

# Feto-Maternal Outcome in Patients with Jaundice During Pregnancy

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## ABSTRACT

**Objective:** To find out causes and feto-maternal outcome among patients presented with jaundice during pregnancy.

**Material and methods:** This study was conducted at Isra university Hospital over period of one year from January 2018 to December 2019 in OBS and gynecology department. A total of 50 females having singleton pregnancy and having jaundice were included in the study after taking verbal informed consent. All the patients underwent normal vaginal deliveries and cesarean section as per indications and Hospital protocol. All the information regarding demographic characteristics including maternal and fetal outcome in terms of complications and mortality was collected via self-made study proforma and data was analyzed by SPSS version 20.

**Results:** Total 50 patients were included in this study and 50% belonged to the age group of more than 30 years. 50% were un-booked, multigravida were 80% and 60% women poor socioeconomically. Most of the females had jaundice occurrence during the third trimester. Most patients 40% had jaundice due to viral hepatitis. Major maternal complications were the coagulation failure and renal impairment among 40% and 20% of the cases respectively, followed by septicemia, hepatic coma, hepatic coma, ICU admission, Abruptio placenta, PPH and maternal mortality were found with the percentage of 12.0%, 10.0%, 20.0%, 28.0%, 30.0% and 4.0% respectively. As per neonatal complications, fetal distress was 20.0%, still births were 10.0% and IUD were 10.0%.

**Conclusion:** As per study conclusion the most common cause of jaundice was viral hepatitis. Coagulation failure, renal impairment, abruptio placenta and PPH were observed to be the commonest maternal complications, while fetal distress, IUD and still birth were the frequent fetal complication among patients presenting with jaundice during pregnancy.

**Keywords:** Jaundice, feto-maternal outcome, viral hepatitis

## INTRODUCTION

Liver disease in pregnancy may manifest just as a benign disease with abnormal elevation of liver enzyme levels with good maternal or fetal outcome, or can manifest as a serious entity resulting in liver failure and increased morbidity and mortality to the mother and her fetus.<sup>1</sup> Jaundice is commonly referred to term for clinical manifestation of underlying liver diseases though not exclusively. It affects a small proportion of pregnant women but is responsible for 10% of maternal deaths.<sup>2</sup> Jaundice in pregnancy has adverse feto-maternal outcome and maternal morbidity and mortality increases with the rise in serum bilirubin level.<sup>3</sup> Pregnancy-related liver illness can be difficult for health-care practitioners to manage. Certain liver illnesses are specifically linked to pregnancy, whereas others are not. Acute fatty liver of pregnancy, Hyperemesis gravidarum, intrahepatic cholestasis of pregnancy and hemolysis with high liver enzymes and low platelets (HELLP) syndrome are all liver illnesses that are specific to pregnancy.<sup>4</sup> Pregnancy can be complicated by liver disease, such as acute viral hepatitis, and it can also be complicated by a patient's underlying chronic liver disease, such as cirrhosis and portal hypertension, as well as people who have had a liver transplant.<sup>5</sup> Because individuals go misdiagnosed and untreated for several years before suffering illness consequences, viral hepatitis is known as the "silent killer." In Pakistan, there has been very little community-based study on Hepatitis viral infections;<sup>6,7</sup> the evidence suggests that such diseases are endemic, with prevalence in the general population, blood donors, and pregnant women. Viral hepatitis A and E cause most morbidity in Pakistan, while hepatitis B, C, and D cause the most deaths. Due to poor sanitation and hygienic circumstances, approximately 90% of children in Pakistan contract hepatitis A before the age of ten; the disease can remain silent in both children and adults,<sup>6</sup> and acute viral hepatitis is primarily caused by HEV, particularly in people from low socioeconomic groups. Hepatitis E mainly develops as outbreaks and occasional cases during the summers, foods, and rains, due to poor sanitation and lifestyle.<sup>6</sup> The purpose of this study was to determine causes and feto-maternal outcomes in patients with jaundice during pregnancy.

## MATERIAL AND METHODS

This study was conducted at Isra university hospital over period of one year from January 2018 to December 2019 in OBS and

gynecology department. A total of 50 females having singleton pregnancy and having jaundice were included in the study after taking verbal informed consent. All pregnant patients lacking signs of jaundice, hepatocellular carcinoma and those who were not agreeing to participate in the study were excluded. Complete medical history, clinical examination and required laboratory investigations were done as per requirement. Pre and post drugs were used as per indication to decrease the complications. All patients underwent normal vaginal deliveries and cesarean section as per indications and Hospital protocol. All the information regarding demographic characteristics including maternal and fetal outcomes in terms of complications and mortality was collected via self-made study proforma.

## RESULTS

Total 50 patients were included in this study. In this study, the majority of patients i.e. 50% belonged to the age group of more than 30 years followed by 30% patients having an age group of 20-30 years. 50% were un-booked. Multigravida were in the majority 80% were and 60% women belonged to poor class. Spontaneous vaginal deliveries were done among 60% of the cases and 40% females underwent induced onset of labour. Mostly deliveries were done by normal vaginal deliveries and 10% patients underwent c-sections. Most of the females had jaundice occurrence during third trimester. Table.1

Majority of patients 40% had jaundice due to viral hepatitis, followed by pre-eclampsia, cholestasis of pregnancy, calculus in CBD, acute fatty liver, Cholestasis of pregnancy drug induced and HELLP syndrome, while 20% had other causes of jaundice. Above the percentage is more than 100%, which because of multiple causes among few cases. Table.2

Major maternal complications were found coagulation failure and renal impairment among 40% and 20% of the cases, respectively, followed by septicemia, hepatic coma, hepatic coma, ICU admission, Abruptio placenta, PPH and maternal mortality were found with the percentage of 12.0%, 10.0%, 20.0%, 28.0%, 30.0% and 4.0% respectively. As per neonatal complications, fetal distress was 20.0%, still birth was 10.0% and IUD were 10.0%. Table.3

Table 1. Demographic characteristics of the patients n=50

Variables		Frequency	%
Age groups	<20 year	10	20.0
	20-30	15	30.0
	>30 year	25	50.0
Booking status	Booked	15	30.0
	Un-booked	25	50.0
Parity	Primipara	10	20.0
	Multigravida	40	80.0
Socioeconomic status	Poor	30	60.0
	Middle	5	10.0
	Upper	15	30.0
Labour onset	SVD	30	60.0
	Induced	20	40.0
Mode of delivery	NVD	45	90.0
	C-section	5	10.0
Gestational age in which jaundice was occurred	1 <sup>st</sup> trimester	5	10.0
	2 <sup>nd</sup> trimester	15	30.0
	3 <sup>rd</sup> trimester	30	60.0

Table 2. Causes of jaundice during pregnancy of patients n=50

causes	Frequency	%
Pre-eclampsia	07	14.0
Viral hepatitis	25	50.0
Drug induced	02	04.0
Cholestasis of pregnancy	03	06.0
Acute fatty liver	02	04.0
Calculus CBD	02	04.0
HELLP syndrome	03	06.0
Others	10	20.0

Table 3. Demographic characteristics of the patients n=50

Variables		Frequency	%
Maternal outcome	Coagulation failure	20	40.0
	Renal dysfunction	10	20.0
	Septicemia	06	12.0
	Hepatic coma	05	10.0
	ICU admission	10	20.0
	Maternal mortality	02	04.0
	Abruptio placenta	14	28.0
	PPH	15	30.0
Fetal outcome	Alive baby	30	40.0
	IUD	05	10.0
	Still birth	05	10.0
	Fetal distress	10	20.0

## DISCUSSION

Although jaundice affects only a tiny number of pregnant women, it has a significant impact on the health of both the mother and fetus, particularly in underdeveloped nations like Pakistan. In this study, most patients i.e.50% belonged to the age group of more than 30 years, 50% women were un-booked, 80% were multigravida, and majority 60% belonged to poor socioeconomic class. Consistently Nagi LM et al<sup>9</sup> reported in their study that age group of 25-29 years was most affected (35.72%). Joshi R et al<sup>9</sup> also reported that 60% of the patients were aged between 20 and 30 years and further they reported that 54% females were primigravida, 83.3% were rural resident, while 74.27% females came in emergency and were un-booked.

In this study, the majority of patients had jaundice due to viral hepatitis, followed by cholestasis of pregnancy, acute fatty liver of pregnancy and HELLP syndrome. Similarly, Acharya N et al<sup>10</sup> reported that the most common cause was found to be viral hepatitis, which was linked to increased maternal and perinatal mortality. The second most common cause was cholestatic jaundice of pregnancy, which was followed by HELLP syndrome, drug-induced jaundice and acute fatty liver of pregnancy. Advances in our understanding and care of liver problems specific to pregnancy, as well as hepatobiliary illness in general, have resulted in a dramatic improvement in the prognosis for both the mother and foetus. Certain illnesses, like as hepatic hemorrhage and acute fatty liver in pregnancy linked with toxemia, should be treated as medical emergencies, and any

delay in identification would likely have a negative impact on mother and fetal outcomes. Within 24-48 hours of presentation, a thorough clinical history, physical examination, adequate laboratory testing, and radiographic studies should allow for a diagnosis. Study conducted by Khatuja R et al<sup>11</sup> reported that Over the course of four months, 48 pregnant women with jaundice were hospitalized and the majority of them were in the third trimester, further reported as the Twenty-four women had viral hepatitis, with six of them having hepatitis E, ten females had intrahepatic cholestasis during pregnancy, obstructive jaundice was in two, ten had hypertensive disorders during pregnancy, and two had malaria, and nearly half of the women had premature deliveries and 12 had caesarean sections and maternal mortality rate was 7.14%.<sup>11</sup>

In this study major complications were coagulation failure and renal impairment, followed by septicemia, hepatic coma, hepatic coma, ICU admission, Abruptio placenta, PPH and maternal mortality. Alternatively, Singh K et al<sup>12</sup> reported that coagulation failure and renal failure were the major complications, including septicemia, hepatic coma and disseminated intravascular coagulation. Mitta P et al<sup>13</sup> reported that the viral hepatitis was the commonest cause of jaundice during pregnancy and other commonest complications were renal failure 7.14%, 11.9% DIC, atonic PPH and abruption were 4.76%, 30.76% perinatal mortality and maternal mortality was 4.76%. Krishnamoorthy J et al<sup>2</sup> reported that atonic postpartum haemorrhage, disseminated intravascular coagulation, hepatic encephalopathy and hepatorenal failure were among the most prevalent maternal complications and maternal mortality was 7.8%. In the study of Changede P et al<sup>14</sup> also reported that 65% had hepatoportal hypertension and other complications like diffuse intravenous coagulopathy, hepatic encephalopathy, postpartum hemorrhage and hepatoportal hypertension were observed. and maternal mortality rate was 40%.

In this study, maximum of 60% patients had developed jaundice in the third trimester, followed by 30% patients in 2<sup>nd</sup> trimester. Consistently Harshad D et al<sup>15</sup> and Shukla S et al<sup>16</sup> also reported in their study that maximum incidence of jaundice was in 3<sup>rd</sup>trimester and the complications were also high during that period. Liver dysfunction tends to occur usually in the third trimester of pregnancy due to either intrahepatic Cholestasis of Pregnancy, frequent condition of preeclampsia and its severe form; hemolysis, elevated liver enzymes, and a low platelet count syndrome or due to Acute Fatty Liver of Pregnancy.<sup>16</sup> Suresh I et al<sup>17</sup> also mentioned that the preterm deliveries were 42%, 27% were admitted in NICU and 41 were dead. Malhotra V et al<sup>18</sup> reported that 52.08% babies in their study had term births and 41.66% were preterm births and a total of 8(16.66%) were IUDs, 22.91% were meconium staining and NICU admissions each. Normal birth weight was found in 39.58% babies and 54.16% were low birth weight babies. There are some differences in the fetomaternal outcome, and this may be because of study sample sizes, selection criteria and severity of the disease. Viral hepatitis is the commonest cause of jaundice among women during pregnancy in our study, it accounts for almost all jaundice-related deaths. Understanding dynamics of transmission of infective hepatitis, increasing public awareness about the infection, improving sanitary conditions as preventive measures are recommended. Antenatal screening, monitoring of viral markers and aggressive patient care can help in reducing the burden of pregnancy.

## CONCLUSION

It was concluded that jaundice during pregnancy is associated with adverse fetomaternal outcome. The most common cause of jaundice was viral hepatitis. Coagulation failure, renal impairment, abruptio placenta and PPH were observed to be the commonest maternal complications, while fetal distress, IUD and still birth were the frequent fetal complications among patients presenting with jaundice during pregnancy. As per limitations, this was a small

sample size study, hence further large-scale studies are recommended on this subject.

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