International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Rani R et al. Int J Reprod Contracept Obstet Gynecol. 2019 Mar;8(3):1197-1199
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20190905

Case Report

Fatal outcome in acute fatty liver of pregnancy and review of literature

Reena Rani[1]*, Asmita M. Rathore[2], Sangeeta Bhasin[2]

[1]Department of Obstetrics and Gynecology, North Delhi Municipal Corporation Medical College and Hindu Rao Hospital, Delhi, India
[2]Department of Obstetrics and Gynecology, Maulana Azad Medical College and Associated Hospitals, Delhi, India

Received: 11 January 2019
Accepted: 06 February 2019

***Correspondence:**
Dr. Reena Rani,
E-mail: dr.reena0310@gmail.com

ABSTRACT

Acute fatty liver of pregnancy (AFLP) is an uncommon life-threatening disorder of pregnancy seen commonly in third trimester. When not diagnosed at right time it can lead to hepatic failure, encephalopathy, coagulopathy, maternal and fetal mortality. The clinical symptoms and signs are nonspecific, and it needs to be identified early in order to prevent poor outcome. The gold standard for diagnosis of AFLP is liver biopsy, which is difficult in an acute setting and in abnormal coagulation profile hence the diagnosis is usually based on clinical criteria Early termination of pregnancy and good intensive care support are the mainstay of management. The authors here presented a case report where even early delivery and good critical care failed to prevent maternal mortality. Review of literature regarding etiopathogenesis, management and recurrences of AFLP are also discussed.

Keywords: Acute fatty liver, Coagulopathy, Encephalopathy, Pregnancy

INTRODUCTION

Abnormal liver functions are observed in 3%-5% of pregnancies. Most of these liver abnormalities in pregnancy are due to one of the 5 liver diseases-hyperemesis gravidarum (HG), intrahepatic cholestasis of pregnancy (ICP), pre-eclampsia, HELLP syndrome, and acute fatty liver of pregnancy (AFLP). Among all of the above AFLP is a rarely seen important cause of liver failure. Its incidence is 1 in 7,000 to 1 in 15,000 pregnancies and is a fatal condition unique to pregnancy especially observed in third trimester of pregnancy 1It carries a significant perinatal and maternal mortality.[1-3] It was described for the first time by Sheehan as yellow atrophy of liver.[4] It is more frequently seen in primigravida and there is an association with obesity, multiple pregnancies and male foetus (ratio 3:1)..The characteristics of AFLP include rapidly progressing hepatic dysfunction and a high risk of coagulation disorders triggered by microvesicular fatty infiltration of the hepatocytes.[5-8] Here author presents a case of AFLP which was managed keeping all differential diagnosis in mind and was given good critical care, but patient could not survive despite all measures.

CASE REPORT

Mrs. X, 26 years old lady, second gravida with one live issue, with 31weeks and 4 days of gestation was admitted in Obstetrics unit in view of raised home blood pressure records (130/100-130/120) and deranged liver function test (Serum bilirubin-1.8mg/dl, aspartate aminotransferase (AST) and alanine aminotransferase (ALT)-104 and116IU/ml respectively). She denied any complaint of headache, epigastric pain, blurring of vision or decreased urine output. On examination she was conscious, cooperative, pulse rate 90/min, blood pressure (BP) of 130/90mmHG, respiratory rate of 18/min, oxygen saturation of 99% on room air, significant pedal edema. Her urine analysis was negative for protein. She was put on blood pressure (BP) charting and was started on tab urosodeoxycholic acid, Inj vitamin K and steroid cover.

Her BP remained controlled 130/90 ‘s without drug. Her Investigation showed hemoglobin of 13mg/dl, total leucocyte counts of 26550/mm^3, platelet count of 1.73 lakh/mm^3. Serum bilirubin-4.6mg/dl (Direct=3.3), ALT-204U/L,AST-166U/L, S.LDH-783. Blood urea-35mg/dl, Serum creatinine-1mg/dl, random blood sugar-90 mg/dl, no proteinuria and no sign of hemolysis in peripheral smear. She developed multiple episodes of vomiting and yellowish discoloration of eyes and urine. Medicine and gastroenterology opinion were taken. She was negative for Viral marker (hepatitis A,B,C and E) serology, urgent upper abdomen sonography showed enlarged liver with fatty changes.

Her bilirubin raised to 14.9 and coagulation profile showed INR of 1.8. Patient started on injection Tazact and Clindamycin. A provisional diagnosis of acute fatty liver of pregnancy was made and decision for termination of pregnancy was taken along with correction of coagulation. Ultrasound umbilical artery doppler showed absent diastolic flow. Patient and her relatives refused cesarean for fetal indication in view of high maternal bilirubin levels. Patient was induced with dinoprost gel and was transfused 8 units of fresh frozen plasma (FFP). She delivered fresh still birth with baby weight of 2210gm. Prophylactically balloon tamponade instillation was done. No postpartum haemorrhage occurred. After one-hour post-delivery patient became agitated and developed respiratory distress(respiratory rate of 38/min with oxygen saturation of 84-86%).

Bilateral chest was clear. Arterial blood gas analysis showed metabolic acidosis. Patient was shifted in Intensive Care Unit and was intubated. She was kept on nitroglycerine drip for 2 days in view of high BP (190/120 mm HG) in postpartum. Her bilirubin raised to 21 with liver enzymes(SGOT/SGPT of 38 and 64), hemoglobin decreased to 6, total leucocyte counts of 43000/mm3, platelets dropped to 59000/mm^3 and INR raised to 1.85 . Coagulation correction was given. Dialysis was done twice in view of deranged renal function test and dyselectrolytemia (blood urea-174,serum creatinine-4.2 serum sodium and potassium-157/2.4 respectively)

She started having fever (99 F) hence antibiotics changed from injection tazobactum clindamycin to injection meropenem. She continued having high grade fever(101-103F) Inj teicoplanin added along with other antibiotics. Investigation for fever were found negative (blood/tracheal/urine culture, dengue serology, peripheral smear for malarial parasite). Her serum bilirubin remained high between 15-25.

Patient was started on Injection Terlipressin 1mg 6 hourly in view of deranged liver and kidney function test. She was transfused with a total of 5 units of packed cells, 20units of platelets, 46 units of fresh frozen plasma during total hospital stay. Patient expired on postpartum day 17 secondary to complication of acute respiratory distress syndrome ,renal insufficiency and acute liver failure.

DISCUSSION

Acute fatty liver of pregnancy a rare medical condition encountered during pregnancy. It is inherited as autosomal recessive disorder with mothers often are heterozygous for affected mutation.

The cause of AFLP is uncertain, but it has been described as disorder of mitochondrial fatty acid oxidation where Long-chain hydroxyacyl coenzyme A dehydrogenase (LCHAD) enzyme is deficient leading to accumulation of medium and long chain fatty acid .These accumulated metabolites produced by placenta or fetus are toxic to liver and can cause acute liver failure.

The symptoms and signs of AFLP are vague and hence making its diagnosis a challenging task. The clinical and biochemical findings typically mimic more common conditions like HELLP syndrome, preeclampsia, acute viral hepatitis or intrahepatic cholestasis of pregnancy.[9-11] It is essential to evaluate a pregnant lady with deranged liver function test for above mentioned conditions before reaching on to diagnosis of AFLP.

Patients with diagnosis of preeclampsia and HELLP syndrome usually have liver enzyme <500 IU/ml, presence of proteinuria, absence of hypoglycemia and jaundice usually seen as late presentation. Viral hepatitis typically has liver enzymes >500 IU/ml and on serology test identification of type of hepatitis could be made out. Intrahepatic cholestasis is characterized by intense pruritis along with deranged liver enzymes < 500IU/ml and is not associated with nausea, vomiting, abdominal pain, disseminated intravascular coagulation or liver failure.

The present case was admitted in view of deranged liver function test and borderline high home BP records. Initially authors kept diagnosis of gestational hypertension but later without much rise in BP or any proteinuria, her liver function test got dramatically deranged. There was no history of intense pruritis, and her serology test were negative for hepatitis. Symptoms of AFLP develop over days to weeks and include malaise, anorexia, nausea and vomiting, epigastric pain and progressive jaundice. In many women, persistent vomiting in late pregnancy is the major symptom. The key feature is rapidly deteriorating liver function test in aggressive phase of disease associated with deranged coagulation, hypoglycemia and hepatic encephalopathy.

Swansea criteria (Table 1) has been recently validated and it aids in making diagnosis of AFLP consistently. It includes six or more of following features in absence of any other cause for liver disease.[12] The present case fulfilled seven out of fourteen features among Swansea criteria.

Table 1: Swansea criteria: 6 or more feature in absence of any other cause for liver disease.

Parameter
Vomiting
Abdominal pain
Polydipsia/polyuria
Encephalopathy
Elevated bilirubin(>14micromol/L)
Hypoglycemia (<4 mmol/l)
Elevated urate (>340 micro mol/l)
Leucocytosis (>11x109/l)
Ascites or bright liver on ultrasound scan
Elevated transaminases (aspartate aminotransferase or alanine aminotransferase >42 IU/l)
Elevated ammonia (>47 micro mol/l)
Renal impairment (creatinine >150 micro mol/l)
Coagulopathy (prothrombin time >14 s or activated partial thromboplastin time >34 s)
Microvesicular steatosis on liver biopsy

Initial management involves supportive treatment including airway management, glycemic correction, hypertension management, intravenous fluids, electrolyte correction and blood products, including fresh frozen plasma and cryoprecipitate to correct DIC. After initial stabilization of mother, arrangements should be made for delivery of baby. Vaginal delivery is preferred over cesarean section, but a caesarean section may be needed in cases of severe bleeding or compromise of the mother's status.[8] Acute fatty liver of pregnancy was previously associated with high risk of morbidity and mortality up to 80-85%.[13] However with development of better health facility there has been a reduction in both maternal and fetal mortality.[14] Acute liver failure, renal failure DIC, sepsis and aspiration are the major factor contributing to maternal death. Recurrence of AFLP in subsequent pregnancies has been reported in only few cases but in some studies, it is up to 25% with mother carrying a compound heterozygous or homozygous mutant fetus.[15] Hence women who had AFLP diagnosed in previous pregnancies should be explained recurrence risk and need for close monitoring for any signs of liver failure in future pregnancy.

CONCLUSION

Acute fatty liver despite being a rare medical disorder needs high index of suspicion in any pregnant women who are presenting with jaundice, to reduce the chances of fetal and maternal morbidity and mortality. Early diagnosis, prompt delivery, intensive supportive care and collaboration with other specialties are the cornerstones in the management of AFLP.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Gregory TL. Hughes S. Coleman MA. De Silva A. Acute fatty liver of pregnancy; three cases and discussion of analgesia and anesthesia. Int J Obstet Anesthes. 2007;16(2):1759.
2. Riely CA. Acute fatty liver of pregnancy. Semin Liver Dis. 1987;7:47-54.
3. Knox TA, Olans LB. Liver disease in pregnancy. N Engl J Med. 1996;335(8):569-76.
4. Sheehan HL. The pathology of acute yellow atrophy and delayed chloroform poisoning. J Obstet Gynaecol Br Emp 1940;47(1):49-62.
5. Duma RJ, Dowling EA, Alexander HC, Sibrans D, Dempsey H. Acute fatty liver of pregnancy. Report of a surviving patient studied with serial liver biopsies. Ann Intern Med. 1965;63(5):851-8.
6. Burroughs AK, Seong NH, Dojcinov DM, Scheuer PJ, Sherlock SV. Idiopathic acute fatty liver of pregnancy in 12 patients. Q J Med. 1982;51(4):481–97.
7. Vigil-De Gracia P, Lavergne JA. Acute fatty liver of pregnancy. Int J Gynaecol Obstet. 2001;72:193-5.
8. Ko H, Yoshida EM. Acute fatty liver of pregnancy. Can J Gastroenterol. 2006;20(1):25-30.
9. Varner M, Rinderknecht NK. Acute fatty metamorphosis of pregnancy. A maternal mortality and literature review. J Reprod Med 1980;24(4):177-80.
10. Kaplan MM. Acute fatty liver of pregnancy. N Engl J Med 1985;313:367-70.
11. Schorr-Lesnick B, Lebovics E, Dworkin B, Rosenthal WS. Liver diseases unique to pregnancy. Am J Gastroenterol 1991;86(6):659-70.
12. Ch'Ng CL, Morgan M, Hainsworth I, Kingham JG. Prospective study of liver dysfunction in pregnancy in Southwest Wales. Gut. 2002;51(6):876-80.
13. Pilego Periz AR, Zavala Soto JO, Rodriguez Ballesteros R. Fatty liver of pregnancy. A report of two cases and medical literature review. Gynecol Obstet Mex 2006;74(3):164-9.
14. Fesenmeier MF, Coppage KH, Lambers DS, Barton JR, Sibai BM. Acute fatty liver of pregnancy in 3 tertiary care centers. Am J Obstet Gynecol 2005;192(5):1416-9.
15. MacLean MA, Cameron AD, Cumming GP, Murphy K, Mills P, Hilan KJ. Recurrence of acute fatty liver of pregnancy. Br J Obstet Gynaecol 1994;101(5):453-4.

Cite this article as: Rani R, Rathore AM, Bhasin S. Fatal outcome in acute fatty liver of pregnancy and review of literature. Int J Reprod Contracept Obstet Gynecol 2019;8:1197-9.