

# 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  $\geq 1.2\text{mg/dl}$ ; Reduced serum haptoglobin levels;
- Elevated liver enzymes: (AST and ALT  $> 70\text{IU/L}$ ); LDH  $\geq 2 \times$  upper limit of normal are consistent with hemolysis
- Presence of thrombocytopenia (Platelet count  $< 100,000\text{U/uL}$ )

## **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 appropriated 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*

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