Mini Review

iMedPub Journals
http://www.imedpub.com/

Gynecology & Obstetrics Case report
ISSN IPGOCR

2015
Vol.1 No.1:7

Admission to Intensive Care Unit for HELLP Syndrome - 9 Years Review in a Low Risk Pregnant Population

Corticelli A[1*], Grimaldi M[1], Bosi S[1], Rosato F[1], D'Elia M[1], Moioli M[1], Trifiletti V[3], Manco E[2], Cinque E[2], Saltarini M[4]

[1]Department of Obstetrics and Gynaecology - ASL4 Chiavarese, Lavagna, Genoa, Italy

[2]Department of Anesthesiology, ASL4 Chiavarese, Lavagna, Genoa, Italy

[3]MD University of Study, Genoa

[4]Department of Anesthesiology, A.O.S. Maria Della Misericordia, Udine, Italy

[*]**Corresponding author:** Corticelli A, Department of Obstetrics and Gynaecology - ASL4 Chiavarese, Lavagna, Genoa, Italy, Tel: 328 3165990; E-mail: cortidoc@gmail.com

Received date: November 03, 2015; **Accepted date:** December 15, 2015; **Published date:** December 19, 2015

Type of Article: Review

Keywords: HELLP syndrome; Intensive care unit

Objective

HELLP syndrome is an obstetric complication characterized by heamolysis, elevated liver enzymes and low platelet count. This condition occurs in 0.5%-0.9% of all pregnancies and in 10-20% of patients with preeclampsia (Table 1).

Table 1. Symptoms of HELLP syndrome.

Headache
Nausea or vomiting
Changes in vision
Racing pulse, mental confusion

HELLP was named by Weinstein in 1982 and typically occurs between 27 and 37 weeks of pregnancy (70% of all cases) or immediately postpartum in 20% of cases (until 48 hours after childbirth) [1,2]. Although the cause of HELLP remains unknown, age older than 30 years and multiparity are recognized risk factors [2]. Pathophysiology of HELLP syndrome is not well-defined but endothelial dysfunction is considered the main underlying problem: fibrin forms cross linked networks in the small blood vessel, causing microangiopathy and tissutal hypo perfusion, and platelets are consumed.

Materials and Methods

The study group enrolled about 800 pregnant women/year afferring in our hospital in Northern Italy, near Portofino, in a primary delivery center.

The tables represent major clinical characteristics of syndrome and of the study group (Tables 2 and 3).

Table 2. Patients' characteristics.

Patients	9	100,00%
Age	34 yo	100,00%
SAPSII	16,1	
Admission criteria to Intensive care Unit		
Monitoring	2	22,20%
Intensive treatment	7	77,80%

Table 3. Organs' failure/dysfunction at the time of admission.

Respiratory failure	2	22,20%
Cardiovascular failure	1	11,10%
Neurologic dysfunction	2	22,20%
Procedures		
Invasive ventilation	4	44,40%
Not invasive ventilation	2	22,20%
Vasoactive Drugs	2	22,20%
Hemofiltration	1	
Outcome		
Alive	9	100,00%
Hospitalization in ICU	4,0 days	
Hospitalization	9,0 days	

A 43 years old patient at 38 weeks' gestation suffering from spontaneous rupture of liver right lobe subcapsular hematoma underwent exploratory laparotomy with periephatic packing

with omentum. Then patient was transferred to the referral Centre for transplants of San Martino Hospital (Genoa, Italy) and a liver transplantation was performed after 12 hours [3] (Table 4).

Table 4. Main diagnostic criteria of the HELLP syndrome.

HELLP class	Tennessee Classification	Mississippi classification
1	Platelets ≤ 100-10000³/L AST ≥70 IU/L LDH≥ 600 IU/L	Platelets ≤ 50 -10000³/L AST or ALT ≥ 70 IU/L LDH≥ 600 IU/L
2		Platelets ≤ 100-10.000³/L ≥ 50-10.000³/L AST or ALT ≥ 70 IU/L LDH ≥ 600 IU/L
3		Platlets≤ 150-10.000³/L ≥ 100-10.000³/L AST or ALT ≥ 40 IU/L LDH ≥ 600 IU/L

Discussion

Our collected data are similar to those of International literature [4]. HELLP syndrome may present with variability of features and can be subdivided into incomplete and complete form (Table 5).

Table 5. Characteristic timings and diagnostic laboratory features of liver diseases related to pregnancy.

	Trimester	Diagnostic
HG	1,2	↑ Bilirubin (×2-4 ULN), ↑ ALT/AST (× 2-4 ULN)
ICP	1,2,3	↑ Bilirubin (× 6 ULN), ↑ ALT/AST (× 6 ULN), ↑ bile acids
PRE-ECLAMPIA	2,3	↑ Bilirubin (× 2-5 ULN), ↑ ALT/AST (× 10-50 ULN), decrease of platelets
HELLP	2,3	↑ ALT/AST (x10-20 ULN)), ↑ LDH, decrease of platelets, ↑ uric acid
AFLP	2,3	↑ Bilirubin (× 6-8 ULN), ↑ ALT/AST (× 5-10 ULN) – rarely > 20

↑: Increase; HG: Hyperemesis Gravidarum; ICP: Intrahepatic Cholestasis of Pregnancy; HLLP: Heamolysis; Elevated Liver Enzymes, and Low Platelets; AFLP: Acute Fatty Liver of Pregnancy; ALT= Alanine Aminotransferase; AST: Aspartate Aminotransferase; LDH: Lactate Dehydrogenase; ULN: Upper Limit Normal;

The 'Missisipi classification' divided HELLP syndrome into 3 classes of increasing severity (Table 4) based on platelet count and major diagnostic criteria: hemolisis, increasing LDH concentration >600 IU/L and AST>70 IU/L. Use of corticosteroids for patients with HELLP syndrome remains a controversial issue [5]. Serum uric acid concentration is a predictive factor (Table 5) for maternal complications in case of preeclampsia [6] and this data is a strong marker of poor outcome [7,8].

Conclusion

HELLP syndrome is life-treating obstetrical complication with high risk of maternal mortality.

The distinction between hepatic diseases related to pregnancy or not is crucial to improve clinical outcome among women with hepatic dysfunction during gestation [7, 8].

Based on our clinical experience, a flow-chart (protocol) for multidisciplinary management of patients with HELLP syndrome was made up in collaboration Anesthesiologists, reducing significantly misdiagnosis and fetal maternal complications.

References

1. Weintein L (1982) Syndrome of heamolysis, elevated liver enzymes and low platelet count: a severe consequence of hypertension in pregnancy. Am J Obstet Gynecol 142: 159-167.
2. Haram K, Swndsen E, Abilgaard U (2009) The HELLP syndrome: clinical issues and management. A review. BMC Pregnancy Childbirth 9: 8.
3. Varotti G, Andorno E, Valente U (2010) Liver transplantation for spontaneous rupture associated with HELLP syndrome. Int J Gynaecol Obstet 111: 84-85.
4. Al-Suleiman SA, Qutub HO, Rahman J (2006) Obstetric admission to intensive care unit: a 12 year review. Arch Gynecol Obstet 274: 4-8.
5. Woustra DM, Chandra S, Hofmeyer GJ, Dowswell T (2010) Corticosteroids for HELLP syndrome in pregnancy. Cochrane Database System Review 8: 9.
6. Koopmans CM, Van Pampus MG, Groen H, Aarnoudse JG, van den Berg PP, et al. (2009) Accuracy of serum uric acid as a predictive test for maternal complication in pre-eclampsja: bivariate meta-analysis and decision analysis. Eur J Obstet Gynecol Reprod Biol 146: 8-14.
7. Joshi D, James Quaglia A, Andra James, Rachel H Westbrook, Michael A Heneghan (2010) Liver disease in pregnancy. Lancet 375: 594-605.
8. Hawkins TL, Roberts JM, Mangos GJ, Davis GK, Roberts LM, et al. (2012) Plasma uric acid remains a marker of poor outcome in hypertensive pregnancy: a retrospective cohort study. BJOG 119: 484-492.