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Original Research Article

# Jaundice in Pregnancy: A Diagnostic and Management Dilemma

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**Abstract:**

**Background**: Jaundice in pregnancy is an uncommon but potentially life-threatening clinical condition that presents significant diagnostic and therapeutic challenges. The incidence ranges from 0.1% to 3% of pregnancies, yet it is associated with considerable maternal and perinatal morbidity and mortality. The etiology of jaundice during pregnancy is diverse and may be broadly classified into pregnancy-specific liver disorders and conditions unrelated to pregnancy. Pregnancy-specific causes include intrahepatic cholestasis of pregnancy (ICP), preeclampsia with severe features, HELLP syndrome (Hemolysis, Elevated Liver enzymes, and Low Platelets), and acute fatty liver of pregnancy (AFLP). Non-pregnancy-related causes encompass viral hepatitis (A, B, C, E), drug-induced liver injury, gallstone disease, and autoimmune or metabolic liver disorders. Viral hepatitis, particularly hepatitis E in endemic regions, remains a major contributor to maternal mortality in developing countries.

Clinical presentation varies from mild pruritus with elevated bile acids in ICP to fulminant hepatic failure in AFLP. Overlapping symptoms such as nausea, vomiting, abdominal pain, and elevated liver enzymes complicate timely diagnosis. Therefore, a systematic approach including detailed history, clinical examination, laboratory investigations, imaging studies, and multidisciplinary collaboration is essential. Management depends on the underlying cause, gestational age, and severity of maternal and fetal compromise. While ICP is primarily managed medically with ursodeoxycholic acid and planned early delivery, conditions such as HELLP syndrome and AFLP often necessitate urgent delivery irrespective of gestational age. Supportive care, intensive monitoring, and timely referral to tertiary care centers significantly improve outcomes. Early recognition, prompt differentiation between etiologies, and individualized management strategies are critical in reducing adverse maternal and fetal outcomes. Thus, jaundice in pregnancy remains a diagnostic and management dilemma requiring vigilant clinical assessment and coordinated care.

**Conclusion:** Jaundice in pregnancy is an uncommon but potentially life-threatening condition associated with significant maternal and fetal morbidity and mortality. The wide spectrum of etiologies—ranging from pregnancy-specific liver disorders to infectious and medical causes—makes early diagnosis challenging. In this study of 64 patients, viral hepatitis emerged as the most common cause, while pregnancy-specific conditions such as intrahepatic cholestasis of pregnancy, HELLP syndrome, and acute fatty liver of pregnancy were associated with increased maternal complications and adverse fetal outcomes.

**Keywords:** HELLP syndrome, AFLP, Jaundice.

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## Introduction

Jaundice during pregnancy is an uncommon but clinically significant condition that poses substantial risks to both the mother and the fetus. Although its incidence is relatively low, ranging between 0.1% and 3% of pregnancies, the associated maternal and perinatal morbidity and mortality make it a critical concern in obstetric practice. The presence of jaundice in a pregnant woman often signals underlying hepatic dysfunction, which may vary from benign and self-limiting disorders to rapidly progressive, life-threatening conditions.

Physiological changes in pregnancy—including increased plasma volume, altered immune response, and hormonal influences—can modify liver function tests and sometimes mask early signs of liver disease. These changes complicate the differentiation between normal pregnancy-related alterations and pathological conditions. Moreover, clinical features such as nausea, vomiting, abdominal pain, and malaise frequently overlap with common pregnancy symptoms, further delaying diagnosis.The causes of jaundice in pregnancy are

broadly classified into pregnancy-specific liver disorders and liver diseases coincidental with pregnancy. Pregnancy-specific conditions include intrahepatic cholestasis of pregnancy (ICP), preeclampsia with severe features, HELLP syndrome (Hemolysis, Elevated Liver enzymes, and Low Platelets), and acute fatty liver of pregnancy (AFLP). Non-pregnancy-related causes include viral hepatitis, gallstone disease, drug-induced liver injury, autoimmune hepatitis, and chronic liver diseases. In developing countries, viral hepatitis—particularly hepatitis E—remains a major contributor to maternal mortality.

Timely recognition and accurate diagnosis are essential because management strategies differ significantly depending on the underlying etiology and gestational age. Some conditions require only medical management and close monitoring, whereas others necessitate urgent delivery to prevent maternal and fetal complications. Therefore, jaundice in pregnancy represents a diagnostic and therapeutic challenge requiring a systematic, multidisciplinary approach to ensure optimal outcomes.

## Materials and Methods

**Study Design:** This was a prospective observational study conducted in the Department of Obstetrics and Gynecology at Patna Medical College and Hospital Patna, Bihar. and a tertiary care hospital Study duration is Two years. The study aimed to evaluate the etiology, clinical presentation, management, and maternal and fetal outcomes of jaundice in pregnancy.

**Study Population:** A total of 64 pregnant women diagnosed with jaundice during pregnancy were included in the study. Jaundice was defined clinically by icterus and/or biochemically by serum total bilirubin levels >2 mg/dL.

### Inclusion Criteria

- Pregnant women at any gestational age presenting with clinical and/or laboratory evidence of jaundice
- Patients willing to participate in the study

### Exclusion Criteria

- Known pre-existing chronic liver disease prior to pregnancy
- Hemolytic anemia unrelated to pregnancy
- Patients unwilling to provide consent

### Data Collection

Detailed history was obtained regarding:

- Age, parity, gestational age
- Past medical and obstetric history
- History of pruritus, fever, drug intake, blood transfusion
- Symptoms such as nausea, vomiting, abdominal pain, and altered sensorium

A thorough general physical and obstetric examination was performed.

### Laboratory Investigations

All patients underwent the following investigations:

- Complete blood count
- Liver function tests (serum bilirubin, AST, ALT, ALP)
- Serum bile acids (where indicated)
- Coagulation profile (PT/INR)
- Viral markers (HAV, HBV, HCV, HEV)
- Renal function tests
- Peripheral smear (to rule out hemolysis)

Ultrasonography of the abdomen and obstetric ultrasound were performed when indicated.

### Diagnosis and Classification

Patients were categorized into:

- Pregnancy-specific liver disorders (ICP, HELLP syndrome, AFLP, severe preeclampsia)
- Non-pregnancy-related causes (viral hepatitis, gallstone disease, drug-induced hepatitis, others)

Diagnosis was based on clinical features, laboratory findings, imaging studies, and established diagnostic criteria.

**Management Protocol:** Management depended on the underlying etiology, gestational age, and maternal-fetal condition. Patients were managed conservatively, medically, or with timely termination of pregnancy when indicated. Multidisciplinary care involving obstetricians, physicians, gastroenterologists, and intensivists was provided in severe cases.

### Outcome Measures

Maternal outcomes assessed included:

- Mode of delivery
- Postpartum hemorrhage
- Hepatic failure
- ICU admission
- Maternal mortality

Fetal outcomes assessed included:

- Preterm delivery
- Low birth weight
- Intrauterine fetal demise
- Neonatal intensive care unit (NICU) admission

**Statistical Analysis:** Data were entered into Microsoft Excel and analyzed using appropriate statistical methods. Results were expressed as percentages, mean ± standard deviation, and proportions where applicable.

## Results

A total of 64 pregnant women with jaundice were included in the study.

Demographic Profile

- The majority of patients (approximately 65%) were in the age group of 21–30 years.
- Most cases (around 70%) were multigravida.
- Jaundice was most commonly observed in the third trimester (approximately 75% of cases).

### Etiological Distribution

Among the 64 patients, the causes of jaundice were distributed as follows:

- **Pregnancy-specific liver disorders (40%)**
  - Intrahepatic cholestasis of pregnancy (ICP) – 12 cases (18.7%)
  - HELLP syndrome – 8 cases (12.5%)
  - Acute fatty liver of pregnancy (AFLP) – 4 cases (6.3%)
  - Severe preeclampsia with liver involvement – 2 cases (3.1%)
- **Non-pregnancy-related causes (60%)**
  - Viral hepatitis – 30 cases (46.8%)
  - Gallstone disease – 4 cases (6.3%)
  - Drug-induced hepatitis – 2 cases (3.1%)
  - Others – 2 cases (3.1%)

Viral hepatitis constituted the most common cause of jaundice in pregnancy in this study.

### Clinical Presentation

- Icterus – 100%
- Nausea and vomiting – 70%
- Pruritus – 25%
- Abdominal pain – 40%
- Hypertension – 20%
- Altered sensorium – 6%

### Maternal Complications

- Preterm labor – 30%
- Postpartum hemorrhage – 12%
- Disseminated intravascular coagulation (DIC) – 8%
- Acute renal failure – 6%
- ICU admission – 15%
- Maternal mortality – 5%

Maternal mortality was mainly associated with acute fatty liver of pregnancy and fulminant viral hepatitis.

### Fetal Outcome

- Preterm delivery – 32%
- Low birth weight – 28%
- Intrauterine fetal demise (IUFD) – 10%
- NICU admission – 25%

Adverse fetal outcomes were more commonly observed in cases complicated by HELLP syndrome, AFLP, and severe viral hepatitis.

## Discussion

Jaundice in pregnancy remains a significant obstetric challenge due to its varied etiology, overlapping clinical features, and potential for serious maternal and fetal complications. In the present study of 64 patients, jaundice was most commonly observed in the third trimester, which is consistent with the natural history of pregnancy-specific liver disorders such as intrahepatic cholestasis of pregnancy (ICP), HELLP syndrome, and acute fatty liver of pregnancy (AFLP), as well as severe viral hepatitis.

The majority of cases were attributed to non-pregnancy-related causes, particularly viral hepatitis, which emerged as the leading etiology. This finding correlates with observations from developing countries, where hepatitis—especially hepatitis E—remains a major contributor to maternal morbidity and mortality. Viral hepatitis during pregnancy is associated with higher rates of preterm labor, coagulopathy, hepatic encephalopathy, and maternal death, particularly in cases progressing to fulminant hepatic failure. Among pregnancy-specific disorders, intrahepatic cholestasis of pregnancy was the most frequent diagnosis. Although ICP is generally associated with lower maternal risk, it carries significant fetal risks including preterm birth, meconium-stained liquor, and intrauterine fetal demise if not appropriately monitored and timed for delivery. HELLP syndrome and AFLP, though less common, were associated with higher maternal morbidity, including disseminated intravascular coagulation (DIC), renal dysfunction, and increased need for intensive care support. Early recognition and prompt termination of pregnancy remain the cornerstone of management in these conditions.

The study also demonstrated substantial adverse fetal outcomes, including preterm delivery, low birth weight, NICU admissions, and intrauterine fetal demise. These outcomes were more frequently observed in patients with severe hepatic dysfunction, hypertensive disorders of pregnancy, and fulminant hepatitis. This emphasizes the importance of close fetal surveillance and multidisciplinary management.

The diagnostic dilemma arises due to overlapping symptoms such as nausea, vomiting, abdominal pain, and elevated liver enzymes, which may mimic normal pregnancy-related changes. Therefore, a systematic approach involving detailed history, laboratory evaluation, imaging, and early specialist referral is essential to differentiate between pregnancy-specific and non-pregnancy-related

causes. Overall, the findings of this study reinforce that jaundice in pregnancy requires high clinical suspicion, timely diagnosis, and individualized management strategies to reduce maternal and perinatal morbidity and mortality. Strengthening antenatal care, early referral to tertiary centers, and multidisciplinary collaboration are key to improving outcomes.

## Conclusion

Jaundice in pregnancy is an uncommon but potentially life-threatening condition associated with significant maternal and fetal morbidity and mortality. The wide spectrum of etiologies—ranging from pregnancy-specific liver disorders to infectious and medical causes—makes early diagnosis challenging. In this study of 64 patients, viral hepatitis emerged as the most common cause, while pregnancy-specific conditions such as intrahepatic cholestasis of pregnancy, HELLP syndrome, and acute fatty liver of pregnancy were associated with increased maternal complications and adverse fetal outcomes. The third trimester was the most common period of presentation, highlighting the need for heightened vigilance during late pregnancy. Overlapping clinical features often delay diagnosis; therefore, a systematic evaluation with appropriate laboratory investigations and imaging is essential for accurate identification of the underlying cause. Timely intervention, including medical management, intensive monitoring, and early delivery when indicated, plays a crucial role in improving outcomes. Multidisciplinary care involving obstetricians, physicians, gastroenterologists, and intensivists significantly reduces complications. jaundice in pregnancy remains a diagnostic and management dilemma that demands prompt recognition, individualized treatment, and coordinated care to minimize maternal and perinatal morbidity and mortality.

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