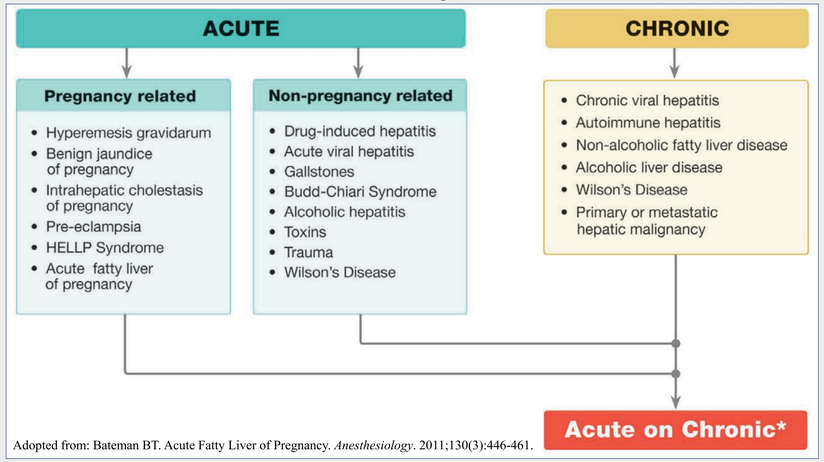
Acute Fatty Liver of Pregnancy?! HELLP!

Jebran Haddad M.D., Caitlin Sutton M.D.
Department of Anesthesiology, Baylor College of Medicine, Houston, TX 77030 USA

Introduction

Acute Fatty Liver of Pregnancy (AFLP) and syndrome of Hemolysis, Elevated Liver enzymes and Low Platelets (HELLP) are rare (0.01% and 0.1%, respectively), potentially fatal complications of pregnancy that can be difficult to clinically differentiate. We present a case of a patient with elevated liver enzymes whose clinical presentation is suggestive of both AFLP and HELLP.

Differential for Elevated Liver Enzymes



Adopted from: Bateman BT. Acute Fatty Liver of Pregnancy. *Anesthesiology*. 2011;130(3):446-461.

Case Presentation

A 37-year-old G2P1 with twin gestation at 34w 2d presents for GTT with a PMH of well-controlled HIV and borderline HTN. She reports daily emesis for 2 weeks with vague abdominal pain. CBC, LFTs and BMP were drawn prior to discharge home, and ranitidine was prescribed for suspected GERD. She was scheduled to return in 1 week for NST after passing the GTT.

Results: ALT 876, Cr 1.7, Glc 68, Plts 122.

Timeline

Returned to clinic at 34w 6d for NST
- BP 160/120 x2
- Labs reviewed
- Repeat ALT 657, Cr 2.5, Glc 90, Plt 90
- INR 1.5, TEG showed factor deficiency, Fibrinogen 127, LDH 657
- Admitted for preeclampsia with severe features and Mg infusion started

STAT CS for non-reassuring FHT
- PPH EBL 1250
- Carboprost x2, 6U FFP, 6U Plt, 4U PRBCs, 20U cryo, 2g fibrinogen concentrate
- POD 1: ALT 300, Cr 2.4, Glc 101, Plt 95, Fibrinogen 300, INR 1.3

POD 2-5
- Monitored on postpartum unit
- No adverse events; vitals returned to baseline
- ALT to 65, Cr 1.3, Plt 94, Fib 304, INR 1.3.

POD 15
- Returns to clinic with no significant events
- ALT 43, Cr 1.2, Plt 279, Fib 325
- BP 139/85
- Started HCTZ

Diagnostic Criteria

Swansea Criteria for AFLP(≥ 6)	
Vomiting	Abdominal pain
Polydipsia	Encephalopathy
Leukocytosis	Transaminitis
Elevated ammonia	Hyperbilirubinemia
Elevated urate	Hypoglycemia
Coagulopathy	Renal impairment
Ascites	Microvesicular hepatic steatosis

Mississippi Classification for HELLP	
Class 1	Plts < 50k/ml; AST or ALT >70; LDH >600
Class 2	Plts 50-100k/ml; AST or ALT >70; LDH >600
Class 3	Plts 100-150k/ml; AST or ALT >40; LDH >600

Learning Points

Pathophysiology:
- AFLP: maternal and fetal dysfunction in free fatty acid metabolism leading to microvesicular steatosis.
- HELLP: Free oxygen radical damage due to abnormal placentation and inflammatory milieu of Pre-Eclampsia.

Clinical distinction:
- AFLP: Prodrome of vomiting and vague abdominal pain lasting several weeks with severe elevation of transaminases.
- HELLP: Severe form of preeclampsia with hemolysis and thrombocytopenia with moderate elevation of transaminases.

Clinical significance:
- AFLP carries significant risk for mortality (up to 70%), perinatal mortality (20%), severe coagulopathy, hypoglycemia, severe AKI, encephalopathy with subsequent increased ICP.
- Some recommend communication with a liver transplant team when a diagnosis of AFLP is made.

Management:
- Plan for significant blood loss: large-bore IVs and arterial line for hemodynamic monitoring.
- Treat coagulopathy aggressively, administer anti-fibrinolytics and consider TEG to guide transfusion requirements.
- Communicate with ICU team early.

References

1. Bateman BT. Acute Fatty Liver of Pregnancy. *Anesthesiology*. 2011;130(3):446-461.
2. Minakami H, Morikawa M, Yamada T, Yamada T, Akaishi R, Nishida R. Differentiation of acute fatty liver of pregnancy from syndrome of hemolysis, elevated liver enzymes and low platelet counts. *J Obstet Gynaecol Res*. 2014;40(3):641-649.
3. Abildgaard U, Heimdal K. Pathogenesis of the syndrome of hemolysis, elevated liver enzymes, and low platelet count (HELLP): A review. *Eur J Obstet Gynecol Reprod Biol*. 2013.
4. Mikolasevic I, Filipec-Kanizaj T, Jakopcic I, et al. Liver disease during pregnancy: A challenging clinical issue. *Med Sci Monit*. 2018;24:4080-4090.