

Causes and Consequences of Jaundice in Pregnancy

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ABSTRACT

Background: Jaundice in pregnancy is an alarming condition not only for the woman but also for healthcare providers. The major causes are viral hepatitis and hypertensive diseases of pregnancy. These causes are preventable and can be controlled respectively with proper antenatal counseling and management.

Objective: To determine causes and fetomaternal outcomes in pregnancies with jaundice.

Design: Observational study

Setting: Sir Ganga Ram hospital, Lahore. Pakistan.

Duration: From January 2008 to December 2015

Method: All pregnant women presenting with jaundice in pregnancy were enrolled in the study. The causes, maternal mortality, medical and obstetrical complications and fetal outcomes were noted. Data was collected on pretested Proforma.

Results: Data of 252 patients was collected and analyzed. The major cause of jaundice was viral hepatitis (74%) and out of these 66% were due to hepatitis E virus. Maternal mortality (33%) and fulminant hepatic failure (7%) were more common in this group. The second most common cause was hypertensive diseases of pregnancy (18%) and maternal mortality in this group was 17%. Obstetrical complications noted in patients with hepatitis E were: Antepartum haemorrhage (5.4%), postpartum haemorrhage (24%), preterm delivery (63%) and IUFD (28%). Medical complications observed in this group were: DIC (22%), sepsis (11%), gastrointestinal haemorrhage (4.5%). Acute fatty liver of pregnancy was diagnosed in three patients. One patient had cholestasis of pregnancy and one had malignant tumor of the liver.

Conclusion: Pregnant women with jaundice and especially acute viral hepatitis by HEV infection had high maternal mortality and worse medical, obstetrical and fetal outcomes.

Key words: Jaundice, pregnancy, hepatitis

BACKGROUND

Jaundice in pregnancy can present with benign to fatal clinical course. It is not just the raised bilirubin but the associated liver dysfunction that threatens the life of mother and her child. It adds to the burden of maternal mortality not only by increasing the incidence of disseminated intravascular coagulation (DIC) but also through development of acute liver failure causing encephalopathy.

The causes include viral hepatitis, hypertensive disorders and acute fatty liver of pregnancy. Viral hepatitis which is a preventable cause, not only complicates the maternal health but the infected mother can transmit the virus to her fetus or neonate which may increase the disease burden. The most common cause of jaundice in pregnancy that presents in a tertiary care hospital in our part of the world is Hepatitis E

virus which is responsible for about 80.4% of pregnancy with jaundice cases.¹ The prevalence of HEV in Karachi was 57% among pregnant women with jaundice.²

Hypertensive diseases of pregnancy including pre-eclampsia, eclampsia and HELLP syndrome can present with jaundice and deranged liver function tests. Other complications include acute renal failure and abruptio placentae³ but DIC is the most frequent cause of maternal mortality in HELLP syndrome.

Acute fatty liver of pregnancy also presents with jaundice and has maternal mortality as high as 11.4%.⁴ Intra hepatic cholestasis in which fetus is more at risk, usually presents with pruritis but almost half of the patients also develop jaundice later on.⁵

The magnitude of this problem is not fully assessed in Pakistan even though it contributes to fetomaternal morbidity and mortality. Most cases can be prevented if its significance is manifested through better evidence. We conducted the study to better understand how jaundice in pregnancy affects the mother and her child. This evidence will enable us incounselling with conviction, toemphasize the importance of prevention and justify early intervention.

OBJECTIVE

To determine causes and fetomaternal outcome in pregnancies with jaundice.

Design: Observational study

Setting: Sir Ganga Ram hospital, Lahore. Pakistan.

Duration: From January 2008 to December 2015

METHOD

All pregnant women presenting with jaundice in pregnancy were enrolled in the study after informed consent. A clinical history was taken and physical examination conducted on all patients. The causes, maternal mortality and medical complications were noted. Obstetrical complications and fetal outcomes were also measured. Data was collected on pretested structured proforma.

RESULTS

Data of 252 patients was collected and analyzed. Primigravidas were most frequently affected: 62% in viral hepatitis and 68% in hypertensive disorders of pregnancy. Mean age of patients was 24.5 years in viral hepatitis and 21 years in hypertensive disorders. The mean gestational age at presentation was 34 weeks in viral hepatitis and 32 weeks in hypertensive disorders of pregnancy.

The major cause of jaundice was viral hepatitis (74%). Among this group, 66% were due to hepatitis E virus, 13% due to hepatitis A virus, , 6% had hepatitis C , 5% had hepatitis B, while 10% had both hepatitis B and C virus . Maternal mortality (33%) and fulminant hepatic failure (7%) were more common in HEV group. Other medical complications in HEV were DIC (22%), sepsis (11%) and gastrointestinal haemorrhage (4.5%). Obstetrical complications seen in HEV patients were: Antepartum haemorrhage (5.4%), postpartum haemorrhage (24%), preterm delivery (63%), intrauterine fetal death IUFD (28%) and intrauterine growth restriction IUGR (4%).

The second most common cause of jaundice was hypertensive diseases of pregnancy (18%) and maternal mortality in this group was 17%.HELLP syndrome while affected 44% of hypertensive patients, 10% had cerebrovascular accident (CVA),8% had DIC, 4% suffered renal failure and 3% developed sepsis. Obstetric complications in this group included: Antepartum haemorrhage (12%), postpartum haemorrhage (18%), preterm delivery (46%), IUFD (21%) and IUGR (38%).

Acute fatty liver of pregnancy was diagnosed in three patients and lives of those patient could not be saved. One patient had cholestasis of pregnancy and one had malignant tumor of the liver. In 5-6% no cause could not be diagnosed.

Percentage of causes of jaundice in pregnancy

1	Viral Hepatitis	74
i.	Hepatitis E virus	66
i.	Hepatitis A virus	13
i.	Hepatitis B and C virus	10
v.	Hepatitis C virus	6
v.	Hepatitis B virus	5
2	Hypertensive disorders	18

Percentage of obstetrical complications

Complication	Hepatitis EVirus	Hypertensive disorders
Maternal mortality	33	17
Antepartum haemorrhage	5.4	12
Postpartum haemorrhage	24	18
Preterm delivery	63	46
IUFD	28	21
IUGR	4	38

Percentage of Medical complications in HEV infection

DIC	22
Sepsis	11
Fulminant hepatic failure	7
GIT haemorrhage	4.5

Percentage of Medical complications in Hypertensive disorders

HELLP syndrome	44
CVA	10
DIC	8
Renal failure	4
Sepsis	3

DISCUSSION

The mean age of patients in viral hepatitis was 24.5 years and 62% were primigravidas in our study which is comparable to a study by Shinde N et al⁶ that showed mean age as 24.1 years and 71.1% affected patients as primigravidas. This shows that younger women and first pregnancy are more at risk, emphasizing the need to impart knowledge about food and personal hygiene during prenatal and antenatal period to all women, especially first time mothers who would otherwise have lesser information than the more experienced multigravidas.

In our study viral hepatitis was the most frequent cause of jaundice in pregnancy (74%) with HEV infection affecting 66% among this group. It is comparable to another study conducted in a tertiary care hospital in Bangladesh that showed HEV responsible in 80.4% cases of jaundice in pregnancy.¹ While in Karachi the prevalence was 57% in pregnancy with jaundice women² It is a health problem that is potentially fatal in pregnant women. Investing in preventive measures is not only cost effective but can help reduce the associated morbidity and mortality since there is no definite treatment available.

Hepatitis B and C infection affected 5% and 6% of this group respectively probably because these are chronic infections that present with deranged liver function tests while jaundice is a feature of the acute phase of disease. Similarly cholestasis of pregnancy was the cause of jaundice in only one patient as its main presenting feature is pruritis. Jaundice in this condition is mild and presents in about half of the patients only after few weeks, as found in a study by Maev IV et al⁵.

Maternal mortality was highest in HEV group (33%). This is comparable to a study conducted in Lahore (20%).⁷ DIC that affected 22% cases was a major contributing factor. It requires intensive monitoring and aggressive treatment with FFP and platelets, which if transfused early can effectively reduce the proportion of patients that develop PPH (24%) and compounded the effect of coagulopathy.

Hepatic encephalopathy that signaled fulminant hepatic failure, developed in 7% of our HEV patients while in a study by Sahai S, Kiran R⁸ 70.3% of cases were complicated by it. This is a particularly life threatening complication and the patient's condition deteriorates rapidly without much time left to intervene. Thus prevention remains the ideal strategy to save the mother.

The second commonest cause was hypertensive disorders of pregnancy (18%). Highest number of patients developed HELLP syndrome (44%) in this group. Complications in this group are associated with quite high mortality which in our study was 17%. This may be avoided by expediting early delivery as in most cases liver functions improve rapidly in postpartum period⁹. Careful monitoring and early detection of complications are the key to reduce long term morbidity associated with renal failure and CVA. The associated DIC led to postpartum haemorrhage in 18% patients. This also exposes the patients to multiple blood transfusions and its associated risks.

Fetal outcome in jaundice in pregnancy is affected both by the disease course and its management. The percentage of preterm deliveries in HEV was 63% in our study. While in another study in Lahore 86% babies of the 84% babies born alive were preterm.⁷ Its reason was both spontaneous onset as well as iatrogenic. The main reason to induce an early labour was to save the mother from developing potentially fatal DIC and hepatic encephalopathy since postpartum period may help resolve the liver dysfunction. Postpartum haemorrhage can be more effectively avoided/treated in the absence of coagulopathy. The choice of not performing LSCS for fetal indications during the acute phase of disease, when coagulopathy was not completely corrected, helped in avoiding maternal death due to PPH at the cost of increasing the percentage of fetal death (28%). This finding is comparable to another study in Lahore that has perinatal mortality rate as 26%.⁷

On the other hand in hypertensive disorders, preterm delivery occurred in 18%. It was mainly iatrogenic since the only established treatment is delivery of fetus and placenta. Intrauterine growth restriction is more pronounced in hypertensive disorders (38%) than HEV infection (4%). Although it adds to the burden of preterm deliveries, this early intervention helps save the fetus from intrauterine fetal death that in our study was 21% in this group.

CONCLUSION

HEV infection in pregnancy had highest maternal mortality among all the causes. Preterm delivery and postpartum haemorrhage was the most frequently noted obstetrical complication in this group. In Hypertensive disorders of pregnancy most common obstetrical complication was

preterm delivery and IUGR. Among Medical complications DIC was seen most commonly in HEV infection while HELLP syndrome took the lead in hypertensive disorders.

RECOMMENDATIONS

Viral hepatitis especially acute viral hepatitis by HEV infection is a preventable cause and responsibility not only lies with the health care providers but also with the family, government and society at large. Further research is also needed to determine how to prevent the adverse outcomes. Additional data is required to establish efficacy of HEV vaccination in pregnancy.¹⁰Hypertensive disorders can be monitored vigilantly to detect the complications and perform timely intervention. Educating patients and families about the danger signs in pregnancy during prenatal and antenatal period can be an effective preventive strategy to reduce associated morbidity and mortality. Early detection, vigilant monitoring and timely intervention can help reduce fetomaternal mortality and morbidity in most cases of jaundice in pregnancy, thus making it a realistic milestone in improving mother and child health care.

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