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Dengue Fever in Pregnant Women with a Favorable Outcome

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Abstract **Case Report**

Dengue fever is a viral infectious disease, it manifests itself from mild to severe severity, in some cases to fatal outcomes. The number of cases of dengue fever has been increasing in recent years. The results of many studies have also shown adverse effects on pregnant infected women. This article describes the clinical course of Dengue fever in pregnant women, which occurred in moderate severity and without complications. Dengue fever in a pregnant woman manifested itself in the form of complaints of pain in the epigastric region, bleeding gums and petechial hemorrhages within 1 day. She had a high fever for 5 days before going to the hospital. Upon admission, her body temperature was 37 °C, blood pressure was 110/80 mmHg, pulse rate was 80 beats per minute, respiratory rate was 20 beats per minute. She had mild dehydration, normal breathing and heartbeat. The height of the bottom corresponds to the gestation period of 31 weeks, and the fetal heart rate was 144 beats per minute. Petechiae measuring at least 1-2 m in diameter were found around her face, forearms and both basal areas. In a laboratory study, the results showed changes in the number of platelets in the form of thrombocytopenia, leukocytopenia and in the biochemical analysis of blood by increasing the concentration of C-reactive protein and the detection of antibodies in serum during serological analysis. Although many studies have shown that Dengue during pregnancy increases the risk of preeclampsia, hemorrhagic dengue fever (HLD), fetal distress, premature birth, cesarean section and maternal mortality and intrauterine development delay and stillbirth consequences. This clinical case concludes with favorable outcomes. But the physiological effects of dengue fever during pregnancy (for both mother and child), depending on the trimester, as well as research and treatment methods require further study, especially in the region of endemic zones and India.

Keywords: Dengue, Pregnancy, Petechiae hemorrhage, Fetal.

BACKGROUND

Dengue, a mosquito-borne flavivirus infection, is endemic in Southeast Asia. Currently, the incidence has been increasing among adults [1]. Dengue fever is a single-stranded RNA virus with 4 serological types, mosquito-borne viral disease transmitted principally by the mosquito Aedes aegypti [4]. The clinical manifestations of dengue fever in pregnancy are varied, ranging from self-limited infection to plasma leakage, Dengue hemorrhagic fever, shock, or organ failure resulting in death [2]. Atypical syndromes are increasingly recognized, such as neurological manifestations, myocarditis, acute kidney injury and cholecystitis. Therefore, we cannot identify the correct complication which are caused by the dengue fever. Many authors in their research lead to negative consequences for pregnant infected women. In a review on this subject, we aimed to describe the effect of Dengue fever on pregnancy, the outcome of which was favorable.

CASE REPORT

A 26-year-old, G1P0A0, 31 weeks pregnant woman, presented to the hospital with complaints of epigastric pain, bleeding per gum and petechiae hemorrhage for 1 day [8]. She had a high-grade fever for 5 days prior to admission. After admission her fever drops in 3days and IV fluids, Antiemetic, PPI are given [3]. She recovered well with no fetal or maternal abnormalities.

Day of illness	Hemoglobin	Hematocrit	White blood cells
Day 1	10.6 gm%	55%	1.2 (10/mm)3
Day 2	10.2 gm%	50%	2.4 (10/mm)3
Day 3	10.1 gm%	35%	8.0 (10/mm)3

Case Presentation

A 26-year-old, gravida 1, 31 weeks pregnant woman, presented to the hospital with complaints of epigastric pain, bleeding per gum and petechiae hemorrhage for 1 day. She had a high-grade fever for 5 days prior to admission. She was first seen at antenatal clinic at 12 weeks pregnancy, and there was no abnormality detected until this presentation. Her past medical and family history were unremarkable.

On admission, her body temperature was 37°c, blood pressure was 110/80 mmHg, pulse rate was 80/min and respiratory rate was 20/min. She had mild dehydration, normal breathing sound and heart sound. Her liver was enlarged 1 cm below the right costal margin with mild tenderness. The fundal height was compatible with 31 weeks' gestation and fetal heart rate was 144 beats/min. Petechiae sized 1-2 mm in diameter were found around her face, forearms and both pretibial areas.

The pregnancy continued until term without any complication and she delivered vaginally a healthy female baby.

Chief Complaints

Presented with epigastric pain for 1 day. She also had a high-grade fever for 5 days. The physical examination, complete blood counts as well as serology confirmed dengue fever. The patient was under conservative treatment despite severe thrombocytopenia. She was well at the 3rd day of discharge and 1-week follow-up. The pregnancy continued until term without any complication and she delivered vaginally a healthy female baby.

History of Diabetes Mellitus	No
History of Hypertension	No
History of Coronary Artery disease	No
History of Asthma	No
Past History:	No
Surgical	Nil

SOCIAL HISTORY

Smoking	No
Ethanol	No
FAMILY HISTORY	Nil significant

GENERAL EXAMINATION

Weight	65Kg
Cyanosis	Nil
Oedema feet	Nil
Icterus	Nil
Temperature	37°c
B.P	110/80 mmHg
CVS	S1S2(+)
RS	Bilateral air entry(+)
Abdomen	Soft
CNS	No focal neurological deficit
Pallor	Nil
Clubbing	Nil
Oral Cavity	Normal
Lymph Nodes	Nil
Pulse	150/min

Laboratory analysis on admission gave the following result:

BILURUBIN, TOTAL – SERUM

(18-Jul-2024 01:10 PM) BILIRUBIN, TOTAL SERUM 0.4 mg\dL, (19-Jul-2024 05:10 PM) BILIRUBIN, TOTAL SERUM 0.3 mg\dL, (20-Jul-2024 01:30 PM) BILIRUBIN, TOTAL SERUM 0.5 mg\dL (Normal range for adult: Upto1.3)

C-REACTIVE PROTEIN (CRP)

(18-Jul-2024 01:10 PM) C-REACTIVE PROTEIN (CRP) **40.0 mg\L,** (19-Jul-2024 05:10 PM) C-REACTIVE PROTEIN (CRP) **56.0 mg\L**, (20-Jul-2024 01:30 PM) C-REACTIVE PROTEIN (CRP) **45.0 mg\L** (Normal range for adult: <5.0) [9].

CBC

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Hemoglobin	10.6 gm%	11.5-16.5
Neutrophils	**30%**	40-80
Lymphocytes	23%	20-40
Eosinophils	02%	01-06
Monocytes	02%	2-10
Packed cell volume	33%	37-47
WBC count	**1.2 (10/mm)3**	4-11
Platelet count	**100 (10/mm)3**	150-450
RBC count	4.4 Million/ul	3.7-5.6
MCV	75fl	75-95
RDW	19%	11.6-14.0
MCH	24 pg	26-32

These results suggest the patient is likely experiencing leukopenia, thrombocytopenia, and anemia, which are common in dengue fever. WBC Count (1.2 x 103/mm3): Significantly below the normal range (4-11 x 103/mm3). Leukopenia is a hallmark of dengue infection. Platelet Count (100 x 103/mm3): Below the normal range (150-450 x 103/mm3). Thrombocytopenia is a critical indicator of dengue severity. It was important for the patient to receive appropriate medical care to manage these symptoms and prevent complications.

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Hemoglobin	10.2 gm%	11.5-16.5
Neutrophils	**35%**	40-80
Lymphocytes	21%	20-40
Eosinophils	04%	01-06
Monocytes	06%	2-10
Packed cell volume	29%	37-47
WBC count	**2.4 (10/mm)3**	4-11
Platelet count	**110 (10/mm)3**	150-450
RBC count	3.8 Million/ul	3.7-5.6
MCV	75fl	75-95
RDW	18%	11.6-14.0
MCH	24 pg	26-32

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Hemoglobin	10.1 gm%	11.5-16.5
Neutrophils	**50%**	40-80
Lymphocytes	23%	20-40
Eosinophils	05%	01-06
Monocytes	03%	2-10
Packed cell volume	38%	37-47
WBC count	**8.0 (10/mm)3**	4-11
Platelet count	**200 (10/mm)3**	150-450
RBC count	4.2 Million/ul	3.7-5.6
MCV	75fl	75-95
RDW	19%	11.6-14.0
MCH	23 pg	26-32

The follow-up results show significant improvement in neutrophils, WBC count, platelet count, and packed cell volume, indicating a positive response to treatment. However, hemoglobin and MCH remain low, suggesting ongoing anemia. The RDW remains high, indicating variability in red blood cell size, which is often seen in anemia.

Microbiology

DENGUE SEROLOGY NS1 and IgM(ELFA) QUALITATIVE [5]

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Dengue Serology NS1 (Enzyme Linked Fluorescent Assay):	**1.5**	<1 -- Negative **>1 -- Positive**
Dengue Serology IgM (Enzyme Linked Fluorescent Assay)	**1.2**	<1 -- Negative **>1 -- Positive**

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Dengue Serology NS1 (Enzyme Linked Fluorescent Assay):	**0.8**	**<1 – Negative** >1 -- Positive
Dengue Serology IgM (Enzyme Linked Fluorescent Assay)	**1.1**	<1 – Negative **>1 -- Positive**

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Dengue Serology NS1 (Enzyme Linked Fluorescent Assay):	**0.1**	**<1 -- Negative** >1 -- Positive
Dengue Serology IgM (Enzyme Linked Fluorescent Assay)	**0.31**	**<1 – Negative** >1 -- Positive

Coagulation Lab

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ACTIVATED PARTIAL THROMBOPLASTIN TIME

Test:	35.0 Secs	21-33 Secs

BLEEDING TIME

BLEEDING TIME	08 mins	1-7

CLOTTING TIME [CT]

CLOTTING TIME [CT]	18 mins	6-16

PROTHROMBIN TIME

Test:	17 Secs	10-14 Secs

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ACTIVATED PARTIAL THROMBOPLASTIN TIME

Test:	32.0 Secs	21-33 Secs

BLEEDING TIME

BLEEDING TIME	08 mins	1-7

CLOTTING TIME [CT]

CLOTTING TIME [CT]	18 mins	6-16

PROTHROMBIN TIME

Test:	15 Secs	10-14 Secs

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ACTIVATED PARTIAL THROMBOPLASTIN TIME

Test:	28.0 Secs	21-33 Secs

BLEEDING TIME

BLEEDING TIME	07 mins	1-7

CLOTTING TIME [CT]

CLOTTING TIME [CT]	17 mins	6-16

PROTHROMBIN TIME

Test:	12 Secs	10-14 Secs

LIVER ENZYMES: (18-Jul-2024 01:10 PM)

Aspartate Aminotransferase (AST):	64	Men: 10–40 U/L Women: 9–32 U/L
Alanine Aminotransferase (ALT):	47	Men: 10–40 U/L Women: 7–35 U/L

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Aspartate Aminotransferase (AST):	73	Men: 10–40 U/L Women: 9–32 U/L
Alanine Aminotransferase (ALT):	71	Men: 10–40 U/L Women: 7–35 U/L

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Aspartate Aminotransferase (AST):	35	Men: 10–40 U/L Women: 9–32 U/L
Alanine Aminotransferase (ALT):	40	Men: 10–40 U/L Women: 7–35 U/L

Hematocrit

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Hematocrit	55%	28-40%

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Hematocrit	50%	28-40%

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Hematocrit	35%	28-40%

Coagulation Parameters: Initially, the patient had prolonged APTT, PT, bleeding time, and clotting time, indicating a potential coagulopathy, which is common in severe dengue cases. Over the three days, these values improved, with APTT and PT returning to normal by the third day, suggesting a positive response to treatment.

Liver Enzymes: Elevated AST and ALT levels on the first two days indicate liver involvement, which is also common in dengue fever. By the third day, these levels normalized, indicating recovery of liver function.

Hematocrit: The high hematocrit levels on the first two days suggest hemoconcentration, a sign of plasma leakage in dengue. The normalization of hematocrit by the third day indicates stabilization of the patient's condition.

The patient's lab results show significant improvement over the three days, with normalization of coagulation parameters, liver enzymes, and hematocrit levels. This suggests that the patient is responding well to treatment and is on the path to recovery.

DISCUSSION

Pregnant women with dengue often experience a significant drop in platelet count, leading to a higher risk of bleeding (hemorrhage), especially during labor and delivery. This can complicate childbirth, increasing the need for blood transfusions or other interventions during delivery. Dengue can cause elevated liver enzymes (indicating liver damage) [6] and, in severe cases, can affect kidney function. Pregnant women with liver dysfunction are at a higher risk of complications such as pre-eclampsia or HELLP syndrome (a severe form of pre-eclampsia. There is also evidence to suggest that pregnant women are more likely to suffer from severe dengue fever than non-pregnant women [7, 8].

CONCLUSIONS

Dengue in pregnancy is a rare but recognized manifestation, which should be considered in patients from endemic areas of dengue fever who develop severe thrombocytopenia [9, 10]. Conservative treatment should be conducted unless there are any complication. Although severe dengue fever increases the risk of preeclampsia, this pregnant woman had a favorable outcome.

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