

Maternal Dengue and its Impact on Perinatal Outcome: A Tertiary Care Experience



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Dengue: Introduction

- One Of The Most **Common Arboviral Diseases** In India^{1, 2}
 - Most Prevalent **Mosquito-borne Viral** Disease In Humans
 - Causative Agent: **Dengue Virus (DENV)**
 - Endemic** In Tropical Countries
 - Pregnancies Complicated By Dengue Infection**
- Increased Complications: Maternal Mortality, Preterm Delivery, Intrauterine Fetal Death, Low Birth Weight, Neonatal ICU Admissions, Miscarriage⁴
- Classical Symptoms:** Acute Febrile Illness With Vomiting, Headache, Rash, Myalgia, Arthralgia



Transmission: Aedes Mosquito



‘Mosquito-borne Dengue Menace’
Rising Incidence In Developing Nations,
Particularly India,
Partly Attributable To Rapid Urbanization

Objective

- Maternal Dengue** may lead to **potential haemorrhagic complications** in **mother** and her **neonate**, particularly in low-resource settings
- When managed in a **tertiary care facility**, **obvious benefits** of **close** feto-maternal monitoring and **prompt** intensive care^{3, 4}
- This study aims to review **clinical spectrum** of maternal dengue and **perinatal outcome** in women hospitalized with dengue infection during pregnancy

Materials and Methods

- Design:** Hospital-based Retrospective
 - We encountered 15 hospitalized women with serologically confirmed dengue in pregnancy during the outbreak for analysis
 - Data on sociodemographic and clinical details collected from Medical Record Department (MRD)
- Data Collection And Analysis**
- Data computerized using Excel MS office 2019
 - Data analysis: STATA software 17.0

Results and Observations

Table 1: Demographic Characteristics of Pregnant Women With Dengue Infection

Maternal Dengue Cases (n=15)		
Maternal Age (Years) ^{a, b}	Mean	Range
	29.07 (± 5.66)	(20-38)
Gestational Age At Dengue Diagnosis (Weeks) ^{a, b}	25.73 (± 7.32)	(10-37)
		N (%)
Parity	Primigravida	10 (66.6)
	Multigravida	5 (33.4)
Area Of Residence Of Infected Women	Delhi NCR	6 (40.0)
	Outstation (Indian States of UP, MP, Rajasthan, Bihar)	9 (60.0)
Incidence of Anaemia	At Initial Visit	6 (40.0)
Mean Platelet Count At Diagnosis (cells/ cu.mm) ^{a, b}	113740 (± 71546.29)	(19000-265000)

Values given as ^amean (± standard deviation), ^brange

Table 2: Maternal Dengue Infection Characteristics

Maternal Dengue Cases (n=15)		
Trimester At Dengue Infection	First Trimester	1 (6.7)
	Second Trimester	8 (53.3)
	Third Trimester	6 (40.0)
Method Of Maternal Dengue Diagnosis		N (%)
• Dengue Virus-specific Antigen Test	NS1 (Non structural protein1)	10 (66.6)
	IgM Antibody	4 (26.7)
	IgM + IgG Antibody	1 (6.7)
• Antibody (Immunoglobulin M (IgM)/ Immunoglobulin G (IgG)) Tests		N (%)
	Fever (± Chills)	13 (86.6)
	Thrombocytopenia	1 (6.7)
	Headache (Afebrile)	1 (6.7)

Table 3: Maternal and Perinatal Outcome In Dengue Infection

Maternal Dengue Cases (n=15)		
Antenatal Complications	N (%)	
	Preeclampsia	4 (26.7)
	Platelet Transfusion	3 (20.0)
	Blood Transfusion	1 (6.7)
Pregnancy Outcome	ICU Admission	-
	Term	11 (84.6)
	Preterm	2 (15.4)
	Abortions	-
Mode Of Delivery (Lost to follow-up: 2 (13.3%))	Vaginal Delivery	6 (46.2)
	LSCS	7 (53.8)
Birth weight (g) (n=13) ^{a, b}	Mean 2432.69 (± 702.85); (1060.0-3345.0)	
Postnatal complications	Postpartum Hemorrhage	1 (7.7)

Values are given as ^amean (± standard deviation), ^brange

Important Results and Observations

- Preeclampsia: 4 (26.7%)**
- Severe Oligohydramnios: 1 (6.7%)**
- Postpartum Haemorrhage (PPH): 1 (7.7%)** (Managed conservatively)
- Antepartum Haemorrhage: None**
- Mean Birth Weight: 2432.69 (± 702.85)**
- Preterm Delivery Rate 15.4%**
- Low Birth Weight: 5 Neonates (38.4%)**
- No severe dengue cases or mortality**
- Thrombocytopenia less than 1,00,000: 6 (40.0%)**
- 3 (20.0%) required platelet transfusion**

Discussion

- Present study included 15 serologically confirmed cases of Dengue
 - Mean Maternal Age: 29.07 (± 5.66) years
 - Classic Constitutional Symptoms In Majority
 - Most Common Presentation: 2nd Trimester
 - Recovery Optimal With Prompt Supportive Measures
 - Uneventful Hospital Stay
 - Condition At Discharge: Satisfactory
- Study Limitations: Small Sample Size; Design; Single Centre/ Unit**
- Primary Prevention Should Be Encouraged (Mosquito Repellants, Net, Sanitation, Clothing, Hygiene)**

Discussion	Muralidhar L et al (2021) ¹ (n=35)	Kanakalatha DH et al (2016) ⁴ (n=73)	Our study (n=15)
Maternal Age (Years)	23.74 (± 3.5)	26.07 (± 4.38)	29.07 (± 5.66)
Trimester At Diagnosis	I 25.7% II 22.8% III 51.4%	I 2.7% II 31.5% III 65.7%	I 6.7% II 53.3% III 40.0%
Spontaneous Abortions	15%	5.5%	-
Preeclampsia	-	2.74%	26.7%
Thrombocytopenia (<1.5 L/cu.mm)	60.0%	86.3%	40.0%
Platelet Transfusion	11.4%	4.1%	20.0%
Postpartum Hemorrhage (PPH)	-	8.8%	7.7%
ICU Admission	5.7%	7.3%	-
Preterm Birth	17.1%	9.5%	15.4%
Low birth weight	17.1%	27.3%	38.4%

Conclusion

- Maternal Dengue**
- Diagnosis requires **high index of suspicion** in any pregnant woman with **pyrexia** and **thrombocytopenia**
 - Early** detection, **timely** referral and **appropriate** management warranted to prevent complications and reduce potential fetal & maternal morbidity and mortality
 - Improved outcomes when managed by **Multidisciplinary** team approach in **tertiary** care settings
- Stringent Maternal Surveillance:** Key To Successful Perinatal Outcome
- Scope For Future Research**
- Further large scale prospective comparative studies required
- To provide more evidence-based data for pregnancy-specific management of Dengue, which are currently sparse

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