



ORIGINAL RESEARCH PAPER

Medical Science

ADVERSE MATERNAL COMPLICATIONS IN HELLP SYNDROME-A HOSPITAL BASED STUDY

KEY WORDS: Hellp Syndrome, Maternal Complications, Foetal Complications

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ABSTRACT

Objective: To determine maternal complications in patients of Haemolysis, Elevated Liver enzyme and Low Platelet Count (HELLP) syndrome.

Methods: The descriptive case series was conducted at the Gynaecology Unit of Jubilee Mission Medical College, Thrissur, over a period of 6 months from January 2018 to June 2018. It comprised of 40 consecutive women with pre-eclampsia along with altered platelet count who met the syndrome criteria. A pre-designed proforma was administered for data collection. Maternal and foetal outcomes were noted.

Result: Among the 40 mothers, vaginal delivery was the most common outcome (n=28; 70%). Pulmonary edema was found in 3 (1%) cases, acute renal failure in (n=7, 23%), disseminated intravascular coagulation in (n=12, 40%), post partum hemorrhage (n=5, 16%) and abruptio placenta in (n=3, 1%). Intrauterine growth restriction as a foetal outcome was observed in (n=18, 45%) cases. Pre-term birth was the result in (n=20, 50%) cases, and perinatal mortality was high (n=23; 57.5%). Statistical data with frequency and percentages were computed for mode of delivery, maternal and prenatal complications, APGAR score at 1 and 5 minutes and neonatal mortality.

Conclusion: The devastating effects of HELLP syndrome can be prevented by close antenatal follow up, timely prediction of risk factors and reasonable management strategies

INTRODUCTION

The Haemolysis, Elevated Liver enzymes and Low Platelets count (HELLP) syndrome is a severe life-threatening manifestation of pre-eclampsia¹. Pre-eclampsia is diagnosed when there is significant proteinuria in the presence of gestational hypertension. Weinstein considered HELLP syndrome as a variant of preeclampsia². It develops in 10%-20% cases of severe preeclampsia³. 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-eclampsia⁴. HELLP syndrome may develop ante partum or postpartum. The greatest challenges in caring for women with this disease are early diagnosis, instituting timely interventions and avoidance of associated complications. It is a common problem in under-developed countries. The aim of the study was to determine the maternal and foetal complications in pregnant women with HELLP syndrome. The rationale of study was that early detection of high-risk individuals by well-trained primary medical personnel and timely referral to advanced tertiary centers are helpful in improving perinatal and maternal outcomes.

SUBJECTS AND METHODS

The descriptive case series was conducted at the Gynecology Unit of Jubilee Mission Medical College, Thrissur, Kerala, over a period of 6 months from January 2018 to June 2018. All primigravidas and multigravidas who came with preeclampsia were included.

The diagnosis of HELLP syndrome was made using the criteria established by Sibai⁵, i.e. on the basis of hemolysis,

abnormal peripheral blood smear, increased lactic dehydrogenase (LDH) (> 600 U/I), increased total bilirubin (> 1.2 mg/dl), elevated liver enzymes [increased plasma aspartate amino transferase, (AST) > 70 U/I], low platelets (platelet count < 100 x 10⁹/l)⁶.

After informed consent was obtained, detailed history was taken and a thorough examination was done. Samples for complete blood picture (CP), especially platelet count, urine detailed report (DR), serum urea, serum creatinine, serum electrolytes, serum prothrombin time (PT), serum activated partial thromboplastin time (APTT), serum fibrinogen, liver function test (LFT), serum lactate dehydrogenase (LDH) were sent to the laboratory. Ultrasound was done for fetal well-being, especially for oligohydromnios and intrauterine growth restriction (IUGR). Maternal outcome in terms of caesarean section, vaginal delivery, acute renal failure, pulmonary edema, placental abruption, Disseminated intravascular coagulopathy (DIC), postpartum hemorrhage (PPH), need for hysterectomy, intensive care unit (ICU) stay, need for blood transfusion were noted. Foetal outcome in terms of IUGR, oligohydramnios, low birth weight (LBW), low APGAR score at 1 and 5 minutes and perinatal mortality were also noted. Patients were followed at 1st, 3rd and 7th day of delivery and blood CP, serum urea, serum creatinine, serum PT was repeated. All relevant informations were filled on a proforma. Statistical data with frequency and percentages were computed for mode of delivery, maternal and foetal complications, APGAR score at 1 and 5 minutes and neonatal mortality.

RESULT

The minimum age of the 40 women in the study was 19 years and maximum age 38 years. As for parity, 31(72%) were multiparous (1-5parity); 9 (20%) were nullipara (parity 0). History of pregnancy-induced hypertension was observed in 20 (52.5%) women. Hypertension was found in 31 (77.5%) patients. Mild anemia (hemoglobin [Hb] <7g/dl) was found in 12(30%) patients. None of them had severe anemia. Pedal edema was noted in 31 (77.5%), and jaundice was reported in 2 (5%) patients.

Regarding maternal outcome, vaginal delivery 28(70%) was the most common outcome. There was only 12(30%) caesarean section (Table-1, Graph-1). Out of the 30 patients who developed complications 3(1%) had pulmonary oedema. Acute renal failure (ARF) was observed in 7 (23 %), Disseminated intravascular coagulation (DIC) in 12(40 %), post partum hemorrhage in 5(16%) and abruptio placenta in 3(1 %) of women. Other studies have also shown that HELLP syndrome is associated with DIC and pulmonary edema, ARF, DIC and abruptio placenta.^{4,7,8,9}

Besides, 23 (57.5%) patients required transfusion of whole blood and packed cell volume according to the need, and 2 (5%) ended up in obstetrical hysterectomy, and 15(37.5%) patients had to be admitted to ICU for close monitoring and management. No maternal mortality was recorded. In terms of fetal outcome, IUGR was noted in 18(45%) fetuses and oligohydramnios was observed in 17(43%). Regarding gestational age at delivery, 20(50%) were term and 20(50%) were of pre-term gestation, considering 37 completed weeks as term (Table 2). At birth, 26 (65%) babies were alive while there were 14 (35%) intrauterine deaths and 9 (22.5%) neonatal deaths (Table 3, Graph 2)

Out of the 26 babies who had scores of 20 (76.9%) were poor (<7) and 5(19%) were good (>7) at 1 minute. At 5 minutes, poor APGAR scores were observed in 11(42.3%), while good score was observed in 15(57.6%). Regarding birth weight, 26(65%) babies were less than 2kg, while 14(35%) were greater than 2kg.

Maternal Complications(n=40)

Table 01

Maternal outcome	Frequency	Percentage (%)
Caesarean delivery	12	30
Pulmonary oedema	3	1
Acute renal failure	7	23
DIC	12	40
PPH	5	16
Abruptio placenta	3	1
Blood transfusion	23	58
Hysterectomy	2	5
ICU stay	15	38
Maternal mortality	00	00

Graph 1

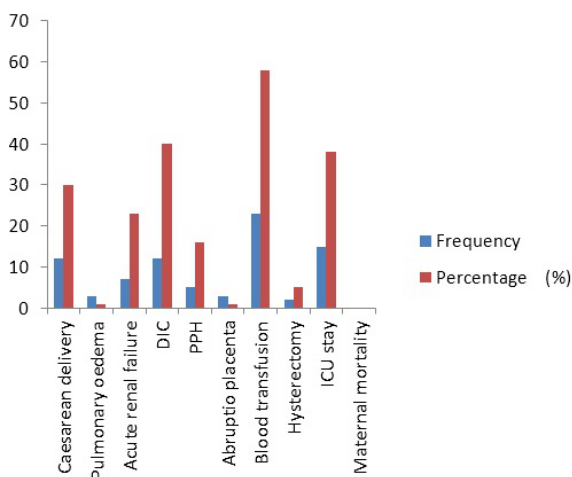


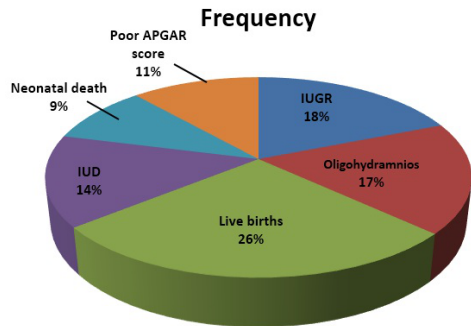
Table 2

Distribution of births according to gestational age		
	Frequency	Percentage(%)
Term AGA	20	50
Preterm	20	50

Table 3

Perinatal complications	Frequency	Percentage
IUGR	18	45
Oligohydramnios	17	43
Live births	26	65
IUD	14	35
Neonatal death	9	23
Poor APGAR score (at 5 minutes)	11	42

Graph 2



DISCUSSION

HELLP syndrome is a life-threatening complication, associated with substantial maternal and fetal morbidity and mortality¹. The present study shows that patient with HELLP syndrome are at increased DIC risk.

In our study perinatal mortality was 57.5%. Major contributory factors to high perinatal mortality were low birth weight and high number of pre-term deliveries. In our study the reason for high perinatal mortality was probably the late arrival or the late diagnosis due to variable presentation of the disease, as well as increased intrauterine death at the time of presentation. Most published evidence indicates low 5-minute APGAR score in the neonates born to mother with HELLP syndrome. In the present study, low APGAR score was found in 57.6% which is comparable with study of Kim H Y et al¹⁰

CONCLUSION

The high proportion of maternal and fetal complications reflects high-risk population at our perinatal centre, which serves as the main referral centre for many hospitals in the state. Because of this high maternal morbidity and mortality found in association with the HELLP syndrome, standard antenatal follow-up protocols should be applied, so as to obtain early diagnosis.

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