HELLP SYNDROME

(Last updated 01/22/2020; Authors: Zhigang Chang*, MD; Reviewers: Hajrunisa Cubro, MD; Sarah Chalmers, MD)

PRESENTING COMPLAINT: variable; epigastric and/or right upper quadrant pain

FINDINGS
- A Check airway
- B Hypoxia
- C ↑BP
- D Variable altered (V,P,U,D)*
- E Neurological excitability (brisk deep tendon reflexes and clonus)
- U<sub>PC</sub> Intrauterine growth retardation
- L<sub>PC</sub> ↓Hgb, ↓Plt, ↑Cr, ↑BUN
  Other labs: Urine: Protein, ↓haptoglobin, ↑AST, ↑ALT, ↑Bilirubin, ↑LDH

*V (verbal), P (pain), U (unconsciousness), D (delirious)

U<sub>PC</sub> (point of care ultrasound)  L<sub>PC</sub> (point of care labs)

OTHER HISTORY
- Signs & Symptoms: hemolysis (microangiopathic), elevated liver enzyme levels, low platelet count; with or without hypertension; +/- signs and symptoms of pre-eclampsia such as epigastric or right upper abdominal quadrant pain, headache, nausea, and/or hypertension.
- Predisposing Conditions: previous history of HELLP, multiparity
- Differential Diagnosis: thrombotic thrombocytopenic purpura (TTP), Acute fatty liver of pregnancy, acute hepatitis, including herpes, autoimmune thrombocytopenic purpura, hemolytic-uremic syndrome, etc.

DIAGNOSTIC INTERVENTIONS
- Evaluation and Diagnosis:
  - Hemolysis: Peripheral blood smear (Presence of burr cells and/or schistocytes indicates microangiopathic hemolytic anemia); severe anemia and thrombocytopenia; elevated serum bilirubin >=1.2mg/dl; Reduced serum haptoglobin levels;
  - Elevated liver enzymes: (AST and ALT > 70IU/L); LDH>=2x2 × upper limit of normal are consistent with hemolysis
  - Presence of thrombocytopenia (Platelet count < 100,000U/uL)
THERAPEUTIC INTERVENTIONS
○ The only definitive treatment is delivery of the fetus.
○ Treatment should be supportive up to the point of delivery and managed in an appropriately monitored setting i.e. HDU/ICU
○ Management initially should include maternal and fetal assessment, control of severe hypertension (if present), initiation of magnesium sulfate infusion, correction of coagulopathy (if present), and maternal stabilization
○ Constant collaboration with the obstetrician and monitoring of fetal wellbeing.
○ Consider delaying delivery for a period if there is significant fetal immaturity (<34 weeks gestation).
○ Administration of system steroids to reduce the risk of neonatal respiratory distress syndrome (<34 weeks gestation).

2) CAUTIONS
● Complications:
  ○ Disseminated intravascular coagulation
  ○ Pulmonary edema/pleural effusions
  ○ Acute renal failure
  ○ Hepatic rupture, hepatic infarction and periportal liver dysfunction
  ○ Acute respiratory distress syndrome
  ○ Placental abruption
  ○ Eclampsia
  ○ Intracerebral hemorrhage
  ○ Maternal death
● The use of systemic corticosteroids in HELLP syndrome has not been proven

3) REFERENCES & ACKNOWLEDGMENT
Acknowledgment: Hajrunisa Cubro, MD
-European Society of Intensive Care Medicine, Obstetric critical care clinical problems 2013