

# Assessment of perinatal and maternal outcome in patients of HELLP syndrome at tertiary health care centre

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## Abstract

**Background:** Hypertensive disorders during pregnancy represent a significant public health problem throughout the world, and preeclampsia is the most common of these disorders. **Aims and Objectives:** To study the perinatal and maternal outcome in patients of HELLP syndrome at tertiary health care centre. **Methodology:** This cross-sectional study was done in the patients who were admitted as diagnosis HELLP syndrome in the Department of OBGY at tertiary health care centre during the one year period i.e. March 2017 to March 2018. In the one year period there were 30 patients enrolled into the study. All the necessary data of the patients like age, symptoms, maternal and fetal outcome if any was noted. The statistical analysis was done by SPSS 19 version software. **Result:** In our study we have seen that The majority of the patients were in age group of >35 Yrs. i.e. 40.00% followed by 30-35 were 30.00%, 25-30 were 23.33%, 20-25 were 6.67%. As age increase the prevalence of the Syndrome also increased this trend is statistically significant (Pearson correlation co-efficient,  $r=0.90$ ,  $p<0.03$ ). The majority of the symptoms in the patients were Severe headache-90%, Vomiting in 80%, Epigastric pain in 78%, Visual disturbances- 42%, Shoulder pain -12%. The majority of the patients were having outcomes like PPH- 43.33%, Acute Renal Failure -30.00%, Abruptio placentae- 23.33%, Pulmonary edema-20.00%, DIC-16.67%, Death -13.33%. The majority of the neonates were having the outcome like Prematurity-50.00%, followed by Respiratory distress-40.00%, IUGR-30.00%, NICU admission-26.67%, IUD-16.67%, Early neonatal death-10.00%. **Conclusion:** It can be concluded from our study that HELLP syndrome was significantly higher incidence in old age majority of the symptoms in the patients were Severe headache Vomiting, Epigastric pain etc. the most common maternal outcomes were PPH, Acute Renal Failure, Abruptio placentae, Pulmonary edema majority of the neonates were having the outcome like Prematurity followed by Respiratory distress IUGR, NICU admission IUD.

**Key Words:** HELLP Syndrome, PPH, IUGR, IUD.

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## INTRODUCTION

Hypertensive disorders during pregnancy represent a significant public health problem throughout the world, and preeclampsia is the most common of these disorders<sup>1</sup>.

Villar *et al.* reviewed available information on the incidence and prevalence of preeclampsia/eclampsia utilizing large epidemiological studies<sup>2</sup>. They estimated that hypertension complicates approximately 5% of all pregnancies. Of these, approximately half are due to or associated with preeclampsia. Based on these estimates and case-fatality rates, they calculated that up to 40,000 women, mostly in developing countries, may die due to preeclampsia or eclampsia each year. The clinical course of severe preeclampsia results in progressive deterioration of both maternal and fetal conditions. Traditional management of severe preeclampsia has focused on maternal safety, with expedited delivery. Because these pregnancies are associated with high rates of maternal morbidity and mortality and with potential risks for the fetus, it is generally agreed that such patients should be

delivered if the disease develops at >34 weeks of gestation<sup>3,4</sup>. In patients with severe preeclampsia at <34 weeks of gestation, several authors have suggested some form of expectant management in an attempt to prolong gestation and improve perinatal outcome<sup>3-7</sup>. For patients with severe fetal growth restriction (FGR) with or without oligohydramios or evidence of maternal organ dysfunction (eclampsia, HELLP syndrome), some authors have recommended steroids to enhance lung maturation, with delivery 48 hours after initiating steroid administration<sup>3-9</sup>. So we have studied the Perinatal and maternal outcome in patients of HELLP syndrome at tertiary health care centre.

### MATERIAL AND METHODS

This cross-sectional study was done in the patients who were admitted as diagnosis HELLP syndrome in the Department of OBGY at tertiary health care centre during the one year period i.e. March 2017 to March 2018. In the one year period there were 30 patients enrolled into the study. All the necessary data of the patients like age, symptoms, maternal and fetal outcome if any was noted. The statistical analysis was done by SPSS 19 version software.

### RESULT

**Table 1:** Distribution of the patients as per the age

Age (Yrs.)	No.	Percentage (%)
20-25	2	6.67
25-30	7	23.33
30-35	9	30.00
>35	12	40.00
<b>Total</b>	<b>30</b>	<b>100.00</b>

(Pearson, r=0.90, p<0.03)

The majority of the patients were in age group of >35 Yrs. i.e. 40.00% followed by 30-35 were 30.00%, 25-30 were 23.33%, 20-25 were 6.67%. As age increase the prevalence of the Syndrome also increased this trend is statistically significant (Pearson correlation co-efficient, r=0.90, p<0.03).

**Table 2:** Distribution of the patients as per the various symptoms

Symptoms	No.	Percentage (%)
Severe headache	27	90%
Vomiting	24	80%
Epigastric pain	23	78%
Visual disturbances	13	42%
Shoulder pain	4	12%

The majority of the symptoms in the patients were Severe headache- 90%, Vomiting in 80%, Epigastric pain in 78%, Visual disturbances- 42%, Shoulder pain -12%.

**Table 3:** Distribution of the patients as per the various Maternal outcome

Maternal outcome	No.	Percentage (%)
PPH	13	43.33
Acute Renal Failure	9	30.00
Abruptio placentae	7	23.33
Pulmonary edema	6	20.00
DIC	5	16.67
Death	4	13.33

The majority of the patients were having outcomes like PPH- 43.33%, Acute Renal Failure -30.00%, Abruptio placentae- 23.33%, Pulmonary edema-20.00%, DIC- 16.67%, Death -13.33%.

**Table 4:** Distribution of the patients as per the neonatal outcome

Neonatal Outcome	No.	Percentage (%)
Prematurity	15	50.00
Respiratory distress	12	40.00
IUGR	9	30.00
NICU admission	8	26.67
IUD	5	16.67
Early neonatal death	3	10.00

The majority of the neonates were having the outcome like Prematurity- 50.00%, followed by Respiratory distress-40.00%, IUGR-30.00%, NICU admission-26.67%, IUD-16.67%, Early neonatal death-10.00%.

### DISCUSSION

The Haemolysis, Elevated Liver enzymes and Low Platelets count (HELLP) syndrome is a severe life-threatening manifestation of pre-eclampsia.<sup>10</sup> Pre-eclampsia is diagnosed when there is significant proteinuria in the presence of gestational hypertension. Weinstein considered HELLP syndrome as a variant of preeclampsia.<sup>11</sup> It develops in 10%-20% cases of severe preeclampsia.<sup>12</sup> It is multi-system disease attributed to abnormal vascular tone, vasospasm, coagulation defect and vascular endothelial damage. There is production of endogenous anti-oxidants, and when they are in overwhelming numbers, a condition of oxidative stress develops. Preeclampsia develops due to poor trophoblastic invasion in myometrium, and maternal spiral arteries retain their muscular walls. Impaired intervillous blood flow results in inadequate perfusion and ischaemia in the second half of pregnancy. The diagnosis of HELLP syndrome is based upon laboratory evidence of microangiopathic haemolytic anaemia, hepatic dysfunction and thrombocytopenia in a patient suspected to have pre-eclampsia.<sup>13</sup> HELLP syndrome may develop antepartum or postpartum. A study conducted on a series of 442 patients revealed that 70% developed syndrome in antepartum period, and 30% postpartum. Maternal and foetal complications of HELLP syndrome are significant. The maternal mortality rate is 2% and perinatal mortality is 33%.<sup>12</sup> Sibai BM *et al* reported

maternal mortality rate as high as 24%.<sup>5</sup> Samules *et al* reported 2% risk of hepatic rupture and 4- 38% incidence of disseminated intravascular coagulation (DIC).<sup>6</sup> HELLP syndrome frequently leads to acute renal failure in pregnancy, reported as 36% to 50%.<sup>16,17</sup> According to Isler *et al*, the most common cause of maternal death was cerebral haemorrhage.<sup>9</sup> Eeltink *et al* reported stillbirth rate of 10%, while neonatal mortality and morbidity was related to gestational age at delivery, and not to the presence or absence of HELLP syndrome.<sup>19</sup> In our study we have seen that The majority of the patients were in age group of >35 Yrs. i.e. 40.00% followed by 30-35 were 30.00%, 25-30 were 23.33%, 20-25 were 6.67%. As age increase the prevalence of the Syndrome also increased this trend is statistically significant (Pearson correlation co-efficient,  $r=0.90$ ,  $p<0.03$ ). The majority of the symptoms in the patients were Severe headache- 90%, Vomiting in 80%, Epigastric pain in 78%, Visual disturbances- 42%, Shoulder pain -12%. The majority of the patients were having outcomes like PPH- 43.33%, Acute Renal Failure -30.00%, Abruptio placentae-23.33%, Pulmonary edema-20.00%, DIC-16.67%, Death -13.33%. The majority of the neonates were having the outcome like Prematurity- 50.00%, followed by Respiratory distress-40.00%, IUGR-30.00%, NICU admission-26.67%, IUD-16.67%, Early neonatal death-10.00%. These findings are similar to Amrit Pal Kaur *et al*<sup>19</sup> they found Out of these 352 patients, 71 complicated with HELLP syndrome (20.17%). 17.9% had partial HELLP and 2.3% had complete HELLP syndrome. 30.16% had only EL, 31.75% had only LP, 87.3% had elevated LDH (depicted hemolysis). 4.76% had both EL and LP, 30.16% had both EL and elevated LDH, 20.63% had both LP and elevated LDH levels. Majority of the patients presented after 36 weeks of gestation. Only 5 patients had HELLP syndrome in the postpartum period. Among partial HELLP patients, 59.02% delivered vaginally and 40.98% delivered by LSCS and among complete HELLP patients 28.6% delivered vaginally and 71.4% delivered by LSCS. Perinatal mortality rate was 43.7%. Severe maternal complications such as PPH, DIC, abruptio placentae, pulmonary edema and renal failure were seen high among HELLP patients.

## CONCLUSION

It can be concluded from our study that HELLP syndrome was significantly higher incidence in old age majority of the symptoms in the patients were Severe headache Vomiting, Epigastric pain etc. the most common maternal outcomes were PPH, Acute Renal Failure, Abruptio placentae, Pulmonary edema. Majority of the neonates were having the outcome like Prematurity followed by Respiratory distress IUGR, NICU admission IUD.

## REFERENCES

1. Roberts JM, Pearson G, Cutler J, Lindheimer M. Summary of the NHLBI Working Group on Research on Hypertension during Pregnancy. *Hypertension* 2003; 41: 437-45.
2. Villar J, Say L, Gulmezoglu AM, Marialdi M, Lindheimer MD, Betran AP, et al. Pre-eclampsia eclampsia: a health problem for 2000 years. In: Critchley H, MacLean A, Poston L, Walker J, editors. *Preeclampsia*. London, England: RCOG Press 2003: 189-207.
3. Bergström S, Povey G, Songane F, Ching C. Seasonal incidence of eclampsia, its relationship to meteorological data in Mozambique. *J Perinat Med* 1992; 20: 153-8.
4. Odendaal HJ, Pattinson RC, Bam R, Grove D, Kotze TJ. Aggressive or expectant management for patients with severe preeclampsia between 28-34 weeks' gestation: A randomized controlled trial. *Obstet Gynecol* 1990; 76: 1070-5.
5. Sibai BM, Akl S, Fairlie F, Moretti M. A protocol for managing severe preeclampsia in the second trimester. *Am J Obstet Gynecol* 1990; 163: 733-8.
6. Chua S, Redman CW. Prognosis for preeclampsia complicated by 5 g or more of proteinuria in 24 hours. *Eur J Obstet Gynecol Reprod Biol* 1992; 43: 9-12.
7. Oláh KS, Redman CW, Gee H. Management of severe, early preeclampsia: is conservative management justified? *Eur J Obstet Gynecol Reprod Biol* 1993; 51: 175-80.
8. İmir GA, Kol İO, Kaygusuz K, Cetin A, Cetin M, Guvenal T, et al. Perinatal Outcomes in HELLP Syndrome, *J Turkish-German Gynecol Assoc* 2008; 9: 89-93.
9. Börekcı B, Bebek Z, İnceç M, Kadanalı S. Effects of Postpartum Corticosteroids in Patients with HELLP Syndrome, *J Turkish-German Gynecol Assoc* 2008; 9: 79-83.
10. Goodlin RC. Hemolysis, elevated liver enzymes and low platelets syndrome. *Obstet Gynaecol* 1984; 64: 449-50.
11. Weinstein L. Syndrome of hemolysis, elevated liver enzymes and low platelet count: a severe consequence of hypertension in pregnancy. *Am J Obstet Gynecol* 1982; 142: 159-67.
12. Shennan A. Hypertensive disorders. In: Edmond DK, (ed.) *Dewhurst's Text Book of Obstetrics and Gynaecology for Postgraduates*. 7th ed. London: Blackwell Sciences; 2007; pp 227-37.
13. Sabi BM, Ramadan MK, Usta I, Salama M, Mercer BM, Friedman SA. Maternal mortality and morbidity in 442 pregnancies with hemolysis, elevated liver enzymes and low platelets (HELLP syndrome). *Am J Obstet Gynecol* 1993; 169: 1000-6.
14. Sibai BM, Taslimi MM, El Nazer A, Amon E, Mabie BC, Ryan GM. Maternal - perinatal outcome associated with syndrome of hemolysis, elevated liver enzymes and low platelets in severe pre eclampsia/eclampsia. *Am J Obstet Gynecol* 1986; 155: 501-9.
15. Samules P, Cohen AW. Pregnancies complicated by liver disease and liver dysfunction. *Obstet Gynecol Clin North Am* 1992; 19: 745-63.
16. Drakeley AJ, Le Roux PA, Anthony J, Penny J. Acute renal failure complicating severe pre eclampsia requiring

- admission to an obstetric intensive care unit. *Am J Obstet Gynecol* 2002; 186: 253-6.
17. Selecuk NY, Odabas AR, Centikaya R, Tonbul HZ, San A. Outcome of pregnancies with HELLP syndrome complicated by acute renal failure (1989-1999). *Ren Fail* 2000; 22: 319-27.
  18. Isler CM, Rinehart BK, Terrone DA, Martin RW, Magann EF, Martin JN Jr. Maternal mortality associated with HELLP syndrome. *Am J Obstet Gynecol* 1999; 181: 924-8.
  19. Amrit Pal Kaur, Navdeep Kaur, S. P. S. Dhillon. HELLP syndrome and its implications on maternal and perinatal outcome. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology* Kaur AP et al. *Int J Reprod Contracept Obstet Gynecol*. 2018 Mar;7(3):1007-1011.

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