Management of HELLP Syndrome with ARDS in a Primigravida: A Case Report

Authors:- Dr Asheq Hussain
Department of Obstetric and Gynecology, District Hospital Washim Maharashtra

INTERNATIONAL JOURNAL OF MEDICAL CASE REPORTS ISSN 2455-0574

Abstract

HELLP syndrome, characterized by hemolysis, elevated liver enzymes, and low platelets, is a severe complication of pregnancy often associated with preeclampsia and eclampsia. We report a case of a 32-year-old primigravida who presented with HELLP syndrome and seizures at 35 weeks of gestation, necessitating emergent cesarean delivery. Postoperatively, the patient developed acute respiratory distress syndrome (ARDS), requiring prolonged intensive care management. Laboratory findings revealed hemolytic anemia, elevated liver enzymes, thrombocytopenia, and acute kidney injury. The patient was managed with mechanical ventilation, intravenous fluids, antihypertensives, corticosteroids, and platelet transfusions. Over six weeks, the patient's respiratory and renal functions normalized, and she was discharged in stable condition. The neonate also recovered well without significant complications. This case underscores the importance of early recognition and aggressive management of HELLP syndrome to prevent severe maternal and fetal complications. The development of ARDS as a complication highlights the need for a multidisciplinary approach in managing such cases.

Keywords:- HELLP Syndrome, Acute Respiratory Distress Syndrome, Pregnancy Complications, Intensive Care Management

Access this Journal Online

Quick Response Code

Website: www.ijomcr.net

Email:ijomcr@gmail.com

INTRODUCTION

HELLP syndrome, an acronym for Hemolysis, Elevated Liver enzymes, and Low Platelets, is a life-threatening complication often associated with preeclampsia and eclampsia in pregnancy. The condition typically manifests between the 28th and 37th weeks of gestation but can also occur postpartum.[1] The exact etiology of HELLP syndrome remains unclear, but it is believed to involve endothelial cell dysfunction, vasospasm, and the activation of the coagulation cascade, leading to the characteristic clinical and laboratory findings.[2]

Corresponding Author:

Dr Asheq Hussain
Department of Obstetric and Gynecology, District Hospital Washim Maharashtra

The epidemiology of HELLP syndrome indicates a higher incidence among older, multiparous women, though it can affect primigravida as well. The pathophysiology involves a complex interplay of maternal, fetal, and placental factors, leading to systemic inflammatory responses and endothelial damage. This results in microangiopathic hemolytic anemia, elevated liver enzymes due to hepatic dysfunction, and thrombocytopenia due to platelet consumption. These pathological changes can contribute to multiple organ dysfunction, including renal failure, liver hematomas, and in severe cases, disseminated intravascular coagulation (DIC).[3]

Clinically, HELLP syndrome presents with nonspecific symptoms such as right upper quadrant pain, nausea, vomiting, and malaise, which can easily be mistaken for other conditions. Laboratory findings include hemolysis evidenced by elevated lactate dehydrogenase (LDH), elevated liver enzymes (AST and ALT), and thrombocytopenia (platelet count <100,000/μL). Imaging studies may reveal hepatic abnormalities such as subcapsular hematomas or infarcts. The definitive diagnosis is clinical, supported by laboratory criteria.[4]

One important aspect of HELLP syndrome is its potential to cause severe maternal and fetal complications. Maternal complications include disseminated intravascular coagulation, acute renal failure, pulmonary edema, and acute respiratory distress syndrome (ARDS), while fetal complications primarily involve intrauterine growth restriction, preterm birth, and perinatal mortality.[5] The case presented here highlights the occurrence of ARDS, a severe pulmonary complication, in a primigravida with HELLP syndrome, underlining the critical need for prompt recognition and multidisciplinary management.

CASE REPORT

A 32-year-old primigravida woman, at 35 weeks of gestation, presented to the emergency department with complaints of severe epigastric pain, headache, and visual disturbances. She had no significant past medical history. On examination, her blood pressure was 160/110 mmHg, and she exhibited generalized edema. Shortly after admission, the patient experienced tonic-clonic seizures.

Laboratory investigations revealed hemolytic anemia with an LDH of 800 U/L, elevated liver enzymes (AST 200 U/L, ALT 180 U/L), and a platelet count of 80,000/μL. A diagnosis of HELLP syndrome complicated by eclampsia was made. An emergency cesarean section was performed due to the critical condition of both mother and fetus. A preterm male infant weighing 2.3 kg with an Apgar score of 6 at one minute and 8 at five minutes was delivered and transferred to the neonatal intensive care unit.

Postoperatively, the patient developed acute respiratory distress syndrome (ARDS), necessitating mechanical ventilation and intensive care unit (ICU) admission. Further investigations showed acute kidney injury with elevated serum creatinine (2.5 mg/dL) and proteinuria. Chest X-ray revealed bilateral infiltrates consistent with ARDS. The patient received supportive care, including intravenous fluids, antihypertensives, corticosteroids, and platelet transfusions. Mechanical ventilation was managed with a lung-protective strategy.

Over the course of six weeks, the patient's respiratory status gradually improved, and she was weaned off mechanical ventilation. Renal function normalized, and liver enzyme levels returned to baseline. By the sixth week postpartum, the patient's laboratory parameters were within normal limits, and she was discharged home in a stable condition. The infant also showed good progress and was discharged from the NICU without any significant complications.

Laboratory Investigations	Values on Admission
Hemoglobin	9.5 g/dL
Platelet count	80,000/μL
AST	200 U/L
ALT	180 U/L
LDH	800 U/L
Serum Creatinine	2.5 mg/dL
Proteinuria	+++

Table:- Laboratory Investigations in studied case

DISCUSSION

HELLP syndrome represents a severe variant of preeclampsia and requires immediate medical attention due to its potential for significant maternal and fetal morbidity and mortality. The development of ARDS in the context of HELLP syndrome, as observed in this case, underscores the complexity and severity of this condition. Similar

cases reported in the literature emphasize the importance of early diagnosis and aggressive management.[6]

The management of HELLP syndrome complicated by ARDS involves a multidisciplinary approach. Immediate delivery is crucial once fetal viability is established, and maternal stabilization is prioritized. Supportive care in the ICU, including mechanical ventilation and renal support, plays a critical role in recovery. Corticosteroids have been shown to improve maternal outcomes by enhancing platelet function and reducing inflammatory responses.[7]

This case also highlights the importance of follow-up and monitoring postpartum, as laboratory derangements may persist for several weeks. The normalization of renal function and liver enzymes, as seen in our patient, indicates a good prognosis with appropriate management. However, long-term follow-up is essential to monitor for any late sequelae.[8]

In conclusion, HELLP syndrome is a multisystem disorder with significant clinical implications. Early recognition, prompt delivery, and comprehensive supportive care are key to improving maternal and fetal outcomes. This case adds to the growing body of literature emphasizing the importance of a multidisciplinary approach in managing such complex presentations.

.CONCLUSION

This case of a 32-year-old primigravida with HELLP syndrome complicated by ARDS highlights the critical importance of early diagnosis and multidisciplinary management. The successful outcome underscores the value of prompt delivery and comprehensive supportive care in improving maternal and fetal outcomes.

Conflict of interest

None

Source Of Funding

None

REFERENCE

1. Weinstein L. It has been a great ride: the history of HELLP syndrome. Am J Obstet Gynecol 2005;193:860-3.
2. Stella CL, Sibai BM. Preeclampsia: diagnosis and management of the atypical presentation. J Matern Fetal Neonatal Med 2006; 19:381-6.
3. Sibai BM. Diagnosis, controversies, and management of the syndrome of hemolysis, elevated liver enzymes, and low platelet count. Obstet Gynecol. 2004;103:981-91.
4. Yang Z, Zhao Y, Bennett MJ. Fetal genotypes and pregnancy outcomes in 35 families with mitochondrial trifunctional protein mutations. Am J Obstet Gynecol. 2002;187:715.
5. Lachmeijer AM, Arngrı´msson R, Bastiaans EJ. A genome-wide scan for preeclampsia in the Netherlands. Eur J Hum Genet. 2001;9:758.
6. Bhattacharya S, Campbell DM. The incidence of severe complications of preeclampsia. Hypertens Pregnancy. 2005;24:181-90.
7. Neiger R, Trofatter MO, Trofatter KF. D-dimer test for early detection of HELLP syndrome. South Med J. 1995;88:416–419.
8. Martin JN, Blake PG, Perry KG, McCaul JF, Hess LW, Martin RW. The natural history of HELLP syndrome: patterns of disease progression and regression. Am J Obstet Gynecol. 1991;164:1500–1509.

Author Contribution:- AH- Concept Of Design; Manuscript Preparation; Revision Of Manuscript; Review Of Manuscript

How To Cite This Article

Asheq Hussain, Management of HELLP Syndrome with ARDS in a Primigravida: A Case Report , Int. j. med. case reports. 2023; 4 (1): 4-6

Received : 05-10-2022 Revised: 15-11-22 Accepted : 10-12-22