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DANGEROUS DUO IN PREGNANCY: LOW PLATELETS AND LFT ALTERATIONS IN DENGUE FEVER

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Abstract:
Dengue fever is a mosquito-borne viral disease prevalent in tropical regions, posing significant risks to pregnant women, who are more susceptible to severe outcomes. This case series presents four cases of dengue fever in pregnant women. The cases illustrate the diagnostic challenges posed by overlapping clinical symptoms, such as fever, myalgia, and gastrointestinal disturbances, which are common to multiple tropical febrile illnesses. Laboratory tests, including serology for dengue, were instrumental in confirming the diagnosis. Management primarily involved supportive care, focusing on hydration and close monitoring of platelet counts and liver function tests. This case series emphasizes the importance of early diagnosis and a multidisciplinary approach in managing dengue during pregnancy to avoid severe maternal and fetal complications. None of the patients in this series experienced adverse fetal outcomes during their treatment, highlighting the potential for favorable outcomes with timely intervention. This series underscores the need for high clinical suspicion and tailored treatment strategies in endemic regions.

Keywords: Dengue fever, pregnancy, febrile illness, case series.

INTRODUCTION

Dengue fever, a mosquito-borne viral disease, continues to pose a significant public health burden, particularly in tropical and subtropical regions. The disease presents a broad clinical spectrum, ranging from asymptomatic or mild febrile illness to severe dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS), both of which can be life-threatening. Pregnant women are particularly vulnerable to the effects of dengue infection, with both maternal and fetal outcomes potentially compromised.

Dengue fever is caused by the dengue virus, a member of the Flaviviridae family, transmitted primarily by the Aedes aegypti mosquito. Globally, approximately 390 million people are infected with dengue each year, with about 96 million presenting with symptomatic disease. There are four serotypes of the dengue virus (DENV-1 to DENV-4), and infection with one serotype confers lifelong immunity only to that specific serotype, leaving individuals vulnerable to severe disease with subsequent infections by other serotypes.

The physiological changes that occur during pregnancy, such as shifts in immune response and increased vascular permeability, can predispose pregnant women to more severe outcomes from dengue infection. Pregnant women with dengue are at higher risk for complications like preterm labor, low birth weight, and miscarriage. Additionally, there is an increased risk of progression to severe forms of the disease, including DHF and DSS, which require close monitoring and intervention.

The management of dengue in pregnancy requires careful monitoring and supportive care, primarily focusing on hydration and regular assessment of hematological parameters. The management plan must account for both the mother’s and the fetus's well-being, considering the potential risks associated with certain treatments during pregnancy. This case series presents four cases of dengue fever in pregnant women. These cases highlight the complexities in diagnosing febrile illnesses in pregnancy and the importance of early recognition and a comprehensive, multidisciplinary management approach.

Case Details:

Case 1:

A G2A1 woman at 32 weeks + 3 days gestation presented with a 3-day history of fever and 2 days of myalgia. Laboratory tests confirmed Dengue IgG, IgM, and NS1 positivity. The patient was advised to maintain adequate hydration, undergo complete blood count (CBC) monitoring, and liver function tests (LFTs). Supportive management was given. CBC monitoring showed an increasing trend in platelet count as the patient’s condition improved. Dengue and preeclampsia can look quite similar in pregnancy, with symptoms like low platelets, raised liver enzymes, headache, and abdominal pain. However, their causes are very different—dengue is a viral infection triggering inflammation, while preeclampsia is due to endothelial dysfunction.

Case 2:
A 35-week primigravida, with a dichorionic diamniotic (DCDA) twin pregnancy conceived via in vitro fertilization (IVF), presented with 2 days of shivering. She denied having a history of fever or abdominal pain but reported a burning sensation during urination and two episodes of loose stools with vomiting (non-bilious and non-blood stained). Serial platelet counts revealed a decreasing trend from 1.83 lakh to 1.03 lakh. The patient tested positive for Dengue IgG and IgM. Conservative management was done.

Case 3:
A G2A1 woman at 12 weeks + 3 days gestation was admitted for evaluation of fever. Laboratory investigations revealed Dengue NS1 positivity, alongside deranged LFTs, leukopenia, thrombocytopenia, and hypokalemia. She also had moderate anemia. The patient received treatment, including proton pump inhibitors, antiemetics, paracetamol, intravenous fluids, and potassium chloride (KCl) administered to correct her potassium levels. In dengue, transaminase levels can be markedly elevated (>1000 IU/L), and thrombocytopenia is often more severe. Preeclampsia-related liver enzyme elevation is milder, and hemoconcentration is uncommon. Elevated hematocrit in dengue and angiogenic markers in preeclampsia aid differentiation.

Case 4:
A G2P1L1 woman at 10 weeks + 1 day gestation was admitted to the ICU due to hyperemesis gravidarum, severe dehydration, oliguria, constipation, and hypokalemia. She tested positive for Dengue IgG, IgM. The patient was placed on nil per oral (NPO) and treated with intravenous fluids, proton pump inhibitors, antiemetics, Inj Thiamine. Potassium correction was given with 40 mEq of KCl and Inj MgSO4 was given. After treatment, she tolerated feeds and resumed normal diet intake. Dengue usually presents with normal or low blood pressure and lacks proteinuria. Regular BP monitoring and urine analysis help in distinguishing the preeclampsia and dengue.

Table 1: Case details

Case	**CASE 1**	**CASE 2**	**CASE 3**	**CASE 4**
Gestational Age	G2A1/ 32 weeks + 3 days	Primi / 35 weeks	G2P1L1 / 10 weeks 1 day	G2A1 / 12 weeks 3 days
C/F (Clinical Features)	C/o fever x 3 days, C/o myalgia x 2 days	C/o shivering - 2 days	C/o excessive vomiting, C/o decreased urination	C/o vomiting - 3 days, C/o fever - 3 days
Biochemical	Dengue IgG, IgM, NS1	Dengue IgG, IgM	Dengue IgM, IgG	Dengue NS1, Scrub typhus
Investigations On Admission	Hb - 12.6, Platelet - 1.45, TLC - 7150, D. Bilirubin - 0.5, SGOT - 93, SGPT - 26, Albumin - 3	Hb - 12, Platelet - 1.04, TLC - 12,400, D. Bilirubin - 0.04, SGOT - 31, SGPT - 16, Albumin - 2.3	Hb - 13.2, Platelet - 1.39, TLC - 7970, D. Bilirubin - 1.4, SGOT - 32, SGPT - 30, Albumin - 4.1	Hb - 9.8, Platelet - 1.64, TLC - 2920, D. Bilirubin - 0.22, SGOT - 25, SGPT - 15, Albumin - 3.5

DISCUSSION:

The management of febrile illnesses in pregnancy presents significant challenges, especially in regions where dengue is endemic. This case series highlights the diagnostic dilemmas and clinical management of four pregnant women presenting with dengue fever.

Dengue fever during pregnancy poses unique diagnostic challenges, as its clinical presentation often overlaps with other febrile illnesses common in tropical regions. However, in this series, dengue was the sole infection diagnosed. Serological tests (such as IgG, IgM, and NS1 antigen testing) played an important role in confirming dengue. The reliability of these tests is crucial in ruling out other tropical illnesses with overlapping symptoms.

Management of dengue during pregnancy primarily focuses on supportive care, including hydration, close monitoring of vital signs, platelet counts, and liver function tests. In the present cases, all patients underwent regular CBC monitoring. The increase in platelet counts in Case 1 indicated a favorable response to supportive treatment, highlighting the effectiveness of early hydration therapy.

The impact of dengue fever on pregnancy outcomes varies, with potential complications including preterm birth, low birth weight, and in some cases, miscarriage or stillbirth. Fortunately, in the present case series, none of the patients experienced adverse fetal outcomes during their treatment. The increased risk of maternal complications,

including severe hemorrhagic manifestations or organ dysfunction, highlights the importance of close maternal monitoring.

Gupta et al. (2023) observed that pregnant women with dengue fever exhibited higher rates of complications, such as preterm birth, low birth weight, and fetal loss. Thrombocytopenia and liver function abnormalities were common in severe cases, necessitating closer surveillance.

Khan et al. (2023) reported that even mild cases of dengue during pregnancy could lead to adverse fetal outcomes, such as intrauterine growth restriction (IUGR) and preterm birth, and noted a higher incidence of vertical transmission during the third trimester. Dengue fever in pregnancy presents a diagnostic dilemma due to its clinical overlap with gestational hypertensive disorders, particularly preeclampsia and HELLP (Hemolysis, Elevated Liver enzymes, Low Platelets) syndrome. Both conditions can manifest with thrombocytopenia, elevated liver transaminases, and systemic symptoms such as headache, nausea, and abdominal pain. Therefore, distinguishing between the two is crucial, as the management strategies and prognosis differ significantly.

CONCLUSION:

This case series illustrates the complexities involved in diagnosing and managing dengue fever in pregnant women. The similarity in symptoms between dengue and other tropical infections necessitates accurate serological diagnosis and vigilant clinical monitoring. A multidisciplinary approach remains essential, especially in endemic regions. The favorable outcomes in this series underscore the importance of early detection and timely supportive care. Ongoing vigilance is required to prevent maternal and fetal complications in cases of dengue during pregnancy.

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