Print ISSN: 2321-6379
Online ISSN: 2321-595X

Original Article

Study of Jaundice Profile in Pregnancy with Emphasis on Maternal and Fetal Outcome

Minu Sharan[1], Mukul Kumar[2]

[1]Associate Professor, Department of Obstetrics and Gynaecology, Nalanda Medical College, Patna, Bihar, India, [2]Assistant Professor, Department of Medicine, Nalanda Medical College, Patna, Bihar, India

Abstract

Introduction: Jaundice in pregnancy leads to adverse maternal and fetal outcome. Viral Hepatitis B and hemolysis, elevated liver enzymes, and low platelets syndrome are the common causes of Jaundice. Various complications such as hepatic encephalopathy, hepatorenal failure, disseminated intravascular coagulation, post-partum hemorrhage, and abruptio placentae occur leading to increased maternal and perinatal mortality.

Aims and Objectives: The aim of this present study in to analyze the causes and various complications so that early diagnosis and management can be done to reduce the fetomaternal morbidity and mortality.

Material and Methods: Pregnant woman with jaundice of all trimesters were selected for study.

Results and Conclusion: The incidence was found to be 0.81%. Majority of the patients were in the age group of 20–30 years, both primi and multigravidae. Maternal mortality was 8% and perinatal mortality was 38%.

Key words: Jaundice, Pregnancy, Fetomaternal outcome

INTRODUCTION

Jaundice is yellowish discoloration of skin and mucous membrane resulting from increased serum levels of bilirubin, either direct or indirect. Only a smail percentage of pregnant women are affected by jaundice, but it has adverse outcomes for both the mother and the fetus, especially in developing countries like India.

Jaundice in pregnancy occurs 1 in 1500 cases and is an important medical disorder seen more often in developing countries than in developed ones. It is responsible for 14% of maternal and 60% perinatal deaths.

Jaundice in pregnancy can he caused by diseases unique to pregnancy such as toxemia of pregnancy, hyper emesis gravidarum, intra hepatic cholestasis of pregnancy, hemolysis, elevated liver enzymes and low platelets (HELLP) syndrome, and acute fatty liver of pregnancy (AFLP). There are a number of diseases causing jaundice, which occur coincidental with pregnancy such as viral hepatitis A, B, C, E, gall stone disease, hemolytic anemia, or due to drug administered during pregnancy. Pre-existing liver disease can also cause jaundice in pregnancy such as cirrhosis of liver, chronic viral hepatitis B and C, autoimmune hepatitis, and Wilson's disease.

As jaundice in pregnancy carries grave prognosis for both the mother and the fetus, the present study was undertaken to identity various causes of jaundice and to analyze the altered liver functions. This study will help us in better management of the cases of jaundice in pregnancy and in improving the maternal and fetal outcome.

Access this article online

www.ijss-sn.com

Month of Submission : 12-2020
Month of Peer Review : 12-2020
Month of Acceptance : 01-2021
Month of Publishing : 02-2021

MATERIALS AND METHODS

This study was done at Nalanda Medical College Hospital, Patna, from January 15, 2018 to 14th December 14, 2019.

Ninety pregnant woman with jaundice of all trimesters admitted in indoor of the hospital were selected for prospective study.

Corresponding Author: Dr. Mukul Kumar, D-20, Vrindavan Apartment, Malahi Pakri, Kankarbagh, Patna - 800 020, Bihar, India.

Detailed history was taken and meticulous general, systemic, and obstetrical examinations of the patient were conducted. The routine blood investigations such as complete blood count, reticulocyte count, and rapid test for MP were carried out, along with liver function tests, serum bilirubin (total, direct, and indirect) serum glutamic-pyruvic transaminase (SGPT), serum glutamic-oxaloacetic transaminase (SGOT), alkaline phosphatase (ALP), total protein, albumin and globulin, coagulation profile, and viral markers study including HBsAg, anti-HAV IgM, anti-HCV Ab, and anti-HEV IgM. Ultrasonography of hepatobiliary system was also advised. An analysis of maternal and fetal outcome was done.

RESULTS

During the study period, total number of antenatal admissions was 11020, out of which there were 90 case of jaundice. Hence, the incidence of jaundice was 0.81% . In this study, patients were from 19 to 35 year of age, majority being in the age group of 20–30 years, that is, 82% [Table 1]. About 60% were primi and 40% were multigravidae [Table 2]. About 90% of cases of jaundice in pregnancy presented in third trimester followed by second trimester 8% and first trimester, 2% [Table 3]. Out of 90 cases only 5 were booked [Table 4].

On analyzing the symptoms, 70% cases presented with yellow coloration of sclera and urine, 50% with nausea and vomiting, 44% with loss of appetite, and 40% with fever. A few presented with upper abdominal pain, itching, and passage of clay stool. As regards signs, icterus was present in all cases, edema in 28%, hepatomegaly in 22%, and epigastric tenderness in 20%. Ascites, splemomegaly, and scratch marks were found in certain percentage of cases [Table 5]. Bile salts and bile pigments were positive in 40% cases. The level of serum bilirubin varied between 2 and 18 mg % the highest being in the range of 2–5 mg %, i.e., 44%. The level of SGPT was 100–500 IU/L in 53% cases, <100 IU /L in 40 % cases, and more than 500 IU/L only in 7% cases. In maximum number of cases, level of ALP was <500 IU/L, that is, 76%, 500–1000 IU/L in 20%, and more than 1000 IU/ L only in 4% cases [Table 6].

The most common case of jaundice in pregnancy was viral hepatitis constituting 60% cause. Hepatitis E was detected in 2 and Hepatitis B in 10 cases. Out of 90 cases of jaundice in pregnancy, there were eight cases each of HELLP syndrome and chronic liver disease (CLD), seven cases each of intraheptic cholestasis and hyperemesis gravidarum, and five cases each of AFLP and transfusion reaction [Table 7].

On analyzing the pregnancy outcome, 45 had preterm and 36 term deliveries out of 90 cases. Seven had abortion and two died during the antenatal period [Table 8]. Ten cases delivered by LSCS. There were seven cases of hepatic encephalopathy and three of hepato renal failure. Five cases developed disseminated intravascular coagulation (DIC). Atonic post-partum hemorrhage (PPH) was seen in nine patients and four had abruptio placentae [Table 9]. Maternal mortality was 8% [Table 10].

As regards fetal outcome, there were 25 preterm and 31 term live births. There were 19 cases of preterm intra uterine deaths or still births and four cases of term IUD [Table 11]. Perinatal mortality was 38% and neonatal 10%.

DISCUSSION

In the present study, the incidence of jaundice in pregnancy was 0.81%. It is higher as compared to the study done by Acharya *et al.*[1] (0.4%) and Krishnamurthy *et al.* (0.29%).[2]

Most of the cases were from low socioeconomic class. Majority of cases were in the age group of 20–30 year (82%) and were primigravidas (60%).

The result was similar to the study done by Apraita *et al.* with 52.9% incidence of jaundice in pregnancy in younger

Table 1: Age-wise distribution

Age group	Number of cases	%
20 years	10	11
20–30 years	74	82
>30 years	6	7

Table 2: Distribution of cases according to gravidity

Gravidity	Number	%
Primi	54	60
Multi	36	40

Table 3: Distribution of cases according to period of gestation

Trimester	Number	%
First	2	2
Second	7	8
Third	81	90

Table 4: Distribution of cases according to booking

Booking status	Number	%
Unbooked	85	94
Booked	5	6

Table 5: Clinical features

	Number of cases	%
Symptoms		
Yellowish coloration of sclera and urine	63	70
Fever	36	40
Loss of appetite	40	44
Nausea and vomiting	45	50
Pain upper adwomen	4	5
Itching	9	10
Clay stool	2	2
Signs		
Icterus	90	100
Hepatomegaly	20	22
Splenomegaly	5	6
Epigastric tenderness	18	20
Ascites	10	11
Edema	25	28
Scratch marks	8	9

Table 6: Liver function tests

Test	Number of case	%
Serum bilirubin (mg %)		
2–5	40	44
6–10	22	24
11–15	20	22
>15	8	9
SGPT (IU/L)		
<100	36	40
100–500	48	53
>500	6	7
ALP (IU/L)		
<500	68	76
500–1000	18	20
>1000	4	4

Table 7: Etiology of jaundice

Diagnosis	Number	%
Viral hepatitis	54	60
HELLP syndrome	7	8
Intra hepatic cholestasis	6	7
AFLP	5	5
Transfusion reaction	5	5
Hyper emesis gravidarum	6	7
Chronic liver disease	7	8

Table 8: Pregnancy outcome

Outcome	Number	%
Abortion	7	8
Preterm delivery	45	50
Term delivery	36	40
Died in antenatal Period	2	2

age group and 51% cases were primigravidas. Majority of cases, that is, 90% presented in third trimester with higher complications during this period. The result was similar to that found by Harshad *et al.*[3] and Shukla *et al.*[4]

Table 9: Maternal outcome

Outcome	Number	%
DIC	5	6
Abruption	4	5
Atonic PPH	9	10
Hepatic encephalopathy	7	8
Hepato renal failure	3	4
Morality	7	8

Table 10: Maternal mortality

Diagnosis	Number of cases	Maternal mortality	%
HELLP syndrome	7	1	1.11
AFLP	5	1	1.11
Hepatitis	54	4	4.44
Hepatorenal failure	2	1	1.11

Table 11: Fetal outcome

Outcome	Number	%
Term live babies	31	35
Preterm live babies	25	28
Term IUD	4	5
Preterm IUD/ still birth	19	22
Neonatal mortality	9	10
Perinatal mortality	34	38

Viral hepatitis was the most common cause of jaundice in the present study, that is, 60%. Shukla *et al.* reported 57. 10 and Harshad *et al.* reported 47% cases of viral hepatitis. According to the study done by Karegoudar *et al.*, the most common cause of jaundice in pregnancy was HELLP syndrome (64%), followed by viral hepatitis.

In the present study, the incidence of HELLP syndrome was 7%. Cases of AFLP, CLD, hyperemesis gravidarum, intrahepatic cholestasis, and transfusion reaction were few in number, varied between 5% and 7%. Level of serum bilirubin, SGPT, and SGOT was found to be high in viral hepatitis, more than 500 IU/ml. Harshad *et al.* also reported marked elevation of bilirubin and transaminases about 10 fold in viral hepatitis. Pregnancy-associated liver diseases such as HELLP syndrome, intrahepatic cholestasis of pregnancy, and hyper emesis gravidarum had only 2–3 fold elevation.

In the present study, maternal mortality was 8%, 31 patients developed complications. Out of 54 case of hepatitis, seven developed hepatic encephalopathy and three hepatorenal failure. Four died of hepatic encephalopathy and one of heptaorenal failure. Hepatitis E was culprit in I case and Hepatitis B in two cases of hepatic encephalopathy. Atonic PPH developed in 10%, DIC in 6%, and abruption in 5% cases. Three cases of DIC were caused by HELLP syndrome and 2 by AFLP.

Maternal mortality was 24.4% according to Tripti *et al.*[5] and 7.8% according to Jayati *et al.*[6] Jain *et al.*[7] reported 3.92% cases of abruption.

As regards fetal outcome, there were 50% preterm deliveries and 28% preterm live births. There were 22% preterm IUDs or still births. Kumar *et al.*[8] reported 66.6% and Harshad *et al.* reported 32% preterm deliveries.

Perinatal mortality in this study was 38%. It was comparable to that reported by Rathi *et al.*,[9] 35.4% and Kumar *et al.* 26.5%. Tripti *et al.* and Karegouder *et al.*[10] reported higher prenatal mortality 61.76% and 46.16%, respectively. Neonatal mortality was 10% caused by HELLP syndrome, Hepatitis E, Hepatitis B, and intrahepatic cholestasis of pregnancy.

CONCLUSION

Although incidence of jaundice in pregnancy is low, it is associated with poor maternal and fetal outcome. Regular antenatal check-ups and relevant investigations are required for early diagnosis and proper management of cases of jaundice in pregnancy so as to reduce the maternal and fetal morbidity and mortality. As viral hepatitis is the most common cause, improving sanitary conditions and habits, imparting health education and knowledge of preventive measures will go a long way in reducing the burden of jaundice in pregnancy.

REFERENCES

1. Acharya N, Acharya S, Shuka S, Athvale R, Sharan M, Kumar M. Study of jaundice in pregnancy. Glob J Med Res 2013;13:25-9.
2. Krishnamurthy J, Murugesan A. Jaundice during pregnancy: Maternal and fetal outcome. Int J Rep Contracept Obstet Gynecol 2016;5:254-5.
3. Harshad D, Walter KK, Ross D, Lakshmi P. Pregnancy-associated acute liver disease and acute viral hepatitis: Differentiation, course and outcomes. J Hepatol 2008;49:930-5.
4. Shukla S. Prospective study on acute viral hepatitis in pregnancy: Seroprevalence and fetomaternal outcome of 100 cases. J Biosci Tech 2011;2:279-86.
5. Tripti N, Sarita A. Fetomaternal outcome in jaundice during pregnancy. Obstet Gynecol India 2005;55:424-7.
6. Jayati N, Bajpayi G, Sharma R. A clinical study on jaundice in pregnancy with special emphasis on fetomaternal outcome. IOSR J Dent Med Sci 2015;14:16-9.
7. Jain S, Pendyala P, Varma S, Sharma N, Joshi K, Chawla Y. Effect of renal dysfunction in fulminant hepatic failure. Indian J Med Res 2009;130:709-13.
8. Kumar A, Beniwal M, Kar P, Sharma JB, Murthy NS. Hepatitis E in pregnancy. Int J Gynaecol Obstet 2004;85:240-4.
9. Rathi U, Bapat M, Rathi P, Abraham P. Effect of liver disease on maternal and fetal outcome-a prospective study. Indian J Gastroenterol 2007;26:59-63.
10. Karegouder D, Patel R, Dhital M, Amgan K. A study of liver disorder and its consequences in pregnant women with jaundice in tertiary care centre in Belgaum, Karnataka, India. IOSR J Dent Med Sci 2014;13:14-8.

How to cite this article: Sharan M, Kumar M. Study of Jaundice Profile in Pregnancy with Emphasis on Maternal and Fetal Outcome. Int J Sci Stud 2021;8(11):28-31.

Source of Support: Nil, **Conflicts of Interest:** None declared.