



Clinical Profile of Patients With HELLP & Partial HELLP Syndrome at A Tertiary Care Centre

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ABSTRACT

Background: HELLP syndrome is a recognized complication of preeclampsia–eclampsia.

Objective: To clinically profile patients with HELLP and partial HELLP coming to a tertiary care centre.

Methodology: Women >20wks of gestation hospitalized for hypertensive disorder were evaluated with comprehensive parameters.

Observations: Out of the total of 300 eligible participants, 34 patients (11.33%) had HELLP syndrome and 44 patients (14.66%) had partial HELLP syndrome. Out of the total 16474 deliveries at the institute during the study duration of 1.5 years, 34 (0.2%) patients had HELLP while 44 (0.26%) patients had partial HELLP syndrome.

Conclusion: HELLP syndrome is a serious complication in pregnancy with dreaded outcomes. Keeping the entity in mind while examining pregnant ladies with preeclampsia is recommended.

KEYWORDS : HELLP, Partial HELLP, Eclampsia, Pre-eclampsia.

INTRODUCTION

Hemolysis, elevated liver enzymes, and low platelets (HELLP) syndrome has been recognized as a complication of preeclampsia–eclampsia for decades. The incidence of HELLP syndrome has been reported to be 10–20%¹ amongst those with preeclampsia/eclampsia and 0.1%–0.6% of all pregnancies². Incidence of partial HELLP syndrome is unclear– around 21 to 24% in pregnancies with preeclampsia/eclampsia³.

Over years there has been some controversy over the diagnosis criteria of HELLP, with various classifications & methods proposed for the same⁴. The most frequently quoted one was established by Sibai et al in 1990⁵ in the Tennessee classification system, comprising of 1. Hemolysis -Peripheral blood smear showing s/o hemolysis, Serum bilirubin >1.2gm/ml, Serum lactate dehydrogenase >600 IU/L 2.Elevated liver enzymes- Serum aspartate transaminase or SGOT >70 IU/L. 3.Low Platelet Count- <1,00,000/cu.mm. Partial HELLP syndrome was defined by the presence of atleast one or two features but not complete syndrome⁵.

Clinicians & researchers across globe have reported serious adverse outcomes for both mother & foetus in HELLP/Partial HELLP syndrome. Aggressive management with expeditious delivery appears to yield the lowest perinatal mortality in such cases. The purpose of this study is to clinically profile patients with HELLP and partial HELLP coming to a tertiary care centre.

METHODOLOGY

Study Design: Institution based prospective observational study

Study setting: Tertiary care Medical College Hospital.

Study duration: January 2011 to June 2012.

Study Population: 300 eligible women >20wks of gestation hospitalized for hypertensive disorder

Operational Definitions:

- HELLP Syndrome- Defined by the Tennessee classification⁵.
- Partial HELLP Syndrome- Presence of atleast one or two features but not complete syndrome⁵.
- Preeclampsia- Minimum criteria 1) BP 140/90mmHg 20 weeks

of gestation

2) Proteinuria >300 for 24 hours or 1+ dipstick

Eclampsia- Seizures that cannot be attributed to any other causes in women with preeclampsia.

Hypertension- As per the criteria of national high blood pressure education programme⁶.

Participant Selection:

Inclusion Criteria-

All pregnant ladies admitted in hospital with elevated BP detected first time after 20 weeks; either with Proteinuria (Preeclampsia) or without it (Gestational Hypertension) and/or with convulsions (Eclampsia).

Exclusion Criteria-

- Presence of any of the following-
- Chronic hypertension
 - Liver disease
 - Renal disease
 - Hematological disease

Outcome measures

Incidence of HELLP/partial HELLP syndrome in patients with gestational hypertension, preeclampsia and eclampsia.

Maternal outcome in patients of HELLP/partial HELLP syndrome with respect to maternal age, parity, gestational age, classification of hypertensive disorders, gestational age at which diagnosis of hypertension is made, mode of delivery, time elapsed until discharge from hospital, maternal complications & maternal mortality.

Perinatal outcome in patients of HELLP and partial HELLP syndrome complicating gestation hypertension, preeclampsia and eclampsia with respect to intrauterine fetal death, intrauterine growth restriction, low birth weight, incidence of preterm birth and neonatal death.

300 eligible participants were randomly recruited from the OBGY wards. Detailed history was taken along with general, systemic & abdominal examination. Required blood investigations were also performed. Further assessment was done w.r.t. treatment given to the patients, induction/acceleration of labour, if needed and mode of delivery. Patients were followed up for the final outcome assessment

regarding maternal & perinatal morbidity & mortality.

OBSERVATIONS:

Out of the total of 300 eligible participants, 34 patients (11.33%) had HELLP syndrome and 44 patients (14.66%) had partial HELLP syndrome. Out of the total 16474 deliveries at the institute during the study duration, 34 (0.2%) patients had HELLP while 44 (0.26%) patients had partial HELLP syndrome.

Maximum patients with HELLP (61%) and partial HELLP (63.6%) belonged to 21-25 years age group. Nearly two third belonged to rural places. Majority i.e 91.17% of HELLP syndrome & 95.45% partial HELLP patient were from lower socio-economic status. Majority i.e. 64.7% of HELLP syndrome & 70.45% partial HELLP patient were emergency admission whereas 35% patients with HELLP syndrome & 29.5% patients with partial HELLP were booked (registered) cases. Most of the patients were primigravida i.e. 85.2% of HELLP and 59.09% with partial HELLP. Headache, edema feet, puffiness of face, blurring of vision & abnormal weight gain respectively were the major presenting symptoms in both HELLP & partial HELLP. The distribution according to the period of gestation revealed that most of the patients with HELLP belonged to 33-36 weeks (38.23%) & >36 weeks (35.29%) categories (Mean- 34.6 weeks); whereas patients with Partial HELLP most commonly presented >36 weeks of presentation (54.5%).

As for the medications received by participants, blood transfusion was given in 52.9% patients with HELLP & 56.8% with partial HELLP; while 55.9% patients with HELLP and 25% patients with partial HELLP received FFP. Platelet concentrate & plasma volume expanders were also used in 3 patients. MgSo4 was the most commonly prescribed anticonvulsant in both HELLP (41.1%) & Partial HELLP (38.6%). Corticosteroids were given for lung maturity in patient with <34-36 weeks of gestation. Betamethasone was given to 26.4% of HELLP cases & 18.18% of partial HELLP cases; while Dexamethasone was given to 11.7% & 9.08% patients with HELLP & partial HELLP respectively.

For induction of labour, Oxytocin was the most common agent used in both HELLP (64.7%) & Partial HELLP (54.5%); followed by Foley's catheter in one third of the participants & misoprost in the remaining few.

As for mode of delivery; in HELLP 20 (58.8%) patients delivered vaginally, of which 41.6% had full term vaginal delivery and 17.6% delivered preterm. In partial HELLP 25 (56.8%) patients delivered vaginally, of which 36.4% were full term vaginal deliveries and 20.5% were preterm deliveries. In HELLP 14 (41.1%) patients had LSCS, of which 7 (15.9%) were full term and 7 (15.9%) preterm LSCS. In partial HELLP 19(43.1%) patients had LSCS of which 8 (18.1%) were preterm and 11 (25%) were full term LSCS. Fetal distress was the most common indication for LSCS both in HELLP (52.1%) & Partial HELLP (42.2%).

Table 1- Treatment Modalities Received by the Participants with HELLP/Partial HELLP

	HELLP	%	Partial HELLP	%
Medications				
Blood Products				
Bld. Transfusion	18	52.9	25	56.8
Fresh Frozen Plasma	19	55.9	11	25.0
Platelet	7	20.6	5	11.4
Plasma volume expander	2	5.8	1	2.2
Dialysis	1	2.9	-	-
Anticonvulsants				
MgSo4	14	41.1	17	38.6
Dilantin	1	2.94	1	2.27
Corticosteroids				
Betamethesone	9	26.4	8	18.18
Dexamethesone	4	11.7	4	9.08

Induction of Labour				
Oxytocin	22	64.7	24	54.5
Foleys	12	35.3	16	36.36
Misoprostol	1	2.9	3	6.8
Mode of Delivery				
Vaginal				
FTND	14	41.6	16	36.4
PTND	6	17.6	9	20.5
LSCS				
FT-LSCS	7	15.9	11	25
PT-LSCS	7	15.9	8	18.1

Maternal complications assessment revealed that, out of 34 HELLP participants, disseminated intravascular coagulation (DIC) was the most common (17.6%) complication, followed by placental abruption & postpartum hemorrhage in 14.7% each. Among the 44 patients with partial HELLP syndrome in present study, most common complications were placental abruption in 13.6%, eclampsia in 13.6%, postpartum hemorrhage in 13.6% and DIC in 11.5% patients.

Table 2- Maternal Complications in Patients with HELLP/ Partial HELLP

Complications	HELLP	%	Partial HELLP	%
DIC	6	17.6	5	11.4
Placental abruption	5	14.7	6	13.6
PPH	5	14.7	6	13.6
Eclampsia	4	11.6	6	13.6
Postpartum collapse	-	-	3	6.8
Sepsis	2	5.8	2	4.5

Maternal mortality occurred in one (2.9%) patient with HELLP syndrome and cause of death was atonic postpartum hemorrhage with DIC with sepsis. In partial HELLP syndrome, maternal mortality was seen in 2 (4.5%) patients. Of this, cause of death in one patient was eclampsia with DIC with intracerebral hemorrhage with multiple organ dysfunction with hypertensive encephalopathy. While in other patient cause was placental abruption with postpartum collapse with acute renal failure.

As for neonatal complications, low birth weight (<2.5 kg) was seen in 79.4% patient with HELLP and 84.09% patient with partial HELLP. Prematurity (<37wks) was seen in 61% babies with HELLP as well as partial HELLP syndrome.

Table 3- Neonatal Complications in Patients with HELLP/ Partial HELLP

Complication	HELLP	%	Partial HELLP	%
LBW	27	79.4	37	84.09
Preterm	21	61.8	27	61.4
IUGR	6	17.6	7	15.9
IUD	3	8.8	7	15.9
Sepsis	1	2.9	1	2.3
Respiratory distress syndrome	1	2.9	3	6.8

Perinatal mortality was seen in 6 (17.6%) babies with HELLP syndrome of which 3 (8.8%) were stillborn, 2 (5.88%) died within 7 days and 1 (2.9%) died after 7 days. While in patient with partial HELLP

perinatal mortality was seen in 11 (25%) babies. Of these 7 (15.9%) were stillborn, 2 (4.54%) died within 7 days and 2 (4.54%) died after 7 days.

DISCUSSION-

In our study incidence of HELLP & partial HELLP syndrome were found to be 11.33% and 14.66% respectively. Abroug F et al reported the HELLP prevalence torange from 10-20%¹, while Abbade et al⁷ found incidence of 12.9%. Ann Indian study by Chabbra et al⁸ in 2006 found incidence of HELLP to be as high as 23.58%.

Most of patients in HELLP/Partial HELLP syndrome were in 21-25 year age group in our study, which was statistically significant (p<0.02); mean age was being 24.5 yrs. Studies by Abromovici et al⁹ and Kumru et al¹⁰ found no particular age correlation; while Sibai et al⁴ reported mean maternal age of 24.8 +/-6.1 yrs. Haddad et al¹¹ reported that HELLP syndrome cases are younger than severe preeclampsia cases. We reported most of the patients with HELLP to be primigravida (85.2%); which is a little higher than those reported by Weinstein et al¹² (60%) & Sibai et al⁴ (52%). Significant correlation of gestational age was found in patient with HELLP syndrome with maximum patients of gestation age between 33-36wks (mean- 34.6 weeks). Kumru et al¹⁰ found mean gestational age of 32.2+/-5.4 wks & Gasem et al¹³ found mean gestational age to be 32.4+/-5.2 weeks. This early presentation results in higher chances of prematurity. Almost all the deranged lab test results reported by peers in other studies were corroborated with similar findings in the present study.

More than 50% patients with HELLP and partial HELLP received blood transfusion. FFP was given to 55.9% patient of HELLP and 25% patients with partial HELLP. Sibai et al⁴ also reported increased rate of platelet and blood products transfusion in patient with HELLP syndrome. Kumru et al¹⁰ also observed that HELLP syndrome cases required more blood transfusion (45.5%) & frozen plasma (40.9%) transfusions. In our study it was found that 41% with HELLP and 38.6% of partial HELLP syndrome received MgSo4. One patient each of HELLP & partial HELLP was given inj dilantin as anticonvulsant. Sibai et al⁴ & Martin et al¹⁴ also preferred MgSo4 as anticonvulsant. Corticosteroid was given in our study for fetal lung maturity in patient with <34 weeks gestation. In HELLP 26.4% and in partial HELLP 18.18% patients received betamethasone. Dexamethasone was given in 11.7% patients with HELLP and 9.08% patients with partial HELLP syndrome. In a large RCT, Fonseca et al¹⁵ did not support the routine use of high dose dexamethasone; when maternal outcome is the variable.

The early termination of pregnancy in PHS group was very high in several studies, including ours, because when disease was diagnosed interruption of pregnancy was the decision, to avoid evolution from Partial HELLP to HELLP & avoid worsening maternal and perinatal picture. One Thailand study by Khumsat et al¹⁶ showed no statistical significance in mode of delivery in patient with HELLP though.

DIC was the most common (17.6%) complication in our study followed by placental abruption & postpartum hemorrhage in 14.7% each; which is in sync with most of previous studies. The maternal mortality was reported in total 3 patients with HELLP/partial HELLP; number which doesn't allow further interpretation. The causes of death matched with the available evidence though. In our study 61.4 % of patient of HELLP and partial HELLP syndrome were preterm. Murray et al¹⁷ found that 65% of infants were preterm. Findings of prematurity were also corroborative with those of Roelofsen et al¹⁸ (64%). Results of LBW were thought of being consequence of prematurity, as was reasoned by other researchers. The data from present study w.r.t. higher neonatal mortality & its causes, although small numbers, were in agreement with similar previous studies^{16,17,18}.

HELLP syndrome is a serious complication in pregnancy with dreaded outcomes. Keeping the entity in mind while examining pregnant ladies with preeclampsia is strongly recommended.

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