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ORIGINAL ARTICLE

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Fetomaternal outcome in jaundice during pregnancy

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OBJECTIVE(S) : To find out the effect of jaundice during pregnancy on fetomaternal outcome.

METHOD(S) : An analysis of fetomaternal outcome of 41 pregnant women admitted with jaundice during January 2002 to September 2003 is made.

RESULTS : Majority (80.55%) of the women were unbooked; 58.53% were from rural area and 95% were in their third trimester of pregnancy. Serum billirubin was > 10 mg in 48.48% of the women. SGOT, SGPT and alkaline phosphatase were raised in a majority of them. Out of 41 women, two aborted, 34 delivered and five remained undelivered. In 55.88% of women the onset of labor was spontaneous. 76.47% delivered vaginally. Perinatal mortality was 61.76% with 50%, stillbirths and 11.76% early neonatal deaths. 55.89% of women were discharged in improved condition. Four women were transferred to medicine department for further management and four left the hospital against medical advice. Maternal mortality was 30.3% (10/33) in the 33 patients who were managed in the department; 50% of them died within 24 hours, 20% on the second day and 20% on the third day of admission. Cause of death was hepatic encephalopathy with renal failure in 60%, disseminated intravascular coagulation in 20%, postparptum hemorrhage and congestivie cardiac failure associated with severe anemia in 10% each.

CONCLUSION(S) : Jaundice and pregnancy is a deadly combination resulting in a very high perinatal as well as maternal morbidity and mortality, and requires an early diagnosis and careful management.

Key words : jaundice in pregnancy, hepatitis in pregnancy

Introduction

Jaundice in pregnancy is an important medical disorder seen more often in developing countries than in developed ones. It could be peculiar to the pregnancy viz., acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy and jaundice complicating toxemia of pregnancy. It can be concurrent with pregnancy such as due to infective pathology like viral hepartitis or due to gallstones or it could be due to drugs administered during pregnancy. Jaundice in pregnancy carries a grave prognosis for both the fetus and the mother, and is responsible for 10% of maternal deaths. The present study analyzes the causes and the fetomaternal outcome in pregnancies affected with jaundice.

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Methods

Forty-one pregnant women were admitted with jaundice from January 2002 to September 2003.

A detailed history was taken and general, systemic and obstetric examinations were carried out. Investigations included liver function tests, serum billirubin, SGOT, SGPT, alkaline phosphatase, Australia antigen, prothrombin time (PT), partial thromboplastin time (PTT), bleeding time (BT), clotting time (CT) and platelet count which were carried out as and when required. Of the 41 women, 19 had cholestatic jaundice, 18 had infective hepatitis and four had HELLP syndrome. Diagnosis of cholestatic jaundice was based on clinical findings, serum bilirubin below 6mg%, moderately raised SGOT and SGPT, and alkaline phosphatase 2 to 3 times the normal. The maternal outcome was noted in terms of the mode of termination of pregnancy, maternal complications and maternal end result. Fetal outcome was assessed by perinatal morbidity and mortality, need for admission in nursery, and neonatal end result.

Results

During the period from January 2002 to September 2003, 7332 deliveries were conducted in the department. Forty-one pregnant women were admitted with jaundice during the period, giving an incidence of 0.55/1000 deliveries.

Of those 41 women, 80.55% (31/41) were unbooked and 58.53% (24/41) came from rural area. Seventy-eight percent of the women were either primigravidas or second gravidas. 89.02% (34/41) were between 20 and 30 years of age (29 were between 20 and 25 years and five between 26-30 years).

Ninety-five percent of the patients were in the third trimester of pregnancy, 7.29%, 29.29% and 58.52% being in the 7th, 8th and 9th month respectively. One had 3 months gestation and another one had 5 months gestation. Clinical presentation at the time of admission is given in Table 1 while the investigation findings are given in Table 2.

Pregnancy outcome

Thirty-four out of 41 patients delivered. Two patients with early pregnancy aborted, while five remained undelivered (Table 3). Of these five, two expired within one hour of admission, two improved and were discharged on the 9th day, and one went away against medical advice on the 2nd day. None of those last three were seen again. Of the two who expired, one was admitted at 36 weeks with convulsions, hepatic encephalopathy, anemia, edema, ascitis, and serum bilirubin of 20.2mg % while the other was admitted at 31 weeks with congestive cardiac failure (CCF) and serum bilirubin of 14 mg %.

Cause of death

Ten women died. Hepatic encephalopathy was present in 8 out of 10 women who died. Six women died of hepatorenal failure, two of disseminated intravascular coagulopathy (DIC), one of postpartum hemorrhage (PPH) with encephalopathy, and one of CCF with severe anemia and encephalopathy.

Relation with serum bilirubin level

Maternal mortality was directly related to the level of serum bilirubin as shown in Table 6. Fifty percent of the mortality occurred within one day of admission, 20% on the second day, 20% on the third day and one (10%) died on the 8th day of admission. Twenty-seven women were discharged in improved condition one was transferred to the medicine department and three left hospital against medical advice.

Table 1. Clinical presentation at the time of admission (n=41).

Clinical presentation	No.	Percent
Nausea	16	39.02
Vomiting	16	39.02
Loss of appetite	13	31.70
Yellow discoloration of urine	20	48.48
Hematemesis	01	48.48
Pain in abdomen	30	73.17
Pallor	41	100
Icterus	41	100
Hepatomegaly	3	7.31
Splenomegaly	2	4.87
Abdominal tenderness	6	14.63
Edema	18	3.90
Patechie	2	4.87
Vaginal bleeding	3	7.31
Preeclampsia	14	34.03
Shock	1	2.43

Table 2. Results of investigations (n=41).

Investigation	Number	Percent
Serum bilirubin		
< 10mg%	24	58.53
10-15mg%	9	21.95
15-20 mg%	7	17.07
> 20 mg%	1	02.43
SGOT and SGPT		
< 100 IU/mL	14	34.1
100 – 500 IU/mL	17	41.6
> 500-1000 IU/mL	07	17.03
> 1000 IU/mL	03	7.31
Alkaline phosphatase raised	19	46.34
Australia antigen positive	1	02.43

Table 3. Pregnancy outcome (n=41).

Outcome	No.	Percent
Mode of delivery	34/41	82-92%
Vaginal	28/34	58.00%
Forceps	02/34	14.00%
Cesarean section	04/34	28.00%
Undelivered	7/41	17.07%
Improved and discharged but no followup	02/41	4.88%
Left against medical advice	1/41	2.44
Expired undelivered	02/41	4.88
Aborted	02/41	4.88%

Table 4. Perinatal outcome (n=34).

Outcome	Number	Percent
Born alive	17/34	50
Stillborn	17/34	50
Early neonatal deaths	4/34	11.76
Total perinatal deaths	21/34	61.76
Admission to nursery required	7/17	41.1
Reason for nursery admission		
Prematurity	3/7	42.86
Birth asphyxia	3/7	42.86
Preterm with low birth weight and congenital malformation	1/7	14.28
Cause of neonatal death		
Severe birth asphyxia	2/4	50.00
Prematurity	2/4	50.00

Table 5. Maternal complications (n=41).

Complication	Number	Percent
Encephalopathy	11	26.73
Disseminated intravascular coagulation	9	21.88
Renal failure	8	19.45
Eclampsia	5	12.16
Shock	2	4.87
Postpartum hemorrhage	2	4.87
Pyrexia	2	4.87
Death	10	24.31

Table 6. Relation of maternal death to initial serum bilirubin level.

Initial serum bilirubin level	Number of deaths	Percent
< 10 mg% (n=24)	2	8.33
10-15 mg% (n=9)	2	22.22
15-20 mg% (n=7)	5	71.42
> 20 mg% (n=1)	1	100

Maternal mortality was directly related to the serum bilirubin level.

Table 7. Comparison with reported maternal deaths due to jaundice.

Authors	Year	Percentage of deaths due to jaundice amongst total maternal deaths
Kamalajayaram and Rama Devi [2]	1988	12.4
Rao and Rudra [5]	2001	15.8
Roychowdhary et al [6]	1990	13.37
Bera and Sengupta [4]	1992	19.9
Sapre and Joshi [7]	1999	04.99
Trivedi et al [8]	2003	29.3
Present study	2002-2003	14.4

Discussion

The incidence of jaundice in India varies from 0.4 to 0.9/1000 deliveries. Our incidence is 0.55/1000 deliveries. Singh et al [1] reported 1.03/1000 incidence while Kamalajayaram and Rama Devi [2] 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%. In our study, 51.2% of the cases had serum bilirubin levels of up to 6 mg% with minimal rise in enzyme levels. In these cases incidence of prematurity was 36.81% (7/19).

HELLP syndrome is present in 3-10% of preeclamptic toxemia. 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% [4]. In the present study, three women (12.3%) developed HELLP syndrome of whom one died; one had fresh stillbirth and two had macerated stillbirth.

Acute fatty liver during pregnancy usually occurs in the 3rd trimester. Preeclampsia is associated in 50-100% of cases. There is moderately increased liver enzyme level of <1000 IU/mL, bilirubin level of 1-10mg% and hypoglycemia. The maternal mortality is 18% while preterm labor is increased and the perinatal mortality is 23% [4]. We had four cases of acute fatty liver (10.25%) and half of them had preeclampsia.

Jaundice in pregnancy is associated with high maternal and perintal mortality rates. Our perinatal mortality rate was 61.76% (Table 6), and prematurity accounted for majority

of the deaths. High perinatal mortality rate of 45.45% was observed by Singh et al [1].

Our maternal mortality was 24.4% (10/41). A similar high mortality it reported by various authors. Kamalajayaram and Rama Devi [2] reported 33.3% maternal mortality and Singh et al [1] reported 10%. Hepatorenal failure, encephalopathy. DIC and postpartum hemorrhage were responsible for the deaths.

Jaundice in pregnancy accounted for 14.4% of the 69 maternal deaths that occurred in our department during the period of study. Various studies also report jaundice as one of the major indirect cause of maternal death, responsible for 5 to 30% of all maternal deaths [2,4-8] (Table 7). M aternal deaths were directly proportional to the level of the serum bilirubin. Trivedi et al [8] also observed the same. The factors responsible for a high maternal mortality in our country may be poor nutrition, prevalence of anemia, delay in seeking medical advice, and delay in referral to the hospital. Many of the patients when brought to the hospital are already in moribund condition and often, do not respond to treatment.

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