Hellp Syndrome - A Study from a Tertiary Centre in India

Preetha George[1], V M Jayasree Thankachi[2]

ABSTRACT

Introduction: HELLP Syndrome is a life threatening obstetric complication usually considered to be variant/complication of pre-eclampsia. National Institute of Health estimates that one in every four pregnant patient develops serious complication due to HELLP. This is most often due to delayed treatment. Study was done to find out the cases of Hellp Syndrome and complications associated with it.

Material and methods: 55 patients who developed HELLP syndrome or partial HELLP during 2015 October to 2016 October. In the Department of Obstetrics and Gynaecology of MOSC Medical College Hospital Kolenchery were studied.

Result: 1.83% of patients admitted for delivery developed HELLP syndrome. Majority of patients developed the condition by 32-36 weeks. Maternal morbidity was 34.54%. 76.36% of babies were born preterm.

Conclusion: HELLP syndrome needs early diagnosis and intervention by termination of pregnancy to arrest further progress so as to reduce maternal and neonatal morbidity and mortality.

Keywords: HELLP Syndrome, Maternal morbidity, Perinatal Morbidity

INTRODUCTION

The HELLP syndrome was originally described by Pritchard et al in 1954.[1] HELLP Syndrome was named by Dr Louis Weintsein[1] in 1982 based on its clinical features, H (haemolysis) is microangiopathic hemolytic anemia, EL(Elevated liver Enzymes), LP (Low platelet count). In Tennessee[2] classification system diagnostic criteria for HELLP are haemolysis with increased LDH (>600), AST(≥70 µ/L) platelets <100-10^9/L. Diagnosis of complete form of the HELLP requires the presence of all 3 major components while partial or incomplete HELLP syndrome requires only 1 or 2 elements of the triad.

Haemolysis characterised by microangiopathic hemolytic anemia is the hall mark of HELLP syndrome. It is diagnosed by presence of fragmented (shistocytes) or contracted red cells with spicules (Burr cells) in the peripheral smear. Increased serum lactate dehydrogenase level, decreased haptoglobulin concentration and the prescence of unconjugated bilirubin (>1.2 mg/100ml) all shows sign of haemolysis. Liver enzyme elevation shows liver involvement and also haemolysis. The activated platelets adhere to the damaged vascular endothelial cells leading to increased platelet consumption and decreasing the count.

Class I
- Platelet count ≤50,000/mm^3
- Sr.AST or Sr. ALT ≥70 IU/L
- Sr.LDH ≥600 IU/L

Class II
- Platelet count >50,000 –≤ 100,000/mm3
- Sr.AST or Sr. ALT ≥70 IU/L
- Sr. LDH ≥600 IU/L

Class III
- Platelet count >100,000 to ≤150,000/mm^3
- Sr.AST or Sr. ALT ≥40 IU/L
- Sr.LDH ≥600 IU/L

The onset of HELLP syndrome is atypical,variable and rapid and the diagnosis can be delayed. Many of them are misdiagnosed as gastritis, oesophagitis, hepatitis, cholecystitis, viral fever or idiopathic thrombocytopenia. Typical clinical features are right upper quadrant pain, nausea, vomiting and epigastric pain. Pain abdomen can be intermittent or colicky. It can be associated with malaise also. Study was done to find out the cases of Hellp Syndrome and complications associated with it.

MATERIAL AND METHODS

This prospective cross sectional study was conducted in MOSC Medical College, Kolenchery,Kerala, India. This was done during the period of 1/10/15 to 30/10/2016 with 55 patients. The sample size was measured using N Master sample size calculation software produced by Department of Biostatistics, Christian Medical College, Vellore, Tamilnadu, India with precision of 5% and confidence interval of 95%. Ethical clearance has obtained from MOSC medical college hospital committee.

Inclusion criteria
- All pregnant women with hypertension who developed HELLP/ partial HELLP were included
- Gestational age >20 weeks

Exclusion criteria
- Woman with less than 20 weeks of pregnancy
- Women with others problems like cholecystitis, gastroenteritis, viral hepatitis

Gestational age of the pregnancy was determined using last menstrual period in patients with regular cycles or by first trimester ultrasound in those with irregular cycles. Demographic data of the patient were collected, maternal symptoms and perinatal outcome was also assessed by

[1]Associate Professor, [2]Professor and HOD, MOSC Medical College, Kolenchery, India

Corresponding author: Dr Preetha George, Kottalil House, Kunnackal P O, Muvattupuzha, India

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Apgar scoring, preterm /term IUFD, still births. Diagnosis and classifications of HELLP syndrome was made using the criteria established by Sibai et al- complete or partial HELLP depending on the components involved and Mississippi classification ie abnormal peripheral smear raised LDH(more than 300 units/litre) elevated total bilirubin(>1.2mg%) elevated liver enzymes AST≥70u/L) and low (platelets <1lakh/mm^3). Clinical features as BP, proteinuria, and type of drugs used any maternal complications as abruption; Eclampsia, DIC, AKI, Pulmonary edema or effusion, Wound haematom and any need of blood transfusions were noted.
The patients diastolic BP was maintained between 90 and 100 mmHg using Nifedepin, α Methyldopa, Oral/Inj Labetalol or a combination of these drugs. Magnesium Sulphate was started in cases with imminent eclampsia with the dosage of KFOG 2012 regimen. Blood and Blood products were used to correct coagulation abnormalities.

STATISTICAL ANALYSIS

The data was analyzed by Microsoft Office Excel 2010 version. The results were expressed as number and percentage for all the qualitative variables. Mean and standard deviation were used for quantitative variables.

RESULTS

During the 13 months of the prospective study there were a total of 3003 deliveries in our institution. Among them 260 patients had hypertension complicating pregnancy. Among them 55 cases developed HELLP syndrome. 50 patients had Partial HELLP and 5 patients had complete HELLP. Of the 260, 41 patients had preeclampsia and 219 cases had Gestational Hypertension.
Maximum numbers of cases were recorded at 32-36 wk. The patients had varied ways of presentation mainly with features of severe pre-eclampsia (table-1).
74.5% of the patients with HELLP had caesarean section (table-2).
One patient developed peripartum cardiomyopathy. Atonic PPH was present in 3.6% of patients. Eclampsia was also seen in 3.6% of patients. LDH was elevated more than 1000 in 5 of the patients and complications were more in them. One patient had eclampsia and the other hand abruption. ALT and AST was also more than 70 in all of them (table-3).
The mean cause of perinatal deaths in our study was prematurity. There was one IUD, 3 still birth and 5 neonatal death in our study (table-4).

Gestational Age	No of cases	HEELLP	Partial HELLP
<26 weeks	6		6
28-32 weeks	13	2	11
32-36 weeks	20	3	17
>36 weeks	16		16
Total	55	5	50

Table-1: Cases according to gestational Age

Mode of delivery	No of cases	Partial HELLP	HELLP
Vaginall delivery	14(25.45%)	14(28%)	0
Caesarean delivery	41(74.5%)	36(72%)	5(100%)
Total	55(100%)	50(100%)	5(100%)

Table-2: Mode of delivery

Atonic PPH-2(3.6%)
Cardiac complications-1(1.8%)
Eclampsia-2(3.6%)
Abruption-1(1.8%)
Renal complications-2(3.6%)
Oliguria-5
Maternal l death-0

Table-3: Maternal Complications

	HELLP	Partial HELLP	Total
Preterm	5	37	76.3%
IUGR	2	6	14.5%
Still birth	0	4	7.7%
Low Apgar	2	9	20%
IUD	1		1.8%
Early NND	2	3	9%

Table-4: Perinatal Complications

DISCUSSION

Hellp Syndrome is a serious obstetric complication in pregnancy. Incidence is reported to be 0.5 to 9% of all pregnancies and in 10-20% of cases with severe preeclampsia and eclampsia. Our study showed an incidence of 1.83%. Chawla sushil[3] reported an incidence of 0.45% in general population and 3.7% of the hypertensive patients. Abdul Kadir[4] et al reported an incidence of 0.27%. Kumari sowjanya[5] et al reported an incidence of 32.23.
78.1% Patients were booked 21.9% were unbooked in the study 27(49%) were primigravida with 28 (51%) were multi gravid. Sowjanya et al[5] reported 52.64% booked cases 47.36% unbooked- Kota[6] reported 80% of cases were referred. As per Kota et al 73.3% of the cases were primi gravida and 26.6% were multigravida women. The condition was present both in primi gravida and multi gravida thus indicating that the condition should be suspected in multi gravida too. Higher incidence of caesarean section is seen in complete HELLP. In our study it was 100% which was also reported by Audibert et al.[7]
28% of the partial HELLP cases had a vaginal delivery. Lakshmi Narayana Kota[6] reported 86.6% of cases delivered by caesarean section. Partial Hellp syndrome can progress to complete HELLP. Audibert[7] et al suggest that complications with partial HELLP syndrome are not as severe as in complete HELLP syndrome with severe pre-eclampsia – eclampsia which has serious maternal morbidity.[8]
Mean Maternal age was 33 years in our study with a range from 20-39. There were 27primigravida (49%) and 28 (51%) were multigravida. Sushil Chawla[3] et al reported a mean age of 24.25+3.05 and a mean gestational age of 32.89 +_2.66 wks. Kota[6] et al reported that majority of cases belonged to 21-25 years group.
Sowjanya kumari[5] et al reported maximum number of cases

in the same gestational age as ours that is 32 - 36 weeks as in Table 1. Sushil Chawla[3] reported a mean gestational age of 32.89+2.66.

All patients of complete HELLP had caesarean delivery where as 28% of the partial HELLP cases had a vaginal delivery as in Table 2. Kota et al[6] reported that 86.6% were delivered by caesarean section.

As in Table 3 Maternal morbidity was 34.54%. No Maternal deaths were there. Lakshmi Narayana Kota[6] reported a maternal mortality of 61.66% and morbidity of 60%. Abdul Kadir[4] et al reported an overall rate of adverse maternal complications of 16.2% and maternal mortality of 0.9%. Ashwini et al[8] had reported that most maternal complications are due to DIC and Abruptio placenta. Sushil Chawla[3] reported a maternal mortality of 12.5% due to pulmonary oedema, liver haematoma and DIC. Sowjana Kumari et al[5] reported a maternal mortality of 4.5%.

As in Table 4, 76.36% of babies were preterm. Still birth and IUD were 7.7% with 1.8% respectively. Perinatal morbidity was 14.4% with mortality 9%. Abdul Kadir[4] et al also reported an association between gestational age and Neonatal morbidity and mortality. Ashwini et al[8] reported that prematurity with IUGR accounts for most common complications among HELLP syndrome patients. Perinatal morbidity and mortality was 46.6% each as sited by Lakshmi Narayana Kota.[6] Chawla Sushil et al[3] reported a perinatal mortality of 45.8% cause due to prematurity and IUGR. Sowjana Kumari et al[5] reported prematurity as the major cause for perinatal mortality (24%).

All our 55 patients developed HELLP in the antepartum period. No patients developed HELLP in the post partum period. Lakshmi Narayana Kota[6] et al also reported that all cases had occurred in the antepartum period. Sushil Chawla[3] reported that 20% of the patients developed HELLP in post partum period. Women with post partum HELLP syndrome have significantly higher incidence of complication as pulmonary oedema, renal failure, DIC and sub capsular haematoma.

CONCLUSION

Early detection and classification of HELLP syndrome helps in providing better management. Prompt referral, appropriate intervention and availability of life saving facilities like ventilators, dialysis units and blood products at the tertiary care centers will significantly reduce the maternal and neonatal morbidity and mortality. It is also important for expecting mothers to be aware of this condition and symptoms so that they can report earlier to the health care professionals.

REFERENCES

1. Pritchard JA, Weisman R, Jr, Ratnoff O D, et al-Intravascular hemolysis, thrombocytopenia and other hematological abnormalities associated with severe toxemia of pregnancy. N Engl J Med. 1954:250:89-98:10.
2. Weinstein L Syndrome of haemolysis elevated liver enzymes and low platelet count-A severe consequence of hypertension in pregnancy-Am J Obstet Gynecol. 1982;142:159-67.
3. Chawla Sushil, Marwaha Ashish, Agarwal Raju-HELLP or Help: A real Challenge. The Journal of Obstetrics and Gynaecology of India. 2015;65:172-175.
4. Abdulkadir Turgut, Oya Demirci, Elit Demirci, Mehmat Uludogan-Comparison of maternal and neonatal outcomes in women with HELLP syndrome and women with severe preeclampsia without HELLP syndrome-J Prenatal Medicine. 2010;4:51-58.
5. Sowjanya Kumari, Bhavani, Himabindu, Gitalakshmi-Clinical study on HELLP syndrome-Maternal and Perinatal outcome. IOSR-JDMS. 2016;15:71-76.
6. Lakshmi Narayana Kota, Kavitha Garikapati, Prabha Devi Kodey, Gayathri K B, Study on HELLP syndrome-maternal and perinatal outcome. Inte J Reprod Contracept Obstet Gynaecol 2017;6:714-719.
7. Audibert F, Friedman As, Clinical utility of diagnostic criteria for HELLP –Am J Obs Gyn, 2000
8. Ashwini Malleswara, Srushti R. Kanta, Prashanth Shivappa, A clinical study of HELLP syndrome and its outcome in a tertiary health care system:Int J Reprod Contracept Obstet Gynecol. 2016;5:4196-4199.

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