

Jaundice in Pregnancy: A Clinical Study at Fatima Memorial System

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ABSTRACT

Objective: The objective of the study is to find the effect of jaundice during pregnancy on fetomaternal outcome over a 10-year period at tertiary care hospital.

Materials and methods: An analysis of fetomaternal outcome of all case records with jaundice in pregnancy from January 2003 to December 2013 is made.

Results: The incidence of jaundice in our study is one in 278 pregnancies, with the disease more common in younger age group. Viral hepatitis found to be the commonest cause, HEV being the commonest with a high maternal and perinatal mortality. Obstetric cholestasis being the second most common followed by HELLP syndrome, AFLP and sepsis; Hepatorenal failure, encephalopathy, DIC and PPH were the main causes of maternal mortality.

Conclusion: Viral hepatitis is most prevalent cause of jaundice in pregnancy, associated with a high maternal and perinatal mortality and morbidity.

Keywords: Hepatitis in pregnancy, Jaundice in pregnancy, Viral hepatitis.

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INTRODUCTION

Jaundice in pregnancy provides both the hepatologist and the obstetrician with an interesting and urgent challenge as it is considered a high-risk pregnancy and carries a grave prognosis for both the fetus and the mother.

It complicates 3 to 5% of pregnancies and is one of the important causes of maternal and neonatal morbidity and mortality worldwide.¹ In developed countries, the incidence is around 0.1% whereas in developing countries it can range from 3 to 20% or higher.²

Jaundice can be unique to pregnancy (i.e. acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy and jaundice complicating toxemia of pregnancy and HELLP syndrome), exacerbated by pregnancy (i.e. viral hepatitis, due to gallstones or drug induced) or some pre-existing liver condition (i.e. chronic hepatitis, Wilson disease).³

Obstetric cholestasis is seen in second half of pregnancy, resolving after delivery. Recurrence in subsequent pregnancies is widely seen. Its incidence ranges from 0.1 to 1.5% of pregnancies compared with a much significant incidence in Scandinavia. Obstetric cholestasis has little contribution to maternal morbidity but it has important impact on fetal outcome. It can lead to chronic placental insufficiency, resulting in fetal complications that include anoxia, prematurity, perinatal death, fetal distress and even stillbirth.⁴

Acute fatty liver of pregnancy occurs in about one in 16,000 to 20,000 pregnancies usually in second or third trimester. Maternal mortality is up to 20% with a fetal mortality up to 23%.⁵

The primary hepatotropic viruses (hepatitis A, B, C and E virus) are the most common cause of acute liver disease. In developing countries, HEV and HBV infections is the most frequent cause of fulminant hepatic failure in pregnancy, with hepatitis E virus taking precedence with a maternal mortality ranging from 15 to 45%.⁶ It can have serious health implications in pregnant women including septicemia, PPH, DIC, hepatic encephalopathy and coma with high mortality. Fulminant hepatitis is more common in third trimester pregnant women with high maternal mortality ranging from 15 to 45%.

Fetal implications include risk of vertical transmission in HBV, 10% in first trimester to 90% in third trimester. Perinatal transmissions are also seen in hepatitis C infection. Where as in HEV the perinatal mortality is 51.5% that is high due to prematurity and sepsis.⁷

The number of patients in the last group is small as chronic liver disease is rare in women who are pregnant and bear children.⁸

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This study is aimed at determining pregnancy outcome of cases of jaundice in pregnancy over a 10-year period at Fatima Memorial Hospital.

MATERIALS AND METHODS

All case records of patients with jaundice in pregnancy over a 10-year period from January 2004 to December 2013 were retrieved from the medical records office of the hospital and analyzed.

Inclusion criteria included all women, booked or unbooked, who presented with recent onset of Jaundice.

History, general, systemic and obstetric examinations were reviewed.

Investigations including liver function tests, serum bilirubin, SGOT, SGPT, alkaline phosphatase, prothrombin time (PT), partial thromboplastin time (PTT), bleeding time (BT), clotting time (CT) and platelet count, Viral marker screening (A, B, C and E) and LDH were analyzed.

Diagnosis of cholestatic jaundice was based on history, clinical findings, serum bilirubin below 6 mg%, moderately raised SGOT and SGPT, and alkaline phosphatase 2 to 3 times the normal.

Criteria for diagnosing severe/fulminant hepatitis included: the above-mentioned parameters with the presence of hepatic encephalopathy.

The maternal outcome was noted in terms of maternal complications and maternal end result.

Fetal outcome was assessed by, need for admission in nursery and perinatal morbidity and mortality.

RESULTS

Table 1: Jaundice in pregnancy (n = 239)

Causes of jaundice	Number	Percentage
Viral hepatitis A	39	16.31
Viral hepatitis B	9	3.76
Viral hepatitis C	8	3.34
Viral hepatitis E	66	27.6
Sepsis	2	0.83
HELLP	28	11.71
Obstetric cholestasis	81	33.89
AFLP	3	1.25

Table 2: Results of investigations (n = 239)

Investigations	Number	Percentage
<i>Serum bilirubin</i>		
< 10 mg%	193	80.5
10-15 mg%	23	9.6
15-20 mg%	14	5.8
> 20 mg%	9	3.76
<i>SGOT and SGPT</i>		
< 100 IU/ml	5	2.09
100-500 IU/ml	74	30.9
> 500-1000 IU/ml	94	39.3
> 1000 IU/ml	66	27.6

Table 3: Pregnancy outcome (n = 239)

Outcome	Number	Percentage
<i>Mode of delivery</i>		
Vaginal	144	73.4
Forceps	6	3.06
Cesarean section	46	23.4
<i>Undelivered</i>		
Improved	29	12.13
Left against medical advice	8	3.34
Expired undelivered	2	0.83
Expired after delivery	15	6.27
Miscarriage	4	1.67

Table 4: Perinatal outcome (n = 196)

Perinatal outcome	Number	Percentage
Term deliveries	90	50.8
Preterm deliveries	89	50.28
Born alive	179	90.3
Intrauterine death	21	10.7
Early neonatal deaths	25	234/1000 deliveries
<i>Cause of death</i>		
Prematurity	23	11.7
Birth asphyxia	2	1.02

Table 5: Maternal complications (n = 196)

Maternal complications	Number	Percentage
Renal failure	12	5.02
DIC	49	20.76
Eclampsia	4	1.68
Shock	5	2.09
Pyrexia	3	1.25
Postpartum hemorrhage	27	11.29
Encephalopathy	11	4.6
Death	17	7.11

During the period from January 2003 to December 2013, 66,460 deliveries were conducted in the department (Table 1). Two hundred thirty nine pregnant women were admitted with jaundice during this period, giving an incidence of 0.35/1000 deliveries. Of those 239 women, 57.7% (138/239) were unbooked and 42.2% (101/239) were our booked patients. Most of the unbooked patients were referred being a tertiary care hospital. 71.02% were between 20 and 30 years of age and 28.98% were between 30 and 40 years of age.

PREGNANCY OUTCOME

Out of 239 patients 196 delivered, four patients (1.67%) had miscarriage, two patients (0.83%) expired undelivered in second and third trimester, twenty nine patients (12.13%) improved and were discharged but later on were lost for follow-up. Eight (3.34%) left against medical advice and two (0.83%) expired undelivered and 15 (6.27%) after delivery within 5 days postpartum (Table 3). There were 17 mortalities, fifteen women died after delivery and two

expired undelivered. Two women who died undelivered, one was with sepsis and one had eclampsia with end organ damage (HELLP). Patients who delivered after delivery, 3 had HELLP, 3 cases of AFLP and 9 died with fulminant hepatic failure due to hepatitis E (Table 5).

Maternal mortality was directly related to the level of serum bilirubin (Table 2).

51.53% of the patients were delivered at term and out of which 83% were cases of obstetric cholestasis. 48.47% delivered preterm out of which 38.6% were iatrogenic preterm deliveries due to obstetric cholestasis and HELLP syndrome (Table 4).

Cause of Death

Hepatorenal failure, encephalopathy, DIC and PPH were the main causes of maternal mortality.

DISCUSSION

The incidence of Jaundice in our study is one in 278 or 0.359 per 1000, compared to reported incidence of one in 700 in technical bulletin of ACOG and 0.4 per thousand in India.³ The incidence is high as compared to US but similar to India and this because of poor sanitation, low socioeconomic conditions and receiving referrals from Basic and District health units, being a tertiary care hospital.

The common causes of jaundice in pregnancy in our study were viral hepatitis (51.02%), intrahepatic cholestasis of pregnancy (33.89%), HELLP syndrome (12.13%), acute fatty liver of pregnancy (1.25%) and then sepsis (0.84%).

Hepatitis E was the most prevalent followed by hepatitis A of all the viral hepatitis. The course of viral hepatitis remains unaltered during pregnancy except for the hepatitis E, which has a fulminant course during pregnancy. Maternal mortality due to hepatitis E is 52.9% in our study, where as compared to 20 and 30% in a study conducted by Reyes and Sims.^{9,10}

Hepatitis E is endemic in most developing countries, where it causes major epidemics and sporadic cases.¹¹

Several outbreaks have been reported from South Asia, Middle East, Northern Africa and Central Asia. Outbreaks usually occur after rainy seasons, flooding and recession of floodwaters. They have also been associated with poor hygiene and unsafe water supplies. An epidemic of hepatitis E infecting 3.827 people occurred in Islamabad after a water treatment plant broke down.¹²

Rising trend in hepatitis E is due to poor sanitation also drinking and eating unhygienic food. This has been the leading cause of indirect mortality. In HEV outbreaks, as in other fecal and orally transmitted infec-

tion outbreaks, the provision of clean drinking water and improving the sanitary disposal of human waste are the two most important preventive approaches. There are challenges in implementing such strategies in a timely manner in areas where such epidemics occur.

The incidence of hepatitis A in our study was one in 1704, which is less than one in 1000 as reported by Schorr LB et al, but more frequent to one in 3590 as reported by Naeema Acharya.³

We received only 9 cases of acute hepatitis B with HBe Ag positive and eight cases of hepatitis C.

Intrahepatic cholestasis is found to be the second common cause of jaundice in pregnancy presenting with pruritus as a chief complaint. No maternal mortality found in our as compared to 2% as found by Fisk et al.¹³

There are 29 cases of HELLP syndrome and three cases of AFLP with established complications were received.

The perinatal mortality rate is 222 per thousand with 48% premature deliveries, rate similar to as reported by Fisk, 22 to 44%.¹³

Maternal mortality rate is 25.6 per 100,000 in our study. Out of 17 mortalities four had HELLP, three cases of AFLP, 1 had sepsis and nine died with fulminant hepatic failure due to hepatitis E. Hepatorenal failure, encephalopathy, DIC and PPH were the main causes of maternal mortality. Maternal deaths were directly proportional to the level of serum bilirubin as observed by Trivedi et al in his study.¹⁴

The possible modifiable factors for maternal mortality in our country include high prevalence of anemias, poor nutrition, and sanitation, high index of suspicion, early recognition and delay in referrals. It is very sad to see young women dying of HELLP syndrome and of acute hepatitis E, a leading cause of indirect mortality, which are still a problem for third world countries.

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