



Congress Abstract

# Challenges in the Differential Diagnosis of HELLP Syndrome and Atypical Hemolytic Uremic Syndrome in Obstetric Thrombotic Microangiopathy: A Case Report

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## ABSTRACT

**Introduction:** Obstetric thrombotic microangiopathies (TMAs) are rare but potentially life-threatening disorders that include HELLP syndrome, thrombotic thrombocytopenic purpura, and atypical hemolytic uremic syndrome (aHUS). Their overlapping clinical features often complicate timely diagnosis. Differentiating HELLP syndrome from aHUS is particularly challenging when TMA persists and acute kidney injury (AKI) progresses after delivery. Early recognition of aHUS is crucial because targeted complement-inhibitory therapy may significantly improve outcomes.

**Case Presentation:** A 41-year-old woman (gravida 5, para 3) with a high-risk pregnancy, including a history of preeclampsia complicated by placental abruption and recurrent pregnancy loss, was admitted at 28 weeks' gestation with severe preeclampsia complicated by obstetric TMA. On admission, she presented with hypertension (150/90 mmHg) and proteinuria (1.0 g/day), while hemoglobin, platelet count, and kidney function were within the normal range.

On the fourth day of hospitalization, an emergency cesarean section was performed because of progressive placental abruption. The postoperative course was complicated by HELLP syndrome, sepsis, massive hemorrhage, disseminated intravascular coagulation, microangiopathic hemolytic anemia, thrombocytopenia, and severe anuric AKI. Peak laboratory values included hemoglobin 48 g/L, platelet count  $48 \times 10^9/L$ , serum creatinine 563  $\mu\text{mol/L}$ , aspartate aminotransferase 560 U/L, lactate dehydrogenase 5,844 U/L, schistocytes detected on two peripheral blood smears, and a negative direct Coombs test.

Despite elimination of the obstetric trigger by delivery, followed by relaparotomy and hysterectomy, TMA manifestations and dialysis-dependent AKI persisted, prompting differential diagnosis between severe HELLP syndrome and aHUS. The patient underwent hemodiafiltration followed by 24 hemodialysis sessions and remained on maintenance hemodialysis for 2.5 months after discharge. Subsequently, kidney function partially recovered, allowing discontinuation of dialysis, although significant renal impairment persisted (serum creatinine 250–300  $\mu\text{mol/L}$ ).

**Conclusion:** This case highlights the diagnostic challenge of distinguishing HELLP syndrome from aHUS in obstetric TMA. Persistence of TMA for more than 48–72 hours after removal of the obstetric trigger, together with ongoing microangiopathic hemolysis, thrombocytopenia, and severe AKI, should prompt evaluation for aHUS, including assessment of ADAMTS13 activity, complement abnormalities, and genetic risk factors to guide timely initiation of complement-inhibitory therapy. The case emphasizes the importance of early multidisciplinary management and long-term

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nephrology follow-up, even in patients who achieve partial recovery of kidney function.

**Keywords:** Thrombotic Microangiopathy

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