



## Prevalence of Dengue Fever in a Tertiary Care Center Experience

Authors

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### ABSTRACT

**AIM:** To study the maternal and perinatal outcomes in dengue fever pregnant women in a tertiary care center.

**METHOD:** This was a retrospective study done in pregnant women with dengue fever.

**RESULTS:** There were 75 pregnant women with confirmed dengue serology between January 2013 to October 2015 were included in the study. At the mean (SD) gestational age of 29+/-6 weeks. 36 patients (48%) were delivered by caesarean section, 45(60%) women needed SDP/FFP transfusion and there were no maternal deaths. 26patients (34.6%) of these 75 women had preterm deliveries and 32 neonates (42.6%) were admitted to neonatal intensive care unit. 19 women (25.3%) gave birth to low birth weight babies. There were five (6.6%) perinatal deaths.

**CONCLUSION:** In our study we found that the dengue fever has poor maternal and perinatal outcomes. Measures must be taken to prevent dengue in urban region, and dengue screening during pregnancy must be adopted in endemic regions.

### INTRODUCTION

Dengue fever is a febrile disease caused by four closely related dengue virus serotypes (designated DENV-1, DENV-2, DENV-3, and DENV-4) of the genus Flavivirus, family Flaviviridae.

The clinical severity of disease is classified by the (WHO)<sup>(1)</sup> dengue classification scheme, there are four grades ranging from uncomplicated dengue fever (DF) to dengue hemorrhagic fever (DHF) and devastating dengue shock syndrome (DSS). Dengue is the most important mosquito-borne (by *Aedes aegyptii*) disease in India<sup>(2)</sup>.

Significant outbreaks of dengue occur every few years due to the presence of all four viral serotypes<sup>(3)</sup>

Infection by one serotype produces lifelong immunity to that specific serotype but only a few months of immunity to the others<sup>(4)</sup>.

Dengue infection in pregnancy carries a major risk of hemorrhage for both the mother and newborn. In addition, there is a high risk of premature birth and fetal death and also vertical transmission causing neonatal thrombocytopenia that necessitates platelet transfusions<sup>(5-9)</sup>.

Diagnosis of dengue infection changes the management options and decisions of the obstetricians, particularly the delivery mode due to the potential risk of hemorrhage secondary to thrombocytopenia. Elevated liver enzymes, hemolysis and low platelet counts may confuse

one with the diagnosis of hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome, which occurs in women with pre-eclampsia and eclampsia, and has a higher incidence in tropical countries.

## METHODOLOGY

It is a retrospective study of all pregnant women admitted with dengue fever from January 2013 to October 2015 in department of OBG in M.S.Ramaiah medical college. Total of 75 cases included in the study. Patients who were symptomatic were admitted. Dengue fever was confirmed with dengue NS1 positive or specific immunoglobulin Ig(M) by ELISA method.

## STATISTICS

Data collected were entered into a computer database and SPSS software (version 13.0) Values are all reported as frequency, percentage, and mean (SD).

## RESULTS

**Table 1:** Socio-demographic distribution

Characters	Mean (SD)
Age(in years)	26(5.6)
Gestational age	29(6)
Duration of illness( in days)	10 (3.5)
Temperature	37.6 (0.9)

**Table 2:** Hematology and biochemical characteristics

Haemoglobin, gm/dl	7.7(1.7)
Platelets, cells/ $\mu$ L	1.12(12450)
Creatinine, mg/dL	1.3 (0.7)
Serum bilirubin, mg/dL	1.3 (0.8)
Alanine aminotransferase, IU/L	72.3(23.4)
Aspartate aminotransferase, IU/L	86.4(21.3)

**Table 3:** maternal and fetal outcome:

Variable	Number (percentage)
Preterm labour	30(40%)
Perterm birth	26(34.6%)
Cesrean section	36(48%)
Abruption	12 (16%)
Need of blood transfusion	45 (60%)

MICU admission	28 (37.3%)
Maternal death	Nil
Perninatal death	5(6.6%)
NICU admiission	32(42.6%)
Maternal to fetal transmission	4 (5.3%)

There were 30(40%) of women admitted with features of threatened preterm and 26(34,6%) went into labour and a preterm labour. 58 women (77.3%) delivered by caesarean delivery the commonest cause being fetal distress and 65% of the population had retro placental clot.

## DISCUSSION

The main findings of this study is that there is a poor maternal and perinatal outcomes due to dengue mainly the preterm deliveries (34.6%). However, in Sudan, as in many sub-Saharan countries, the frequency rates of miscarriage, preterm labor, and congenital abnormalities in the general population are unknown. In Malaysia, out of 16 patients with dengue, there were three cases of maternal death, 50% of the women had preterm deliveries and three babies required intensive care<sup>(13)</sup>. It is a well established fact that maternal clinical dengue may be associated with many pregnancy complications, including maternal mortality, preterm delivery, fetal death, low birth weight, neonatal admissions, fetal anomalies, and miscarriage<sup>(10-17)</sup>. Despite these trends, very less studies have been conducted to examine the impact of the severity of maternal dengue infection. This is an important factor to assess because viral titers are thought to vary by severity of infection, and pathogenesis associated with poor pregnancy outcomes can be caused by either the direct effect of the virus or the body's response to high titers.

In the present study, 12 (16%) patients had vaginal bleeding and 36 (48%) patients delivered by caesarean delivery. The risk of maternal haemorrhage was reported before when caesarean section was carried out on patient with dengue fever. Furthermore, difficulties in maintaining haemostasis during the caesarean section were observed too<sup>(17)</sup>. So the risk of haemorrhage has

to be assessed and precautions should be taken both for natural delivery and caesarean section.

## REFERANCE

- World Health Organization (1997) Dengue Hemorrhagic fever: Diagnosis, treatment, prevention and control. 2nd edition. Geneva Available: <http://www.who.int/csr/resources/publications/dengue/Denguepublication/en/print.html> Accessed 2 November 2009.
- Epidemiology unit of Ministry of Sri Lanka (2010) Dengue in Sri Lanka. Available: [http://www.epid.gov.lk/Dengue\\_updates.htm](http://www.epid.gov.lk/Dengue_updates.htm). (<http://www.epid.gov.lk/pdf/Dengue/2009/Dhf%20cases%200%28H399%29%202010-02-12.pdf>) Accessed 15 February 2010.
- Bharaj P, Chahar HS, Pandey A, Diddi K, Dar L, GuleriaR, Kabra SK, Broor S (2008) Concurrent infections by all four dengue virus serotypes during an outbreak of dengue in 2006 in Delhi. *Virology* 9: 1.
- Gibbons RV and Vaughn DW (2002) Dengue: an escalating problem. *BMJ* 324: 1563–1566.
- Carroll ID, Toovey S, Van Gompel A (2007) Dengue fever and pregnancy - a review and comment. *Travel Med Infect Dis* 5: 183-188.
- Chotigeat U, Kalayanrooj S, Nisalak A (2003) Vertical transmission of dengue infection in Thai infants: Two case reports. *J Med Assoc Thai* 86: 628-632.
- Chye JK, Lim CT, Ng KB, Lim JM, George R, Lam SK (1997) Vertical transmission of dengue. *Clin Infect Dis* 25:1374-1377.
- Maroun SL, Marliere RC, Barcellus RC, Barbosa CN, Ramos JR, Moreira ME (2008) Case report: vertical dengue infection. *J Pediatr (Rio J)* 84: 556-559.
- Fatimil LE, Mollah AH, Ahmed S, Rahman M (2003) Vertical transmission of dengue: first case report from Bangladesh. *Asian J Trop Med Public Health* 34: 800-803.
- Carles G, Peiffer H, Talarmin A: Effects of dengue fever during pregnancy in French Guiana. *Clin Infect Dis* 1999, 28:637–40.
- Waduge R, Malavige GN, Pradeepan M, Wijeyaratne CN, Fernando S, Seneviratne SL: Dengue infections during pregnancy: a case series from Sri Lanka and review of the literature. *J Clin Virol* 2006, 37:27–33.
- Ismail NA, Kampan N, Mahdy ZA, Jamil MA, Razi ZR: Dengue in pregnancy. *Southeast Asian J Trop Med Public Health* 2006, 37:681–3.25.
- Carles G, Talarmin A, Peneau C, Bertsch M: Dengue fever and pregnancy. A study of 38 cases in french Guiana [in French]. *J Gynecol Obstet Biol Reprod* 2000, 29:758–62.26.
- Malhotra N, Chanana C, Kumar S: Dengue infection in pregnancy. *Int J Gynaecol Obstet* 2006, 94:131–2
- Sharma JB, Gulati N: Potential relationship between dengue fever and neural tube defects in a northern district of India. *Int J Gynaecol Obstet* 1992, 39:291–5.
- Watanaveeradej V, Endy TP, Samakoses R, Kerdpanich A, Simasathien S, Polprasert N, Aree C, Vaughn DW, Ho C, Nisalak A: Transplacentally transferred maternal-infant antibodies to dengue virus. *Am J Trop Med Hyg* 2003, 69:123-8.
- Pouliot SH, Xiong X, Harville E, Paz-Soldan V, Tomashek KM, Breart G, Buekens P: Maternal dengue and pregnancy outcomes: a systematic review. *Obstet Gynecol Surv* 2010, 65:107–18