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# Pregnancy Induced Hypertension Led 'Hellp Syndrome' Due to Medication Non Adherence: A Case Report Establishing the Importance of Antenatal Clinic Care

**Pallavi Kadam[1] and Geetanjali Salimath[2*]**

[1]Department of Pharmacy Practice, KLE College of Pharmacy, Belagavi, Karnataka, India

[2]Department of Pharmacy Practice, KLE College of Pharmacy, Belagavi, Karnataka, India

**ABSTRACT**

Background: This case report aims to highlight the significance of Medication adherence in Pregnant women, especially with Pre-existing Gestational Hypertension or Gestational Diabetes Mellitus.

Case Presentation: A twenty-two-year-old female patient with an obstetric history of Primigravida with thirty weeks and three days of Period of gestation came with a referral letter stating "BP – 170/100 mmHg Capsule Nifedipine long stat". The patient came up with the complaint of one episode of vomiting in the morning followed by epigastric pain along with bilateral Grade Two Pedal edema. The patient was diagnosed with Severe Pre-eclampsia with Hemolysis-elevated liver enzymes-low platelet syndrome with intra-uterine growth restriction

Discussion: In this case, the Patient had a perception that the signs of pedal edema would gradually subside with self-care. Due to non-adherence to the anti-hypertensive drugs, minor complaints of the patient eventually lead to severe Pre-eclampsia leading to HELLP syndrome and other gestational complications such as Placental insufficiency, fetal growth restriction. Uncontrolled HTN affects kidney blood vessels & and weakens them causing no reabsorption of the proteins.

**Conclusion:** This case highlights the need for the establishment of a clinic where "Assessment of drug-related problems in pregnant women is conducted and Antenatal patient care including medication education, lifestyle modifications are provided lead by clinical pharmacist" in every Primary & tertiary health care hospital.

***Corresponding author**

Geetanjali S Salimath, Assistant Professor, Dept. of Pharmacy Practice, KLE College of Pharmacy, KLE Academy of Higher Education and Research (KAHER) Belagavi, Karnataka, India.

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**Keywords:** Medication Non-Adherence, Pregnancy, HELLP Syndrome, Pre-Eclampsia, Hypertension

**Abbreviations**

**POG:** Period of Gestation
**BP:** Blood Pressure
**HTN:** Hypertension
**HELLP:** Haemolysis, Elevated Liver Enzymes & Low Platelets
**B/L:** Bilateral
**LSCS:** Lower Segment Cesarean Section
**IUGR:** Intrauterine Growth Restriction
**PIH:** Pregnancy Induced Hypertension
**CPAP:** Continuous Positive Airway Pressure
**NICU:** Neonatal Intensive Care Unit

## Introduction

In 0.5 to 0.9% of pregnancies overall and 10-20% of cases of severe pre-eclampsia, hemolysis, high liver enzymes, and low platelet count (HELLP) syndrome is a significant life-threatening pregnancy complication. The bulk of cases, roughly 70%, occur between the twenty-seventh and thirty-seventh gestational weeks before delivery, with the remaining cases happening within forty-eight hours following delivery. Delivery is suggested if HELLP syndrome manifests after week thirty-four of pregnancy. A vaginal birth is desirable [1].

Noncompliance with medical therapy is a multidimensional problem involving patient and family, disease, physician, and regimen [2]. Pregnancy-related nonadherence can result in or promote maternal and fetal disorders' onset, increase the likelihood of hospitalization, and ultimately raise healthcare costs. These worries cause women to overestimate the Observed teratogenic danger of medications, which makes them reluctant to use them while pregnant. There is a widespread misconception about the safety of taking medications during pregnancy [3].

In this case study, a female patient's diagnosis of HELLP syndrome was brought on by nonadherence to antihypertensive medication.

## Case Description

At thirty weeks three days, a twenty-year-old female patient with an obstetric score of Primigravida presented with a referral letter reading "BP 170/100 mmHg, Capsule nifedipine stat was given, and maternal bradycardia with severe pre-eclampsia." The patient had one episode of vomiting at 9:30 am followed by epigastric pain. At the onset of 3rd Trimester, she was diagnosed with High BP readings and referred to a higher center and advised Tablet labetalol 200mg 1-0-1 which the patient did not take. Physical examination showed Pallor+ and B/L Grade two pedal edema+. The laboratory reports showed abnormal Hematological and Liver function tests (Table 1).

**Table 1: Laboratory Investigation Data**

| Parameters | Referred | Observed |
|---|---|---|
| Hemoglobin | 12.1-15.1 g/dL | 10.0 |
| Total count | 4-1l*103 cells/mm3 | 8680 |
| RBC | 3.8-5.2 | 3.70 |
| Platelets | 1.5-4.5*105 cells/mm3 | 83k |
| Creatinine | 0.7-1.2mg/dL | 0.5 |
| Na | 136- l45mEq/L | 138 |
| K | 3.5-5.4mEq/L | 3.8 |
| T-Bilirubin | 0-1.4mg/dL | 2.7 |
| Direct Bilirubin | 0-0.3mg/dL | 1.3 |
| T-Protein | 6.3-8.4g/dL | 6.0 |
| Albumin | 3.5-5.2g/dL | 2.9 |
| SGOT | 4-32 U/L | 515 |
| SGPT | 2-25U/L | 160 |
| LDH | 600IU/L | 1227 |

RBC-Red blood cells, Na-Sodium, K-Potassium, SGOT-serum glutamic-oxaloacetic transaminase, SGPT-serum glutamic-pyruvic transaminase

HELLP syndrome was treated with Fetal Emergency LSCS. A male neonate weighing 940 grams died after eleven days in the NICU following birth.

## Discussion

The patient in this situation does not have H/O HTN. The patient was diagnosed with High Blood Pressure two days ago and was given T. Labetalol 200mg (1-0-1) to take, which she did not do because her symptoms of pedal edema had subsided. This progressed to severe Pre-eclampsia and, finally, HELLP syndrome. The patient displayed all of the critical signs of HELLP syndrome, including hemolysis, increased liver enzymes, and a low platelet count. Because of the severe preeclampsia, there was intrauterine growth limitation with missing end diastolic flow. The maternal outcome is emergency LSCS; the infant dies after 11 days in the NICU.

The diagnostic criteria for HELLP according to the Tennessee classification system are hemolysis with elevated LDH: more than 600 U/L, AST is 70 U/L, and Platelets are 100.109/L [4].

Noncompliance with antihypertensive drugs might be intentional or unintentional. Intentional nonadherence occurs when patients change their dose regimen to meet their demands. According to one study, 39% of women who received one or more medicines indicated noncompliance when questioned within two weeks of delivery.

### Reasons for this Include

- Concerns about using the medication during pregnancy
- Potential adverse effects
- Absence of the complaints for which the medications were prescribed
- Believing that tablets are detrimental to their children

A recent study on women's opinions of medication usage during pregnancy and Breastfeeding discovered that women considered medication use during early or late pregnancy to be 'probably dangerous' or 'harmful' [5].

Why Antihypertensive adherence is important in Pregnancy-induced hypertension (PIH)?

All regularly used antihypertensives (labetalol and other beta-blockers, CCBs) reduce the risk of severe hypertension, but labetalol is also known to diminish proteinuria.

Antihypertensive medication is effective without harming the newborn, causing growth limits or premature birth.

Uncontrolled Pregnancy induced hypertension causes pre-eclampsia, eclampsia, and HELLP syndrome. It causes placental abruption, IUGR, and stillbirth in newborns. Severe PIH, if left untreated, can induce hazardous seizures and possibly death in the mother and fetus [6].

## Conclusion

✓ This example demonstrates that 'Medication Non-adherence' may be a life-threatening risk factor for HELLP Syndrome in PIH.

Medication Non-compliance is one of the most powerful hurdles to having a safe and healthy pregnancy. Clinical pharmacists can take measures to combat medication non-adherence by

I. Providing education about antenatal care and the use of drugs during pregnancy at each patient visit

II. Performing an appropriate activity at each visit, such as blood pressure and blood sugar monitoring, providing a pill organizer, disease knowledge test, visual analog scale etc.

III. This instance emphasizes the importance of establishing "Antenatal patient education and DRP assessment clinics led by clinical pharmacists" in every hospital.

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## Conflict of Interest

The author declares that there is no conflict of interest.

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