



Clinical Profile, Laboratory Parameters & Complications in Pregnancy with Jaundice: A Study in DMCH, Dhaka, Bangladesh

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Abstract

Background: Pregnancy with jaundice is considered a high-risk pregnancy. It is the most usual health complaint in pregnant women found more often in developing countries than in developed ones. Jaundice can be concurrent with 1st trimester due to pathological infection for instance viral hepatitis or gall stones or due to the drug administered during pregnancy. These patients may feel better if initial diagnosis and suitable management are provided. This present study intended to evaluate the clinical profile & complications of jaundice during pregnancy. **Material & Methods:** This descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital, Dhaka, Bangladesh from January 2012 to June 2012. A total (N=50) of pregnant women with symptoms of jaundice were enrolled in the study. Completed data forms were reviewed, edited, and processed for computer data entry. The data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 16.0. Descriptive inferential statistics were performed to determine the results of this study. **Results:** Among the study population (N=50), the majority of patients (34, 68.0%) age were between 20 to 24 years. The mean gestational age of patients was 35.3±3.2 weeks and twelve patients (12, 24.0%) underwent caesarean delivery. Based on clinical features, twenty-seven respondents (27, 54.0%) had mild jaundice, fourteen respondents (14, 28.0%) had moderate jaundice & about one-fifth of the patients (9, 18.0%) had severe jaundice. Fifteen pregnant (15, 30.0%) women had a fever, around two-fifth of the patients (19, 38.0%) had vomiting, pruritus in one patient (1, 2.0%), vaginal bleeding in twelve patients (12, 24.05), & more than half of the patients (27, 54.0%) had ruptured membrane. The causes of jaundice during pregnancy were viral hepatitis in forty-three patients (43, 86.0%). The majority of the patients (27, 54.0%) had serum bilirubin less than 10mg, fourteen patients (14, 28.0%) had 10 to 15mg of serum bilirubin & only one patient (1, 2.0%) had serum bilirubin more than 20mg. SGOT & SGPT was found 100-500 IU/ml in twenty-three patients (23, 46.0%) & 500-1000 IU/ml in ten patients (10, 20.0%). Alkaline was raised in eighteen cases (18, 36.0%) Based on maternal complications, the majority of patients (31, 62.0%) had a postpartum haemorrhage, and ten patients (10, 20.0%) experienced encephalopathy. Thirty-eight babies (38, 76.0%) were born alive, intrauterine death was in seven cases (7, 14.0%), and stillborn in five cases (5, 10.0%). **Conclusion:** Hepatitis E was the most common cause of viral hepatitis in our study. Major complications were postpartum haemorrhage and encephalopathy. This study also prevailed, jaundice in pregnancy is related to an increase in maternal mortality and morbidity, obstetric complications, and perinatal complications.

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INTRODUCTION

Jaundice during pregnancy is comparatively unusual, though has possibly severe concerns for maternal and fetal health.^[1] Pregnancy with jaundice is considered a high-risk pregnancy. It is the most common medical complaint in pregnant women seen more often in developing countries than in developed ones.^[2] Clinical jaundice is established when serum bilirubin level exceeds 2 mg% (normal 0.2 to 0.8). Almost 3-5% of pregnant women have abnormal liver function tests and Jaundice during pregnancy.^[3] Jaundice can be simultaneous with 1st trimester due to infectious pathology for example viral hepatitis or gall stones or due to the drug administered during pregnancy.^[4] Jaundice in pregnancy brings a crucial prognosis for both mother and fetus and is accountable for 12% of maternal deaths.^[5] Due to viral hepatitis, co-infection with Hepatitis A, B, and C viruses is quite common. In pregnancy, the Hepatitis E virus is the most common and essential reason behind acute clinical hepatitis.^[6,7] Liver disease in pregnant women includes a range of diseases encountered during the gestational period and the postnatal period that result in abdominal liver function tests, hepatobiliary dysfunction, or both.^[8,9] Pregnant women are at high threat of developing serious hepatitis E and they may also experience worsening of known chronic liver disease.^[10] Acute fatty liver pregnancy occurs in approximately 1 in 13,000 pregnancies. More than 90% of patients with acute fatty liver during pregnancy have jaundice and disseminated intravascular coagulopathy.^[11] Severe preeclampsia is complex in 2%-12% of cases (0.2%-0.6% of all pregnancies) by hemolysis (H), elevated liver enzymes (EL), and low platelet count (LP) – the

HELLP syndrome.^[12] Serum bilirubin above 15mg% and SGPT above 1000 KA units frequently cause poor diagnosis.^[13] The various maternal complications associated with viral hepatitis are preterm labour, obstetric haemorrhage, fulminant hepatitis, hepatic encephalopathy, renal failure, DIC, and ultimately death.^[14,15] Hepatitis E and Hepatitis B infections were the utmost common cause of fulminant hepatic failure in pregnancy.^[16] As far as developing countries like India are concerned, Hepatitis E is the most common reason for hepatic failure.^[17] Fulminant hepatitis was seen in a high percentage of third-trimester pregnant women with a high maternal mortality of as high as 20%.^[18] Jaundice has potentially serious consequences which may prove fatal to the mother and fetus. These patients may have better if early diagnosis and appropriate management are given. This current study intended to evaluate the clinical profile & complications of jaundice during pregnancy.

Objectives

To evaluate the clinical profile, laboratory parameters & complications of jaundice during pregnancy.

Specific Objectives

- To identify different aetiological agents responsible for jaundice in pregnancy.
- To assess the socio-demographic status of the study subjects during pregnancy.

MATERIAL AND METHODS

This descriptive cross-sectional study was conducted in the Department of Obstetrics and Gynecology, Dhaka Medical College Hospital,

Dhaka, Bangladesh from January 2012 to June 2012. Fifty pregnant women (N=50) beyond the gestational age of 28 weeks with recent onset of jaundice were included in this study. The purposive sampling technique was followed. After the selection of the patient informed consent was taken from the patients and each patient was interviewed using the structured questionnaire containing socio-demographic and other relevant information. A detailed history was taken; and general, systemic, and obstetric examinations were carried out. Investigations included 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 which were carried out as and when required. Acute viral hepatitis was diagnosed (7) by a serum bilirubin level of 34 mol/L or greater (2 mg/dL); a serum alanine aminotransferase level 2.5 times the upper limit of normal or greater; and positivity for any hepatotropic virus by using the following serologic tests: hepatitis B surface antigen (HBsAg); antibody to hepatitis C virus (IgM Anti HCV); and IgM antibodies to hepatitis A virus (IgM Anti HAV), hepatitis B core antigen, hepatitis delta virus, and IgM antibodies to hepatitis E virus (IgM Anti HEV). 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. Clinical evidence of other causes of jaundice (such as biliary obstruction, HELLP syndrome [hemolytic anaemia, elevated liver enzyme level, low platelet count, acute fatty liver of pregnancy, hemolytic jaundice, and drug-induced jaundice) were also recorded. Relevant information from history, clinical

examinations, and investigations were recorded in a predesigned data collection sheet. Ethical clearance was taken from the hospital. Verbal consent was taken from all the participants before starting data collection. Completed data forms were reviewed, edited, and processed for computer data entry. The data analysis was performed using Statistical Package for the Social Sciences (SPSS) Version 16.0. Descriptive inferential statistics were performed to determine the results of this study. The inclusion and exclusion criteria were as follows:

Inclusion Criteria

- All pregnant women with jaundice beyond the gestational age of 28 weeks and in different stages of labor
- Patients are willing to participate in the study.
- Recent onset of jaundice.

Exclusion Criteria

- Patients having gestational age less than 28 weeks
- Prevalence of any chronic diseases or previous history of jaundice.

RESULTS

Among the study population (N=50), the majority of patients (34, 68.0%) age was between 20 to 24 years. Thirty-one patients (31, 62.0%) were primigravida, & around one-fourth of the patients (13, 26.0%) were 2nd gravida. The mean gestational age of patients was 35.3±3.2 weeks. There were twenty-three patients (23, 46.0%) in the gestational age group of 32-<37 weeks, & around two-fifth of the patients (19, 38.0%) in the gestational age group of 37-<40 weeks. Thirty-three patients (33, 66.0%) did not receive

antenatal care. Twenty-two patients were very poor and their monthly income was 3000 to 5000 BDT & fifteen patients (15,30.0%) came from a lower middle-class family and their monthly income was 5000 to 10,000 BDT. Around three-fourths of the patients (58,76.0%) underwent normal delivery and twelve patients (12,24.0%) underwent caesarean delivery [Table 1]. Based on clinical features, twenty-seven respondents (27,54.0%) had mild jaundice, fourteen respondents (14,28.0%) had moderate jaundice & about one-fifth of the patients (9,18.0%) had severe jaundice. Fifteen pregnant (15,30.0%) women had a fever, around two-fifth of the patients (19,38.0%) had vomiting, pruritus in one patient (1,2.0%), vaginal bleeding in twelve patients (12,24.05), & more than half of the patients (27,54.0%) had ruptured membrane [Table 2]. The causes of jaundice during pregnancy were viral hepatitis in forty-three patients (43,86.0%) & of them, around fourteen (14,32.5%) were affected by hepatitis B, and around three-fifth of the patients (26,60.5%) were affected by hepatitis E. HELLP syndrome was found in four patients (4,8.0%) & three patients (3,6.0%) had cholesterol during pregnancy [Table 3]. The majority of the patients (27,54.0%) had serum bilirubin less than 10mg, fourteen patients (14,28.0%) had 10 to 15mg of serum bilirubin & only one patient

(1,2.0%) had serum bilirubin more than 20mg. SGOT & SGPT was found 100-500 IU/ml in twenty-three patients (23,46.0%) & 500-1000 IU/ml in ten patients (10,20.0%). Alkaline was raised in eighteen cases (18,36.0%) [Table 4]. Based on maternal complications, the majority of patients (31,62.0%) had a postpartum haemorrhage, ten patients (10,20.0%) experienced encephalopathy, two patients (2,4.0%) experienced renal failure, & seven patients (7,14.0%) died. Thirty-eight babies (38, 76.0%) were born alive, intrauterine death was in seven cases (7, 14.0%) and stillborn in five cases (5, 10.0%) [Table 5].

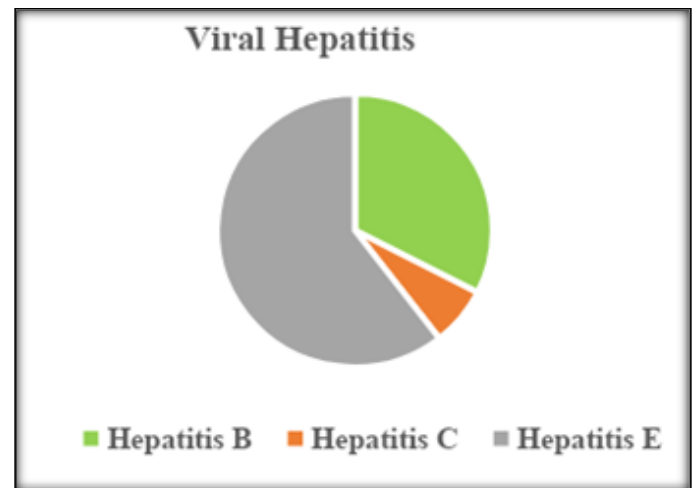


Figure 1: Pie chart showing the causes of Viral Hepatitis (N=50).

Table 1: Distribution of the study population based on base line characteristics (N=50).

Characteristics	(N,%)
Age Mean age: 22.4±2.9	
15-19	8,16.0%
20-24	34,68.0%
25-29	5,10.0%
30-34	3,6.0%
Parity	
Primigravida	31,62.0%



2nd gravida	13,26.0%
3rd gravida	4,8.0%
4th gravida	2,4.0%
Gestational Age Mean gestational age: 35.3±3.2	
28-<32	8,16.0%
32-<37	23,46.0%
37-<40	19,38.0%
Antenatal Care (ANC)	
ANC	17,34.0%
No ANC	33,66.0%
Socio-economic status	
Very poor (3000-5000)	22,44.0%
Lower middle class (5000-10,000)	15,30.0%
Middle class (10,000-15,000)	9,18.0%
Higher middle class (15,000-30,000)	4,8.0%
Mode of delivery	
Normal delivery	38,76.0%
Caesarean delivery	12,24.0%

Table 2: Distribution of the study population based on clinical features (N=50).

Clinical features	(N,%)
Jaundice	
Mild	27,54.0%
Moderate	14,28.0%
Severe	9,18.0%
Fever	15,30.0%
Vomiting	19,38.0%
Abdominal Pain	41,82.0%
Pruritus	1,2.0%
Preeclampsia	4,8.0%
Disoriented	13,26.0%
Unconscious	3,6.0%
Vaginal bleeding	12,24.0%
Less or no fetal movement	21,42.0%
Rupture of membrane	27,54.0%

Table 3: Distribution of the study population based on Cause of jaundice (N=50).

Cause of jaundice	(N,%)
Viral Hepatitis	43,86.0%
Hepatitis A	0,0.0%
Hepatitis B	14,32.5%



Hepatitis C	3,7.0%
Hepatitis E	26,60.5%
HELLP syndrome	4,8.0%
Cholestasis in pregnancy	3,6.0%

Table 4: Distribution of the study population based on Bio-chemical marker (N=50).

Bio-chemical marker	(N,%)
Serum Bilirubin	
<10mg	27,54.0%
10-15mg	14,28.0%
15-20mg	8,16.0%
>20mg	1,2.0%
SGOT and SGPT	
<100 IU/ml	17,34.0%
100-500 IU/ml	23,46.0%
500-1000 IU/ml	10,20.0%
Alkaline phosphate raised	18,36.0%

Table 5: Distribution of the study population based on Maternal, & Fetal complications (N=50).

Maternal complications	(N, %)
Encephalopathy	10,20.0
Disseminated intravascular coagulation	1,2.0
Renal failure	2,4.0
Postpartum hemorrhage	31,62.0
Eclampsia	4,8.0
Shock	2,4.0
Death	7,14.0
Fetal complications	
Born alive	38,76.0
Intrauterine death	7,14.0
Still born	5,10.0

DISCUSSION

Jaundice in pregnancy in most cases is mild and can be prevented efficaciously. However, in certain cases of pre-eclampsia or HELLP, it can be related to critical results in the mother and neonates depending on the severity of liver damage.^[19] This descriptive cross-sectional study was carried out in the Department of

Obstetrics and Gynecology, Dhaka Medical College Hospital, Dhaka, Bangladesh from January 2012 to June 2012 to find out the clinical profile and complications of jaundice during pregnancy. In this study, the mean age of pregnant women with jaundice was 22.4 ± 2.9 years. This result was supported by another study based on pregnant women with jaundice found that the mean age was 24.78 years.^[20]



Another related study conducted in Nigeria found the mean age of the expectant mother was 30.5 years.^[21] The majority of patients (34,68.0%) age was between 20 to 24 years in this present study. A similar study carried out in India described that most of the women (75.7%) belonged to the age group of 21 to 30 years.^[20] Another related study showed that around 74% of patients were between 20 to 29 years of age.^[22] The authors stated that most of the patients (80.3%) were from 20 to 30 years of age.^[23] In our study, the majority of the patients (31,62.0%) were primigravida. Another similar study supported our findings.^[20] The mean gestational age of patients was 35.3±SD in the present study. A similar Nigerian study found that the mean gestational age of patients was 30 weeks.^[24] A related analysis demonstrated in KLE's Dr. Prabhakar Kore Hospital and Research Centre found the mean gestational age of patients was 34.7 weeks.^[20] In the current study, the majority of the patients (66.0%) did not receive antenatal care, and only (34%) received antenatal care. A contradictory study carried out in Khammouane and Champasack provinces found that the majority of the women claimed to have attended antenatal care, but participants also explained that it was unnecessary to attend antenatal care.^[25] In this present series, most of the patients' economic status was poor. A related finding demonstrated in Ghana found that the majority of patients were poor.^[26] Low socioeconomic status is found in Mexican women.^[27] Another article supported the above findings.^[28] Most of the patients in this current analysis underwent normal delivery. Another related article found that the mode of delivery among 70% of the women was normal vaginal delivery though 30% of women delivered prematurely.^[29] A

more recent meta-analysis revealed that a 17.5% absolute risk reduction with caesarean section in contrast with normal vaginal delivery.^[30] In this current analysis, twenty-seven respondents (27,54.0%) had mild jaundice, fourteen respondents (14,28.0%) had moderate jaundice & about one-fifth of the patients (9,18.0%) had severe jaundice. Another similar article found that most of the patients had mild jaundice.^[31,32] In this current content, pruritus was seen in one patient (1,2.0%). A contradictory study suggested that most of the cases of pruritus were mild but some could be severe.^[33] In this current analysis, more than half of the patients (27,54.0%) had ruptured membranes. Another related article suggested that 18% of patients had ruptured membranes.^[34] The causes of jaundice during pregnancy were viral hepatitis in forty-three patients (43,86.0%) & of them, fourteen (14,32.5%) were affected by hepatitis B, and around three-fifth of the patients (26,60.5%) were affected by hepatitis E. Another relevant article revealed that of 30 pregnant women with hepatitis E viral infection, a case fatality ratio of 8.0% for hepatitis E infection was found.^[29] Another study suggested that infection with hepatitis caused acute viral hepatitis in 60% of included women. Fulminant hepatic failure was more common and maternal mortality was greater in hepatitis-infected women.^[35] In this current content, HELLP syndrome was found in four patients (4,8.0%). Another related article revealed that HELLP was found in 64.8% of pregnant women.^[29] Another similar study depicted that HELLP syndrome was the most commonest aetiology found in 31.4% of pregnant women.^[36] A relevant journal also suggested HELLP syndrome was the commonest cause of jaundice during pregnancy.^[37] The present content depicted that

the majority of the patients (27,54.0%) had serum bilirubin less than 10mg. A dissimilar study suggested that most of the patients had serum bilirubin 2 to 4 mg.^[36] A similar study suggested that the majority of the patients (67.5%) had serum bilirubin of less than 10mg.^[20] Alkaline was raised in eighteen cases in our study. Another study suggested that alkaline was raised in only 2% of patients.^[36] In this study, SGOT & SGPT was found at 100-500 IU/ml in twenty-three patients (23,46.0%). In another related article, SGOT & SGPT was found 500-1000 IU/ml in the majority of the patients.^[38] In the present series, based on maternal complications, the majority of patients had a postpartum haemorrhage, ten patients (10,20.0%) experienced encephalopathy, two patients (2,4.0%) experienced renal failure, & seven patients (7,14.0%) died. Another study described that the common maternal complications were postpartum haemorrhage 9.8%, and hepatic encephalopathy 7.9%. disseminated intravascular coagulation 5.9% and hepatic renal failure 4.0%.^[20] A related article found that 5.9% of patients had intrahepatic cholestasis and 2.0% had renal failure.^[38] In the latter half of the pregnancy, there is a flow in placental hormones that change the function of the liver and its ability to stock bile rises and bile movement becomes sluggish. When the liver does not act accurately and is incapable to remove the bilirubin from the blood, the bilirubin levels rise. Jaundice in

pregnancy arises when there is excess bilirubin in movement.^[38]

Limitations of The Study

The study was conducted in a single hospital with a limited sample size. So, the results may not represent the whole community.

CONCLUSIONS

Hepatitis E was the most common cause of viral hepatitis in our study. Major complications were postpartum haemorrhage and encephalopathy. This study also prevailed jaundice in pregnancy is related to an increase in maternal mortality and morbidity, obstetric complications, and perinatal complications. Therefore a comprehensive framework can help reduce maternal mortality and morbidity as well prenatal death.

Recommendation

As jaundice in pregnancy is associated with an increase in maternal morbidity and mortality and obstetric complications, jaundice during pregnancy requires an initial diagnosis and cautious management. Community awareness regarding preventive measures for jaundice during pregnancy and hospital delivery should be ensured to reduce the risk of jaundice in pregnancy and thereby lessen maternal and perinatal morbidity and mortality. Further research is warranted to determine how best to prevent adverse outcomes of jaundice during pregnancy.

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