Title: Refractory HELLP syndrome with acute postpartum rebound transaminitis, epigastric pain and hepatomegaly concerning for hepatic rupture: A Case Report

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Background/Synopsis: Hemolysis, Elevated Liver Enzymes, and Low Platelets (HELLP) syndrome is a hazardous and potentially fatal complication of preeclampsia, affecting up to 20% of patients with severe disease. HELLP syndrome is definitively treated by prompt delivery of the fetus and the placenta with resolution of maternal symptoms, laboratory abnormalities and hypertension typically over the course of 3-7 days. In rare circumstances, HELLP syndrome may be further complicated by extreme pathophysiologic alterations which lengthen the clinical course of disease, influence changes in management and increase risks for significant maternal morbidity and in some cases mortality from sub-capsular liver hematomas and hepatic rupture with associated coagulopathy.

Objective/Purpose: To discuss refractory cases of HELLP syndrome with rebound transaminitis and recognize acute changes in maternal postpartum symptoms, condition and labs that may be seen with this phenomenon.

Case Report: A 30-year-old female presented to a local emergency department due to chest pain, shortness of breath and epigastric pain. After a negative cardiac evaluation, the patient was discovered to be approximately 33 weeks pregnant based upon ultrasound. The patient was also noted to have severe range blood pressures in the 160-190/80-100 range with lab abnormalities including a platelet count of 91000, AST 284 and ALT 244 and 2+ proteinuria. A coagulation profile was normal.

The patient was treated with IV hydralazine, IV magnesium sulfate and IM betamethasone and she was transported to our tertiary care center with a presumptive diagnosis of HELLP syndrome. The diagnosis of HELLP syndrome was confirmed and the patient underwent an immediate induction of labor on IV magnesium sulfate for seizure prophylaxis. The patient had an AST of 196, ALT of 230 and LDH of 313, creatinine 0.57 and platelet count 92000 at the time of admission. She had an uncomplicated vaginal delivery with an epidural. The neonate weighed 2200 g with Apgar scores of 8/9. The placenta was unremarkable grossly and histologically.

On postpartum day 1, *20 hours after delivery*, the patient felt well overall on IV magnesium sulfate. She reported a mild headache. She had no chest pain or epigastric pain. Blood pressures were below 160/110. Transaminases were downward trending: AST 64, ALT 128. Platelets 110,000, creatinine 0.69.

8 hours later, the patient complained of acute onset, extreme epigastric and right shoulder pain. She received IV morphine. AST increased to 340, ALT to 327. LDH was 546, hemoglobin 11.6, platelets 110000. A CT scan of the abdomen and pelvis was performed, revealing hepatomegaly with hepatic and periportal edema. There was no evidence of liver hematoma or rupture.

The patient was transported to the ICU for blood pressure treatment, seizure prophylaxis and pain management. A nifedipine drip was initiated for blood pressure control. The patient received IV steroids and she remained on IV magnesium sulfate Rx. The patient had acute mental status changes and a CT of the head was performed, negative for acute intracranial processes or PRES. Liver vessel Doppler studies were normal.

AST and ALT peaked the following day at 2325 and 1147, respectively. Over the next 5 days transaminases defervesced to 82 and 350 respectively. Other diseases including TTP, HUS and AFLP were ruled out. The patient's epigastric pain slowly decreased and her blood pressures improved after 5 days and she was transitioned to oral labetalol and nifedipine. The patient was discharged home on postpartum day 8 in stable condition.

Conclusion: HELLP syndrome is a relatively common, severe and unpredictable disease. This case highlights a rare critical rebound of transaminitis with maternal symptoms concerning for hepatic injury and significant morbidity. Rapid recognition of this phenomenon is crucial in order to initiate potentially life-saving supportive therapy.