Severe Acute Fatty Liver of Pregnancy at Townsville University Hospital

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Background – Acute fatty liver of pregnancy (AFLP) is a rare obstetric emergency that can cause severe maternal and fetal complications. It is characterised by maternal liver dysfunction and/or failure that requires prompt delivery and multidisciplinary support. Risk factors for AFLP include nulliparity, multiple gestation, preeclampsia, HELLP syndrome and male fetal sex. Diagnostic certainty has improved with the use of the Swansea criteria, though other pregnancy-induced liver diseases require consideration.

Case – SG (38yo G1P0 K35+3, DCDA twins) presented to Townsville University Hospital with malaise, intermittent headaches, reduced fetal movements, peripheral swelling and abdominal discomfort on a background of diet-controlled gestational diabetes. On arrival, SG was normotensive with brisk reflexes and bilateral pitting oedema to the knees, jaundice of the face and a normal CTG.

Laboratory samples were icteric with significant transaminitis (ALT 852, AST 746) and hyperbilirubinaemia (total bilirubin 118). Renal injury (creatinine 157, eGFR 35), coagulopathy (fibrinogen 1.1, APTT 45, INR 1.7), worsening anaemia and hypoglycaemia were also present.

SG underwent an emergency caesarean section that evening for significant multiorgan dysfunction and remained in the intensive care unit for three days postoperatively with fluctuating levels of consciousness. Her estimated blood loss was two litres and postpartum abdominal imaging was unremarkable. SG was discharged home after two weeks of multidisciplinary care from gastroenterology, haematology, intensive care, obstetric medicine, anaesthetics, midwifery and allied health professionals.

Discussion – This case highlights the vague symptomatology and rapid deterioration AFLP can present with. Diagnostic confidence with prompt intervention and multidisciplinary involvement are paramount for patient outcomes.

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The Swansea criteria are listed below. The number of criteria needed for a positive diagnosis has varied from six to nine in research studies.

Table 2 Swansea Criteria for the Diagnosis of Acute Fatty Liver of Pregnancy[16]

Six of the features below are required for the diagnosis	
Clinical features	▪ Nausea and vomiting ▪ Abdominal pain ▪ Encephalopathy ▪ Polyuria or polydipsia
Laboratory features	▪ Bilirubin >0.8 mg/dL ▪ Hypoglycemia <72 mg/dL ▪ WBC >11x10^9/L ▪ AST or ALT >42 units/L ▪ AKI or Cr >1.7 mg/dL ▪ Coagulopathy or PT >14 sec ▪ Ammonia >47 μmol/L ▪ Urate >340 μmol/L
Ultrasonographic features	Ascites or echogenic liver
Histologic features	Microvesicular steatosis on liver biopsy

AKI, acute kidney injury; ALT, alanine transaminase; AST, aspartate transaminase; Cr, creatinine; PT, prothrombin time; WBC, white blood cell count.

Sodium Level	122 (L)
Potassium Level	4.5
Chloride Level	95
Bicarbonate Level	18 (L)
Anion Gap	9
Glucose Level	4.1
Urea	9.4 (H)
Creatinine	159 (H)
Urea/Creat	59
GFR (estimated)	35 (L)
Urate	0.49 (H) (c) Modi
Protein (Total)	51 (L)
Albumin Level	22 (L)
Globulin	29
Bilirubin (Total)	104 (H)
Bilirubin (Conj.)	87 (H)
Alkaline Phosphatase	487 (H)
Gamma-GT	78 (H)
Alanine Transaminase	844 (H)
Aspartate Transaminase	686 (H)
Lactate Dehydrogenase	585 (H)
Osmolality (Calculated)	261 (L)

Protein Chemistry	
Urine Random Protein Level	480 (H)
Protein/Creatinine	86 (H)
Coagulation	
INR	1.5 * (H)
Prothrombin Time	18 * (H)
Echis Time	
APTT	33 *
Mixing Studies for APTT	
Fibrinogen (Clottable)	[Multiple][(L)]
Fibrinogen (Derived)	1.6 * (L)
Vitamin B12	
Folate Level	