associated with poor maternal outcome and high maternal mortality. The factors responsible for a high maternal mortality in our country may be poor nutrition and hygiene, prevalence of anemia, delay in seeking medical advice, and delay in referral to the hospital. Many of the patients when brought to the tertiary health care system are already in moribund condition and often, do not respond to treatment.

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