

Acute Fatty Liver of Pregnancy Increases Postpartum Hemorrhage and ICU Admission: Implications for Peripartum Anesthesia

Edward Sutanto BS; Fariha Hanif BS, MPH; Andrew Warburton MD;
Benjamin Hyers MD; Daniel Katz MD

May 3rd, 2026



Background and Hypothesis

- Acute fatty liver of pregnancy (AFLP) is a rare, life-threatening obstetric emergency characterized by acute hepatic failure in late pregnancy or the early postpartum period
- AFLP is associated with hepatic dysfunction, metabolic derangements, and coagulopathy, contributing to multi-system organ involvement
- Patients may develop complications including renal injury, encephalopathy, and hemodynamic instability, all of which complicate peripartum management
- Given the liver's central role in coagulation and metabolism, AFLP presents a unique risk for both hemorrhagic and systemic complications
- However, population-level data characterizing the full spectrum of morbidity and mortality in AFLP remains limited

Objective:

To evaluate maternal morbidity and mortality outcomes in AFLP patients compared to normal pregnancies

Hypothesis:

AFLP is associated with increased multi-system morbidity and mortality, including hepatic, renal, and hematologic complications

Study Design and Methods

- Retrospective cohort analysis using the TriNetX Global Collaborative Network
- Population: Peripartum women diagnosed with AFLP
- Comparison: AFLP vs normal pregnancy population

Primary outcome:

- Postpartum hemorrhage (PPH)

Secondary outcomes:

- Hepatic: portal hypertension, encephalopathy, acute pancreatitis, hypoproteinemia
- Renal: acute kidney injury (AKI), acute renal failure
- Hematologic: coagulopathy

Mortality

Statistical analysis:

- Hazard ratios (HR) with 95% confidence intervals
- Kaplan–Meier survival analysis
- Cohorts standardized after baseline matching

Results

TABLE 1 — HAZARD RATIOS & STATISTICAL SIGNIFICANCE (AFLP VS NORMAL PREGNANCY)

Outcome	Hazard Ratio (HR)	95% Confidence Interval	P-Value
PRIMARY OUTCOME			
Postpartum Hemorrhage (PPH)	1.370 ★ sig	(1.310, 1.430)	<0.001
SECONDARY OUTCOMES — HEPATIC			
Portal Hypertension	7.370 ★ sig	(5.260, 10.320)	<0.001
Encephalopathy	1.930 ★ sig	(1.610, 2.310)	<0.001
Acute Pancreatitis	2.900 ★ sig	(2.540, 3.310)	<0.001
Hypoproteinemia	1.890 ★ sig	(1.560, 2.290)	<0.001
SECONDARY OUTCOMES — RENAL			
Acute Kidney Injury (AKI)	1.700 ★ sig	(1.540, 1.870)	<0.001
Acute Renal Failure	1.700 ★ sig	(1.540, 1.870)	<0.001
SECONDARY OUTCOMES — HEMATOLOGIC & MORTALITY			
Coagulopathy	1.280 ★ sig	(1.160, 1.410)	<0.001
Mortality	1.290 ★ sig	(1.130, 1.460)	<0.001
All outcomes reached statistical significance (p < 0.001). Cohorts standardized to 73,130 patients across 170 health care organizations following baseline matching by demographics and comorbidities.			

FIGURE 1 — FOREST PLOT OF HAZARD RATIOS (AFLP VS NORMAL PREGNANCY)



Conclusion and Discussion

- Patients with AFLP had significantly higher multi-system morbidity and mortality
 - ↑ postpartum hemorrhage (PPH)
 - ↑ hepatic complications (portal hypertension, pancreatitis, encephalopathy, hypoproteinemia)
 - ↑ renal complications (AKI, acute renal failure)
 - ↑ coagulopathy
 - ↑ mortality
- All outcomes demonstrated statistically significant increases compared to normal pregnancy
- Clinical interpretation: AFLP represents a severe multi-organ disease process driven by hepatic dysfunction, leading to widespread metabolic, hematologic, and end-organ complications
- Implications: Supports the need for early recognition, multidisciplinary management, and close peripartum monitoring, particularly for coagulopathy and end-organ dysfunction
- Limitations: retrospective design, reliance on ICD coding, limited granularity on timing/severity of disease
- Future directions
 - Larger multicenter studies to further characterize disease severity and progression
 - Prospective studies evaluating timing of intervention and anesthetic management strategies
 - Development of clinical risk stratification and management algorithms for AFLP patients