

ACUTE FATTY LIVER OF PREGNANCY: CLINICAL PROFILE, LABORATORY ABNORMALITIES, AND OUTCOMES

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Received : 02/09/2026
Received in revised form : 29/09/2026
Accepted : 12/10/2026

Keywords:

Acute fatty liver of pregnancy; AFLP; Swansea criteria; acute liver failure; coagulopathy; DIC; maternal mortality; perinatal outcome.

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DOI: 10.47009/jamp.2026.8.5.130

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2026; 8 (5); 820-828



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ABSTRACT

Background: Acute fatty liver of pregnancy (AFLP) is an uncommon but potentially life-threatening disorder. It usually presents in the third trimester of pregnancy and may progress to acute liver failure, coagulopathy, hypoglycemia, renal dysfunction, disseminated intravascular coagulation (DIC), and multiorgan dysfunction syndrome (MODS), resulting in substantial maternal and perinatal morbidity and mortality. **Materials and Methods:** This descriptive observational study was conducted in the Departments of Obstetrics & Gynecology and Medicine, Radha Govind Institute of Medical Sciences, Meerut, Uttar Pradesh, from July 2025 to August 2026. A total of 45 patients with clinically suspected AFLP based on clinical and laboratory features were studied. Maternal age, obstetric history, clinical presentation, laboratory parameters, Swansea score, treatment, and maternal and fetal/neonatal outcomes were recorded. **Results:** The mean maternal age was 29.85 ± 3.47 years, and the mean gestational age at onset was 33.69 ± 3.56 weeks. Common clinical manifestations included nausea/vomiting (64.4%), upper abdominal pain (60.0%), fatigue/malaise (60.0%), hypertension (55.6%), hypoglycemia (46.7%), and jaundice (44.4%). Elevated transaminases (95.6%) and bilirubin (84.4%) were the most frequently fulfilled Swansea criteria. The median Swansea score was 6 (IQR 5–7), and 73.3% of patients had a Swansea score ≥ 6 . Cesarean delivery was performed in 80.0% of patients. Blood-component transfusion was required in 62.2%, and 57.8% required ICU care. Maternal complications included hypoproteinemia (75.6%), coagulopathy (57.8%), hemorrhage (42.2%), acute renal failure (35.6%), DIC (31.1%), and MODS (24.4%). Maternal mortality was 6.7% (3/45). Preterm delivery occurred in 48.9% of pregnancies, fetal distress in 26.7%, and NICU admission was recorded in 24.4% of maternal-level records. Fetal or neonatal death was recorded in 20.0% of maternal-level records; because multiple gestations were present, this should not be interpreted as a fetus-level perinatal mortality rate. **Conclusion:** AFLP should be regarded as a multisystem disorder rather than an isolated liver disease. Early recognition using the clinical picture, laboratory investigations, and Swansea criteria, together with maternal stabilization, correction of metabolic and coagulation abnormalities, multidisciplinary care, and timely delivery, is central to management.

INTRODUCTION

Acute fatty liver of pregnancy (AFLP) is a rare disease that can cause severe hepatic dysfunction during pregnancy. It usually occurs in the third trimester or shortly after delivery.^[1,2] AFLP can lead to serious complications such as liver failure, bleeding disorders, kidney failure and multiple organ

failure. It can result in high rates of maternal and neonatal morbidity and mortality.^[2,3]

Patients who present with AFLP often have non-specific symptoms. Nausea, vomiting, loss of appetite, feeling unwell, abdominal pain or pain in the upper abdomen and jaundice are common signs of AFLP.^[3,4] As the disease worsens patients can become hypoglycaemic, develop coagulopathy,

encephalopathy, renal failure, ascites, pancreatitis, bleeding and multiorgan failure.^[2,3] AFLP can also mimic preeclampsia and HELLP syndrome and other diseases that cause liver damage making diagnosis difficult.^[1,2]

Abnormal laboratory findings are another feature of AFLP. Elevated transaminases and bilirubin, leukocytosis, prolonged prothrombin time, hypoglycemia, thrombocytopenia, elevated creatinine, and other coagulation abnormalities may occur.^[2,3] The Swansea criteria are used to support the diagnosis of AFLP. The presence of six or more criteria supports the diagnosis in the absence of another explanation for the clinical findings.^[1,2]

Defects in mitochondrial fatty-acid oxidation have been linked to AFLP. There may be defects in both mother and fetus that cause an increase in fatty-acid metabolites.^[1,3] This build up of fatty acids leads to microvesicular steatosis and further deterioration of liver function.^[3] Patients need to be managed promptly and delivered as soon as possible once they have been stabilised.

With earlier recognition and improved supportive care, maternal and neonatal survival has improved.^[1,4] Nevertheless, AFLP can cause renal failure, DIC, hemorrhage, encephalopathy, pancreatitis, sepsis, and multiorgan failure.^[1,2] Fetal and neonatal complications include fetal distress, preterm delivery, asphyxia, NICU admission, stillbirth, and neonatal death.^[1]

Characterizing the clinical and laboratory abnormalities associated with AFLP may facilitate earlier recognition and help identify patients at risk of adverse outcomes. Therefore, this study evaluated the clinical profile, laboratory abnormalities, management, and maternal and fetal/neonatal outcomes among patients with clinically suspected AFLP.

MATERIALS AND METHODS

This descriptive observational study was carried out in the Departments of Obstetrics & Gynaecology and Medicine, Radha Govind Institute of Medical Sciences, Meerut (U.P.), from July 2025 to August 2026. The study evaluated the clinical features, laboratory abnormalities, management, and outcomes of 45 patients with clinically suspected acute fatty liver of pregnancy.

Pregnant patients with suspected acute fatty liver of pregnancy based on clinical and laboratory features were included during the study period. Maternal age, gravida, parity, gestational age at presentation and delivery, and the presence of multiple pregnancy were recorded. History and clinical examination included nausea/vomiting, abdominal pain, malaise, jaundice, pruritus, hypertension, edema, features of hypoglycemia, bleeding tendency, polydipsia/polyuria, and encephalopathy. Swansea criteria were recorded to support the diagnosis of acute fatty liver of pregnancy. The

criteria include vomiting, abdominal pain, polydipsia/polyuria, encephalopathy, elevated bilirubin, hypoglycemia, elevated uric acid, leukocytosis, ascites or a bright liver on ultrasonography, elevated serum aminotransferases, elevated ammonia, renal impairment, coagulopathy, and microvesicular steatosis on liver biopsy. The presence of six or more criteria in the absence of another cause supports a diagnosis of AFLP. In this cohort, Swansea scores were analyzed separately because not all clinically suspected cases had a recorded score ≥ 6 .

Laboratory investigations included complete blood count, total leukocyte count, platelet count, blood glucose, serum bilirubin, serum albumin, ALT, AST, ALP, LDH, serum creatinine, serum ammonia, serum uric acid (when available), PT, APTT, INR, fibrinogen, D-dimer, and fibrin degradation products, as clinically indicated. Ultrasonography was performed to assess for a bright/fatty liver and ascites.

Once AFLP was diagnosed or strongly suspected, patients were managed by a multidisciplinary team comprising obstetricians, physicians, anesthetists, intensivists, and neonatologists as required. Initial stabilization included correction of hypoglycemia and electrolyte abnormalities. Coagulopathy and other organ dysfunction were treated as clinically indicated. Blood and blood components were transfused when required. Delivery was planned according to maternal and fetal condition and obstetric indications. ICU admission, blood-component transfusion, renal replacement therapy, plasma exchange, and other supportive measures were documented.

Maternal Outcome was assessed for Coagulopathy, Hemorrhage, Acute Kidney Injury, Ascites, Disseminated Intravascular Coagulation (DIC), Multiple Organ Dysfunction Syndrome (MODS), Hepatic Encephalopathy, Pulmonary Complication, ICU admission and Maternal Death. Hospital stay and if any further support was needed was also documented.

Fetal/neonatal outcomes assessed included gestational age at delivery, preterm delivery, fetal distress, birth weight, Apgar scores at 1 and 5 minutes, NICU admission, fetal death, neonatal death, and perinatal outcome. Preterm delivery was defined as delivery before 37 completed weeks. For multiple pregnancies, the outcome of each baby was documented; however, the summary table reports maternal-level records and should therefore be interpreted accordingly.

RESULTS

A total of 45 patients with clinically suspected acute fatty liver of pregnancy (AFLP) were included in the study. Results were analyzed with respect to demographic and obstetric characteristics, clinical presentation, laboratory abnormalities, Swansea

criteria, management, maternal complications, and fetal/neonatal outcomes.

Table 1: Demographic and Obstetric Profile of the Study Population (N=45)

Parameter	Result
Maternal age (years), Mean $\pm$ SD	29.85 $\pm$ 3.47
Age range (years)	22.3–37.7
Primigravida	16 (35.6%)
Multigravida	29 (64.4%)
Gestational age at onset (weeks), Mean $\pm$ SD	33.69 $\pm$ 3.56
Gestational age at delivery (weeks), Mean $\pm$ SD	36.92 $\pm$ 2.53
Multiple pregnancy	4 (8.9%)
Singleton pregnancy	41 (91.1%)

Table 2: Clinical Presentation of Patients with AFLP (N=45)

Clinical feature	Number (n)	Percentage (%)
Nausea/vomiting	29	64.4
Upper abdominal pain	27	60.0
Fatigue	27	60.0
Hypertension	25	55.6
Pruritus	24	53.3
Clinical hypoglycemia	21	46.7
Jaundice	20	44.4
Ascites/bright liver on USG	19	42.2
Hemorrhagic manifestations	11	24.4
Polydipsia/polyuria	9	20.0
Encephalopathy	9	20.0
Preeclampsia	9	20.0
Diarrhea	7	15.6
Edema	3	6.7

Table 3: Laboratory Profile of Patients with AFLP (N=45)

Laboratory parameter	Median (IQR)
ALT (U/L)	263.6 (40.2–468.6)
AST (U/L)	263.2 (101.5–428.3)
LDH (U/L)	1051.6 (664.4–1384.8)
ALP (U/L)	245.0 (131.2–343.7)
Total bilirubin (μ mol/L)	85.1 (34.2–163.9)
Serum albumin (g/L)	29.8 (24.8–33.9)
Blood glucose (mmol/L)	4.09 (3.24–5.05)
Serum ammonia (μ mol/L)	53.4 (27.9–78.8)
Serum creatinine (μ mol/L)	115.3 (66.5–177.3)
Total leukocyte count ($\times 10^9$ /L)	11.87 (8.48–14.66)
Platelet count ($\times 10^9$ /L)	146.7 (85.6–193.3)
Prothrombin time (seconds)	15.0 (11.9–18.3)
INR	1.32 (0.97–1.66)
Fibrinogen (mg/dL)	247.5 (154.3–390.1)

Table 4: Distribution of Swansea Diagnostic Criteria (N=45)

Swansea criterion	Number (n)	Percentage (%)
Elevated transaminases	43	95.6
Elevated bilirubin	38	84.4
Vomiting	29	64.4
Abdominal pain	27	60.0
Elevated ammonia	26	57.8
Coagulopathy	26	57.8
Leukocytosis	26	57.8
Hypoglycemia	21	46.7
Ascites/bright liver	19	42.2
Renal impairment	16	35.6
Polydipsia/polyuria	9	20.0
Encephalopathy	9	20.0
Swansea score ≥ 6	33	73.3

Table 5: Management of Patients with AFLP (N=45)

Management parameter	Number (n)	Percentage (%)
Cesarean delivery	36	80.0
Vaginal delivery	9	20.0
Blood-component transfusion	28	62.2
Platelet transfusion	13	28.9

ICU admission	26	57.8
Liver-supportive treatment	29	64.4
Plasma exchange and/or CRRT	3	6.7

Continuous parameter	Median (IQR)
Diagnosis-to-delivery interval (days)	1.6 (0.2–3.4)
Hospital stay (days)	8.4 (4.5–12.2)

Table 6: Maternal Complications and Outcomes (N=45)

Maternal complication/outcome	Number (n)	Percentage (%)
Hypoproteinemia	34	75.6
Coagulopathy	26	57.8
Hemorrhage	19	42.2
Ascites	16	35.6
Acute renal failure	16	35.6
Disseminated intravascular coagulation (DIC)	14	31.1
Multiple organ dysfunction syndrome (MODS)	11	24.4
Pulmonary infection	9	20.0
Hepatic encephalopathy	9	20.0
Pulmonary edema	6	13.3
DIC and/or MODS	21	46.7
Maternal death	3	6.7

Table 7: Fetal and Neonatal Outcomes (N=45 Maternal-level Records)

Fetal/neonatal outcome	Number (n)	Percentage (%)
Delivery <34 weeks	6	13.3
Delivery 34 to <37 weeks	16	35.6
Term delivery (≥37 weeks)	23	51.1
Overall preterm delivery (<37 weeks)	22	48.9
Fetal distress	12	26.7
Birth weight <2000 g	8	17.8
NICU admission	11	24.4
Fetal death	7	15.6
Neonatal death	2	4.4
Overall perinatal death	9	20.0

Neonatal parameter	Result
Birth weight, Mean ± SD	2784.7 ± 746.3 g
Mean 1-minute Apgar score*	7.04
Mean 5-minute Apgar score*	8.48

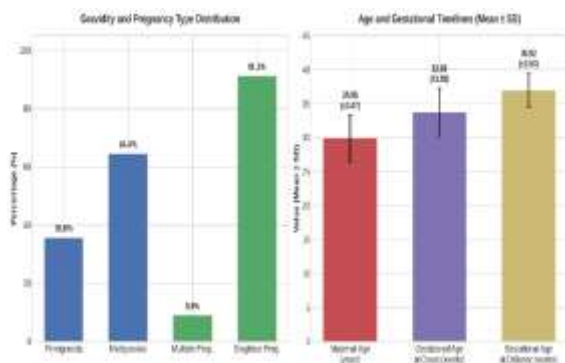


Figure 1: Demographic and Obstetric Profile of the Study Population (N=45)

The mean age of the study population was 29.85 ± 3.47 years. AFLP predominantly presented during the third trimester, with a mean gestational age at onset of 33.69 ± 3.56 weeks. Approximately one-third of the patients were primigravida, while multiple pregnancy was present in 8.9% of cases.

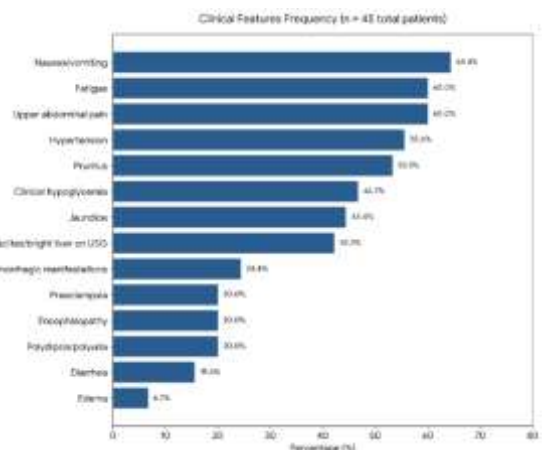


Figure 2: Clinical Presentation of Patients with AFLP (N=45)

Nausea and vomiting were the most common presenting manifestations, occurring in 64.4% of patients. Upper abdominal pain and fatigue were each present in 60.0%, followed by hypertension (55.6%), pruritus (53.3%), and clinical hypoglycemia (46.7%). Jaundice was observed in 44.4% of patients. Neurological involvement in the form of encephalopathy occurred in 20.0%.

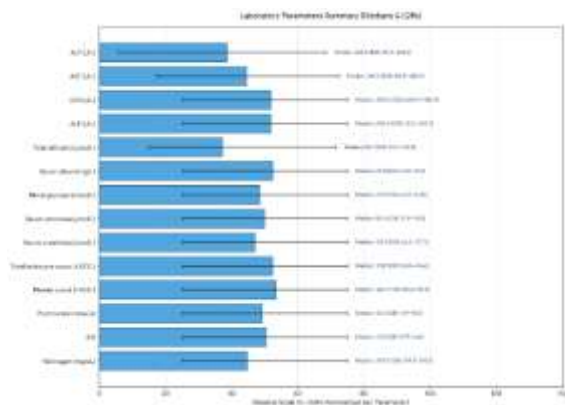


Figure 3: Laboratory Profile of Patients with AFLP (N=45)

IQR: interquartile range; ALT: alanine aminotransferase; AST: aspartate aminotransferase; LDH: lactate dehydrogenase; ALP: alkaline phosphatase; INR: international normalized ratio.

The laboratory profile demonstrated substantial hepatic dysfunction, with elevated aminotransferases and bilirubin levels. Coagulation abnormalities, thrombocytopenia, hypoglycemia, leukocytosis, and renal dysfunction were also observed. The median serum creatinine was 115.3 $\mu\text{mol/L}$, while the median platelet count was $146.7 \times 10^9/\text{L}$.

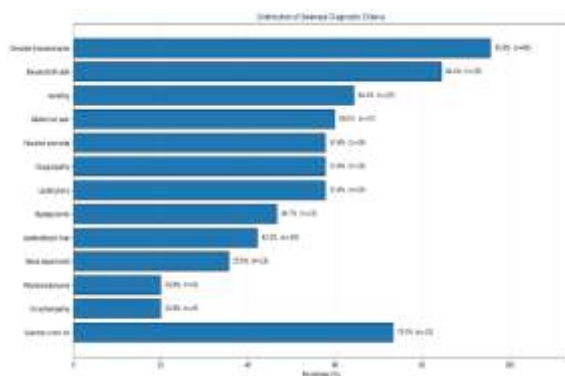


Figure 4: Distribution of Swansea Diagnostic Criteria (N=45)

Median Swansea score: 6 (IQR 5–7); range: 3–10.

Elevated transaminases were the most frequently fulfilled Swansea criterion (95.6%), followed by elevated bilirubin (84.4%). Coagulopathy and elevated ammonia were each observed in 57.8% of patients. Overall, 33 (73.3%) patients had a recorded Swansea score ≥ 6 . Thus, 12 (26.7%) clinically suspected cases had recorded scores below the conventional Swansea threshold and should be interpreted as clinically suspected rather than Swansea-confirmed AFLP.

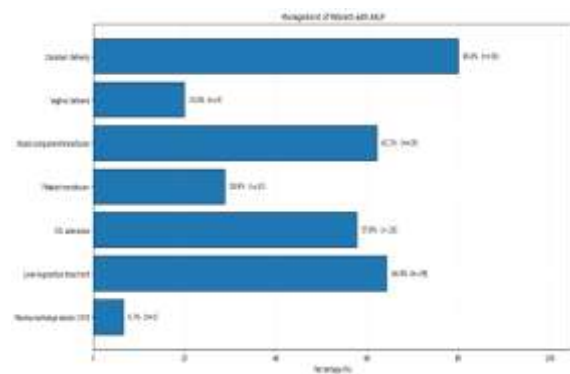


Figure 5: Management of Patients with AFLP (N=45)

ICU: intensive care unit; CRRT: continuous renal replacement therapy.

Cesarean section was the predominant mode of delivery, accounting for 80.0% of cases. More than half of the patients required ICU admission (57.8%), while 62.2% required blood-component transfusion. Advanced supportive treatment with plasma exchange and/or CRRT was required in 6.7% of cases.

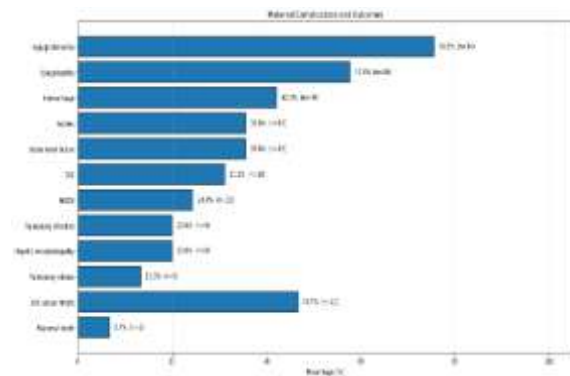


Figure 6: Maternal Complications and Outcomes (N=45)

Hypoproteinemia was the most frequently recorded maternal complication, occurring in 75.6% of cases. Coagulopathy was observed in 57.8%, hemorrhage in 42.2%, acute renal failure in 35.6%, DIC in 31.1%, and MODS in 24.4%. Overall, 21 (46.7%) patients developed DIC and/or MODS. There were 3 maternal deaths, resulting in a maternal mortality rate of 6.7%.

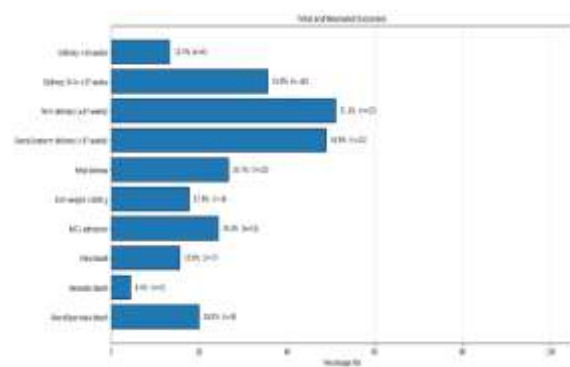


Figure 7: Fetal and Neonatal Outcomes (N=45 Maternal-level Records)

*Calculated among cases for which Apgar-score information was available. NICU: neonatal intensive care unit.

Preterm delivery occurred in 22 (48.9%) pregnancies, including 13.3% delivered before 34 weeks and 35.6% between 34 and <37 weeks. Fetal distress was documented in 26.7% and NICU admission in 24.4%. Fetal death occurred in 15.6% and neonatal death in 4.4%, giving a recorded overall perinatal mortality of 20.0% at the maternal-record level.

DISCUSSION

Acute fatty liver of pregnancy (AFLP) is a medical emergency that occurs in pregnancy. It mostly presents in the third trimester and causes acute liver failure. It can lead to coagulopathy, hypoglycemia, renal failure, encephalopathy, disseminated intravascular coagulation (DIC), multiorgan dysfunction syndrome (MODS). Here we present our results on demographics, clinical, laboratory features and outcome in 45 patients with AFLP.

Maternal Age

The mean maternal age was 29.85 ± 3.47 years, with a range of 22.3–37.7 years. Naoum EE et al,^[2] noted that AFLP occurs in women of childbearing age and that maternal age is not a reliable predictor of AFLP. Nelson DB et al,^[3] reported affected women predominantly in their late twenties and thirties, while Zhang YP et al,^[12] described a similar age distribution. The maternal age distribution in our cohort was therefore broadly comparable with previously reported series.

Age of Gestation

The mean gestational age in our study was 33.69 ± 3.56 weeks at onset of AFLP. At delivery the mean gestational age was 36.92 ± 2.53 weeks. Naoum EE et al,^[2] said that AFLP occurs in the 3rd trimester of pregnancy. It usually occurs between 30–38 weeks. Sometimes it can happen shortly after delivery. Zhou M et al,^[6] found that the mean gestational age for their patients was 35.0 ± 1.7 weeks. Liu G et al,^[7] said that the mean gestational age of patients with AFLP was around 36 weeks. Similar to ours another study looked at 35 patients and had a mean gestational age of 36 weeks.^[9] These are comparable to our study. So AFLP is more of a 3rd trimester disease.

Gravida & Multiple Pregnancies

16 (35.6%) of our patients were gravida 1. 29 (64.4%) were gravida 2 or higher. We had 4 (8.9%) multiple pregnancies. Knight M et al,^[10] did a study in the UK that found multiple pregnancies to be high in patients with AFLP. About 18% were twin pregnancies. Castro MA et al,^[11] also had 3 out of 16 patients with multiple gestation. Although we had less multiple pregnancies compared to other studies. There was still 8.9% which correlates with AFLP being more common in multiple pregnancies.

Nausea and vomiting

Nausea and vomiting was the most common symptom in our study. It was seen in 29 (64.4%) of

patients. Nelson DB et al,^[3] had 57% of their patients with nausea and vomiting.

Wang S et al,^[8] had 58.2% of their patients with nausea and vomiting. Castro MA et al,^[11] had about 75% of their patients with nausea and vomiting. Gao Q et al,^[13] had 87.5% of their patients with nausea and vomiting. Our percentage is comparable to Nelson DB et al,^[3] and Wang S et al.^[8] It was lower than Castro MA et al,^[11] and Gao Q et al.^[13]

Abdominal Pain

We had upper abdominal pain in 27 (60.0%) of our patients. Nelson DB et al,^[3] had abdominal pain in about 53% of their patients. A study of 35 patients found abdominal pain in 51.4%.^[9]

Our percentage is slightly higher than the other studies but still comparable. If a patient comes in with upper abdominal pain, nausea and/or vomiting or jaundice you should think of AFLP.

Hypertension & Preeclampsia

We had hypertension in 25 (55.6%) of our patients. Preeclampsia was found in 9 (20.0%) patients. Nelson DB et al,^[3] found that 57% of their patients had hypertension. Which is very close to our study's 55.6%. Naoum EE et al,^[2] found that there can be similarities between AFLP and preeclampsia or HELLP. All of them can have hypertension, elevated liver function tests, low platelets and renal insufficiency. If a patient has hypertension you should not assume its from preeclampsia or HELLP if they have liver issues. If the patient also has hypoglycemia, jaundice, coagulopathy, renal insufficiency and/or encephalopathy think of AFLP.

Jaundice was present in 20 (44.4%) patients. Gao Q et al,^[13] Wang S et al,^[8] and a study of 35 patients,^[9] reported higher proportions of jaundice. The reason for the lower frequency in the present cohort cannot be determined from this descriptive study and may reflect differences in case mix, timing of presentation, or diagnostic classification.

Hypoglycemia

We had clinical hypoglycemia in 21 (46.7%) of our patients. Liu G et al,^[7] found that 53% of their patients had hypoglycemia. Which is similar to our study. A study of 35 patients had a higher percentage of their patients with hypoglycemia.^[9] Naoum EE et al,^[2] said that hypoglycemia can occur with AFLP and is part of the Swansea criteria. So our percentage of patients with hypoglycemia backs up what Naoum EE et al,^[2] said about checking glucose often in AFLP.

Encephalopathy

9 (20.0%) of our patients had encephalopathy. Gao Q et al,^[13] found that about 53% of their patients had encephalopathy. Another study found about 40% of their patients with encephalopathy.^[9] Maybe our patients were at a lesser stage when they presented to the hospital. Encephalopathy can be seen when there is more severe liver dysfunction.

liver function tests

The median ALT was 263.6 in our study. Median AST was 263.2. Zhang YP et al,^[12] had a mean of

about 262 and 261 for ALT and AST respectively. Which is very similar to our study. Naoum EE et al,^[2] stated that high liver function tests are seen in patients with AFLP. So we are similar to Zhang YP et al,^[12] and other studies with elevated liver function tests.

Bilirubin

Our median total serum bilirubin was 85.1. 38 (84.4%) of our patients had high bilirubin by Swansea criteria. Zhou M et al,^[6] had high bilirubin in almost all their patients. Naoum EE et al,^[2] also stated that high bilirubin is seen in AFLP. Gao Q et al,^[15] found that the higher the bilirubin the worse the outcome. So having high bilirubin is common in AFLP. And the higher it is the worse your prognosis is.

Low Protein

We had a median albumin of 29.8 and 34 (75.6%) of our patients had low protein. Zhang YP et al,^[12] had about 75% of their patients with low protein. Which is almost the same as our study. Protein can be low because the liver isn't making enough or just from disease process.

Coagulopathy

We had coagulopathy in 26 (57.8%) of our patients. Our median PT was 15.0 and median INR was 1.32. Zhou M et al,^[6] had about 90.7% of their patients with abnormal clotting. A study of 35 patients had 77.1% of their patients with coagulopathy.^[9] Naoum EE et al,^[2] said that because the liver can't produce enough clotting factors you are at risk for bleeding during your cesarean section and delivery. Zhang YP et al,^[12] found that high PT and INR are associated with severe or fatal AFLP. We had a lower percentage of patients with coagulopathy than other studies but it was still very common.

Renal Failure

Our median creatinine was 115.3. We had renal failure in 16 (35.6%) of our patients. Zhou M et al,^[6] had about 74.1% of their patients with acute renal failure. Gao Q et al,^[13] also had a high percentage of patients with renal failure. Nelson DB et al,^[3] stated that renal failure can occur in patients with AFLP. Gao Q et al,^[15] found that a high creatinine can predict a poor maternal outcome. Our study had a lower percentage of patients with renal failure than other studies.

Swansea Criteria

The median Swansea score was 6 (IQR 5–7), and 33 (73.3%) patients had a score ≥ 6 . Naoum EE et al,^[2] described the Swansea criteria as a useful clinical tool for supporting the diagnosis of AFLP, particularly because liver biopsy is infrequently performed. Knight M et al,^[10] also used clinical criteria in the assessment of AFLP. In our cohort, the most frequently fulfilled criteria were elevated transaminases (95.6%), elevated bilirubin (84.4%), vomiting (64.4%), abdominal pain (60.0%), coagulopathy (57.8%), elevated ammonia (57.8%), and leukocytosis (57.8%). Because 12 patients had scores below 6, these cases should be considered clinically suspected rather than Swansea-confirmed

unless additional diagnostic evidence is available in the source records.

Delivery

We had 36 (80.0%) cesarean sections and 9 (20.0%) vaginal deliveries. Wang S et al,^[8] had about 78.8% of their patients deliver by cesarean section. Which is very close to our study. Liu G et al,^[7] had 12 out of 15 patients deliver by emergency cesarean section. So about 80% which is similar to our study.

Naoum EE et al,^[2] said that you should deliver the patient as soon as they are stabilized. Whether its a cesarean section or vaginal delivery depends on the mother and baby.

ICU

26 (57.8%) of our patients had to be admitted to the ICU. Knight M et al,^[10] found that about 60% of their patients needed to go to the ICU. Which is similar to our study with 57.8% of our patients going to the ICU. Naoum EE et al,^[2] said that severe cases of AFLP will require many doctors to help with care.

Transfusions

We had 28 (62.2%) patients that needed blood products. 13 (28.9%) patients needed platelets. Nelson DB et al,^[3] found that about half of their patients needed blood products due to coagulopathy and hemorrhage. Naoum EE et al,^[2] said that you should replace what is lost when a patient is bleeding. We had a high percentage of patients needing blood products. Probably due to our high percentage of coagulopathy, hemorrhage, DIC and low platelets.

DIC

We had DIC in 14 (31.1%) of our patients. Zhou M et al,^[6] had about 33.3% of their patients with DIC. Which is very similar to our study with 31.1% of patients with DIC. Gao Q et al,^[15] found that DIC was associated with a poor maternal outcome. DIC is one of the worst complications you can get with AFLP. It can cause hemorrhage, need for transfusions, organ failure and death.

Hemorrhage

We had hemorrhage in 19 (42.2%) of our patients. Zhou M et al,^[6] had hemorrhage in about 40.7% of their patients. Which is very similar to our study with 42.2% of patients having hemorrhage. Nelson DB et al,^[3] stated that because your liver can't make clotting factors you are at a higher risk for hemorrhage. So our study is similar to Zhou M et al,^[6] with patients getting hemorrhage.

MODS

We had MODS in 11 (24.4%) of our patients. With DIC and MODS combined we had 21 (46.7%) of our patients with one of these. Naoum EE et al,^[2] stated that AFLP can progress to liver failure, kidney failure, coagulopathy, encephalopathy, respiratory problems and MODS. Loganathan G et al,^[18] also found that AFLP can cause MODS, hemorrhage, sepsis and death. So AFLP can be thought of as a disease that effects the whole body not just your liver.

Maternal Death

We had a maternal mortality of 6.7% (3/45). Knight M et al,^[10] had 1 death out of 57 patients. So their maternal mortality was about 1.8% which is lower

than our study. Nelson DB et al,^[3] had 2 deaths out of 51 patients. So their maternal mortality was about 3.9%. Wang S et al,^[8] had 3 deaths out of 55 patients. So their maternal mortality was about 5.5%. Which is close to our study. Another study of 35 patients had a maternal mortality of about 11.4%.^[9]

So our maternal mortality was higher than Knight M et al,^[10] and Nelson DB et al.^[3] Close to Wang S et al,^[8] and lower than the other study.^[9]

Premature Delivery

We had 22 (48.9%) premature deliveries. 13.3% were less than 34 weeks and 35.6% were between 34 and <37 weeks. Naoum EE et al,^[2] said that babies can be born prematurely if the mother gets AFLP. You want to deliver the mother as soon as you can. Knight M et al,^[10] also stated that you can have fetal and neonatal morbidity. So because AFLP happens in the late 3rd trimester and you want to deliver the baby as soon as possible you get a lot of preterm deliveries.

Fetal Distress/NICU

We had fetal distress in 12 (26.7%) of our patients. We also had 11 (24.4%) patients that needed to go to the NICU. Naoum EE et al,^[2] said that your baby can become compromised if you are sick. You should monitor your baby if you are able to.

The requirement for NICU admission may have been influenced by the high frequency of preterm delivery and fetal distress; however, this descriptive study cannot establish a causal relationship.

Perinatal Death

There were 7 (15.6%) fetal deaths and 2 (4.4%) neonatal deaths when outcomes were summarized at the maternal-record level. Knight M et al,^[10] reported 7 deaths among 67 babies, while Nelson DB et al,^[3] reported approximately 120 stillbirths per 1000 births. Castro MA et al,^[11] reported fetal death in approximately 15%, and another study of 35 patients reported perinatal death of approximately 12.5%.^[9] Because this cohort included 45 mothers and approximately 49 babies, fetus-level perinatal mortality should be recalculated from the individual neonatal records before comparison with studies reporting outcomes per baby.

Limitations

This study has several limitations. It was a single-center descriptive study with a relatively small sample and no comparator group. Twelve of 45 clinically suspected cases had recorded Swansea scores below 6, and the available manuscript does not document additional confirmatory evidence for these cases. In addition, fetal and neonatal outcomes were summarized primarily at the maternal-record level despite the presence of multiple gestations. These factors should be considered when interpreting diagnostic certainty and perinatal outcome estimates.

CONCLUSION

Acute fatty liver of pregnancy is a life-threatening obstetric emergency associated with substantial maternal and perinatal morbidity and mortality. In

this cohort of 45 clinically suspected cases, presentation occurred predominantly in the third trimester, with a mean gestational age at onset of 33.69 ± 3.56 weeks. Common manifestations included nausea/vomiting, upper abdominal pain, malaise/fatigue, hypertension, pruritus, hypoglycemia, and jaundice.

Laboratory abnormalities included elevated transaminases and bilirubin, hypoglycemia, leukocytosis, thrombocytopenia, hypoalbuminemia/low protein levels, coagulation abnormalities, elevated ammonia, and renal dysfunction. The median Swansea score was 6 (IQR 5–7), and 73.3% had a Swansea score ≥ 6 . The remaining clinically suspected cases require interpretation in the context of the complete clinical record and exclusion of alternative diagnoses.

Cesarean delivery was performed in 80.0% of patients, blood-component transfusion was required in 62.2%, and 57.8% required ICU admission. Recorded maternal complications included hypoproteinemia (75.6%), coagulopathy (57.8%), hemorrhage (42.2%), acute renal failure (35.6%), DIC (31.1%), and MODS (24.4%). Maternal mortality was 6.7% (3/45).

Preterm delivery occurred in 48.9% of pregnancies, and fetal distress was noted in 26.7%. NICU admission was recorded in 24.4% of maternal-level records. Because multiple gestations were present, fetal/neonatal mortality should be reported using the actual number of babies as the denominator when individual neonatal data are available.

These findings support considering AFLP as a multisystem disorder rather than an isolated liver disease. AFLP should be considered in pregnant patients presenting with gastrointestinal symptoms, jaundice, hypoglycemia, coagulopathy, or renal dysfunction, particularly in late pregnancy. Prompt clinical assessment using the Swansea criteria, exclusion of alternative diagnoses, maternal stabilization, correction of metabolic and coagulation abnormalities, multidisciplinary care, and timely delivery are central to management. Because this was a descriptive observational study, causal improvement in outcomes cannot be inferred from the present data.

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