American Journal of
Oral Medicine and Radiology

ISSN - 2394-7721

www.mcmed.us/journal/ajomr

Research Article

PROSPECTIVE STUDIES ON DENGUE FEVER PATIENTS DURING PREGNANCY IN GENEAL MEDICINE DEPARTMENT OF A HOSPITAL

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ABSTRACT

During the epidemic, dengue virus is thought to have killed five people, four of whom were women. In order to diagnose symptoms in prospective studies associated with Dengue fever during pregnancy, the most common agent was Dengue virus serotype 2 (DENV-2). To be included in the cohort study (EG), women had to have laboratory-certified dengue fever during their pregnancy. When viral RNA, NS1 antigen, seroconversion of IgM antibodies, or the presence of IgM antibodies were found in the samples obtained, infection (exposure) to dengue virus was considered confirmed. The first is an indication of exposure and non-exposure. Exposed women (EG) had a biologically confirmed dengue fever, confirmed in 92% of cases by detection of RNA virus and / or NS1 antigen, both very specific ways to confirm the diagnosis and critical diagnosis. The search for warning signs, regular ultrasound monitoring of important fetal symptoms, and medications for the prevention and treatment of peripartum bleeding should all be part of the management plan. To understand the aetiology of birth defects associated with maternal dengue, further investigation of heavy bleeding during birth and stillbirth is needed.

Key words:- Antigen, pregnancy, dengue.

Access this article online		
Home page: http://www.mcmed.us/journal/ajomr		Quick Response code
Received:07.02.2021	**Revised**:12.02.2021	**Accepted**:25.02.2021

INTRODUCTION

Despite the fact that the prevalence of dengue has increased by 30 percent over the past 50 years, few studies have been published on the effects of dengue in pregnant women. Due to the background of data collection, the dynamic definition of dengue, and the incorrect correction of potential defects, especially maternal history, comparative studies are not available, and those published (especially case reports and case series) are prone. bias [1,2].

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Premature birth, high risk of miscarriage, low birth weight, and stillbirth are the most common birth defects recorded in pregnant women with dengue [1, 3, 6]. Pregnant women should be on the watch for signs and symptoms of dengue fever, according to the current WHO recommendations [7]. Dengue fever, on the other hand, has yet to be proven to have any significant consequences on the course and outcome of pregnancy. A dengue outbreak happened in 2012–2013, according to the World Health Organization's 2009 categorization, infecting 13,240 people (5.7 percent of the population). According to the WHO's 2009 categorization, 4% of individuals infected exhibited signs of dengue, with a severity rate of 0.5 percent. During the pandemic, dengue

virus is thought to have killed five people, four of whom were women. The most common agent was dengue virus serotype 2 (DENV-2) (95% of cases), yet other serotypes were recovered (DENV-4 accounted for 5% of cases; DENV-1 and DENV -3 counts in 1% cases each). We conducted a multidisciplinary comparative study during the recent epidemic to investigate the rate of abnormal pregnancy outcomes for women with symptoms of dengue infection compared with women who did not have the dengue virus. The results of a collaborative study of dengue infection group during pregnancy are presented in this report.

AIMS AND OBJECTIVES

To study the Dengue fever during pregnancy in symptomatic individuals in a prospective matched research.

Design and setting of the study:

The study was conducted in women who had a fever and / or suspected dengue during pregnancy (due to headaches, retro-orbital pain, muscle aches, joint pain, or rash) and were followed by one of the participating research centers (hospitals, maternal and child care centers, and private staff in Chennai, Tamilnadu) were encouraged that they participate. The participant signed an informed consent form to provide a blood sample to be used for testing for dengue virus. After developing symptoms of dengue fever, each study was assigned to a "exposed" (EG) team, which was certified by laboratory tests on human selection. In some cases, she was told that she would not be able to attend the research. For every new woman who was recently exposed (as soon as dengue was confirmed in the laboratory), three flu-free pregnant women were recruited to form a control group known as the "undisclosed group" (NEG). The three eligible women who sought counseling shortly after the placement of the exposed woman were used as undisclosed games for the exposed women at the same facility. After these NEG women signed an informed consent form, a peripheral blood sample was taken to test for dengue virus, and any woman who showed biological evidence of a recent infection was excluded from the study.

Both groups of women are followed from pregnancy to delivery and the postpartum period (usually between 2 and 5 days postpartum). Normal course of pregnancy (including the number and kind of clinical and paraclinical testing) was not changed for the purposes of this inquiry because it was an observational study.

An investigation into biology:

After completing the informed consent form, participants (EG and NEG) were asked to produce a peripheral blood sample, which was later analyzed for dengue fever (at the time of incorporation). In the event that they became infected during the implantation period and during childbirth, women in the NEG group provided another blood sample at birth to test for dengue infection. The following cellular and serological investigations were performed in accordance with the available sample volume: viral RNA genome detection using reverse transcriptase-polymerase chain reaction (RT-PCR) as described by Lanciotti et al. [8], illiterate detection (NS) I -Antigen 1 uses Platelia TM Dengue NS1 Ag hold ELISA [9], and test specific antibodies.

In patients, Panbio Dengue IgM scanning ELISA and Panbio Dengue IgG capture ELISA, both made according to manufacturer's instructions, were used for pre-screening. exposure to dengue virus. In this study, the IgM: IgG-specific dengue protein proteins E and M were used to differentiate the primary and subsequent infections. Major dengue infections were defined as having IgM: IgG over 1.2 (1: 100 dilution), and secondary dengue infections were described as having a mean of less than 1.2. The National Reference Center for Arboviruses (Institut Pasteur de la Guyane) regularly tests all patients on EG to see IgM antibodies targeted at other arboviruses.

To be included in the cohort study (EG), women had to have laboratory-certified dengue fever during their pregnancy. When viral RNA, NS1 antigen, seroconversion of IgM antibodies, or the presence of IgM antibodies were found in the samples obtained, infection (exposure) to dengue virus was considered confirmed. To be included in the study, women in the undiagnosed group (NEG) had to have no signs of dengue infection and no flu symptoms (above 38.5 degrees Celsius for more than 48 hours) at any stage during their pregnancy. For pregnant women who were diagnosed with dengue virus, all NS1 antigen tests and direct dengue IgM tests on blood samples obtained between implantation and delivery were negative (NEG). According to the researchers, the study included only pregnant women who did not satisfy any means of discharge and satisfied all means of implantation. Upon admission to the study, anyone who satisfies any selection criteria is automatically excluded from the study. The study was conducted using the STATA 12.0 statistical system. To test the correlation between the exceptions and the outcomes discussed, a mathematical checklist was used, which included Fisher's direct test, Wald's test, and Pearson's chi2 test. The conditional Poisson retreat was used to model a variety of relationships, with each woman exposed (EG) and the three undressed women (NEG) following her modeling as a matched stratum. [13].

In order to complete the statistical analysis, two stages were taken. Univariate analysis was used to find the explanatory factors that were statistically significant for each outcome. Based on sociodemographic and medical data collected for each patient, a set of

descriptive features was created. The literature was used to choose the explanatory factors that were examined based on their link to the outcome.

Selected descriptive features, primary exposure variable (DENV virus), and correction variables were then used to create a multivariate model for each outcome, which was then tested. The remedies were linked to socio-economic factors that differed between the two groups, which may have disrupted communication. The regression method was used to create the final model. The mathematical significance range is set at 5%. The expected sample size was 79 women in the EG group and 237 women in the NEG group, based on 80% research power, 15% difference between the two arms, and one-third of Exposed / Non-disclosure ratio (EG/NEG).

RESULTS

Table 1: Patient demographic details and General Characteristics

DEMOGRAPHIC AND GENERAL CHARECTERISTICS	NEG	EG
Age During Inclusion <20 YRS	29	12
AGE AT INCLUSION >35	42	11
MEDICAL HISTORY		
HTN	4	1
DM	0	2
HEMOGLOBINOPATHY	14	3
THROMBO EMBOLISM	4	1
AUTO IMMUNE DISEASE	0	2
HABITS		
ACTIVE SMOKING DURING PREGNANCY	11	5
ALCOHOLISM	2	2
GRAVIDITY UPON INCLUSION		
PRIMIGRAVIDA	53	29
OBSTETRICAL HISTORY		
PREMATURE LABOR	13	4
PREMATURE DELIVERY	20	5
INTRA UTERINE GROWTH	7	4
HTN	12	1
PRE ECLAMPSIA	11	3

The groups' capacity to be compared and there were no statistically significant differences between the two groups when it came to the first ultrasound before 14 weeks of pregnancy (Wald p = 0.76), the first pregnancy correction started before 14 weeks of pregnancy (Wald p = 0.63), and the total number of prenatal consultations (Wald p = 0.99) [table 1].

With the exception of dengue fever, there were no statistically significant differences between the two groups in terms of social characteristics, location, or medical history. The median age of mothers in the NEG was 28 years [IQR = 10], while the median age at birth in the EG was 28 years [IQR = 10]. In NEG, the travel time was 30 minutes [IQR = 50], but in EG, the travel time was 20 minutes [IQR = 40]. There were no significant differences in maternal history between the two groups other than gravity.

DISCUSSION

Three characteristics stand out in this prospective cohort of dengue patients at the time of pregnancy. The first is an indication of exposure and non-exposure. Exposed women (EG) had a biologically confirmed dengue fever, confirmed in 92% of cases by the detection of viral antigen RNA and / or NS1, both direct mechanisms to confirm diagnosis and critical disease status [10]. Some women (8% of the EG group) had their diagnosis confirmed by serology (diagnosis of dengue IgM), while it could not pinpoint the exact time of infection (between 7 days and 6 months) [11]. Women over the sixth month of pregnancy may be included in the EG based on a good IgM test. The centralization of sample analysis in the same lab reduced the bias caused by differences in processes or reagents used by different labs. Diagnostic tests in samples taken at the beginning and end of the study were used only to include women in the NEG group in the analysis. Between implantation and birth control, the chances of the NEG group having symptoms of symptomatic or asymptomatic diminished.

A second distinguishing factor is that variables that may affect the assessment of the event during the follow-up are considered. The comparison reduced the socio-economic differences associated with the tracking area and eliminated unequal hospital staffing. By analogy with the week of gestation, implantation of the NEG group of events in early pregnancy was reduced: if NEG

was observed only toward the end of pregnancy, pathogenic events during the first trimester (e.g., miscarriage) would not be ignored. All women's social information and medical records were processed. With the exception of gravity, there were no significant differences in these parameters between the two groups (most EG women were primigravida and most NEG women were multigravida). Gravity is incorporated into the elements of multivariate analysis to compensate for their confusing potential impact. Finally, the study was organized in the future, which met the objectives of the study (study of outcome frequency) [12]. In order to compensate for the small sample size of EG (expected to be 100 within three years) and to increase research capacity, three controls were added in each case [13]. In order to control their potentially confusing effect, gravity added additional adjustment variables to multivariate analysis. Finally, the study was designed for the future, which is acceptable for research purposes (study frequency effect) [14]. Three controls were incorporated in each case to compensate for the average sample size of EG (approximate number 100 over 3 years) and to increase research capacity.

According to the EPICES score, over half of the women in the study were socially vulnerable (48 percent of NEG and 52 percent of EG). A lack of or delayed pregnancy follow-up [12] has been connected to a problematic posture. Separation from family members (moral support, material help) increases the likelihood of premature labor. This backs up both studies and comparative research that indicate how socioeconomic variables play a role in pregnancy complications.

The incidence of premature births in women with dengue is 4 percent when reported and 16.1 percent in a series of cases, according to a recent study. In a meta-analysis of five trials, the median relationship between dengue during pregnancy and premature birth was 1.71. In our study, the rate was 4.3 percent in EG and 8.8 percent in NEG. A previous comparative study found that 17.4% of birth defects in women and 8.7% of birth defects in women occurred before 37 WG [4], indicating that the risk of premature birth was higher in women with symptoms, with dengue. OR 3.34 (1.13–9.89) after correction of gravity but not birth history. The undisclosed group included women who were repeatedly selected without biological evidence of dengue exposure, and earlier included abortions in the previous study. Whether women had dengue fever during pregnancy, social and economic factors were major predictors of preterm labor and childbirth in our study.

We found no evidence that dengue fever increased the risk of preeclampsia or the stage of surgery; however, a history of childbirth contributed to this tragedy. Rare cases of preeclampsia in pregnant women with dengue may be due to fluid changes, high blood pressure, or a history of preeclampsia.

Different studies describe hypotrophy differently. Numerous studies have described low birth weight (LBW) as a live birth weight of less than 2,500 g at birth, regardless of gestational age. Prematurity alone may define LBW; a birth weight of less than 2,500 g may be considered normal in this name [15].

CONCLUSION

Using the same group design, we investigated the effects of symptomatic dengue on pregnant women. We present two key findings: Addressing confusing social and economic and reproductive events is important in analyzing dengue during pregnancy outcomes; and ii) severe symptoms in mothers are associated with side effects, especially peripartum bleeding. These findings suggest that treating symptomatic dengue in pregnant women in a different way may be helpful. The search for warning signs, regular ultrasound monitoring of important fetal symptoms, and medications for the prevention and treatment of peripartum bleeding should all be part of the management plan. To understand the aetiology of birth defects associated with maternal dengue, further investigation of heavy bleeding during birth and stillbirth is needed. It would also be beneficial to conduct major studies in other areas covered with dengue, to fix distractions, to see if these findings could be replicated and refined outside our study area.

REFERENCES:

1. Guo C, Zhou Z, Wen Z, Liu Y, Zeng C, Xiao D, et al. Global epidemiology of dengue outbreaks in 1990–2015: a systematic review and meta-analysis. Front Cell Infect Microbiol. 2017;7:317.
2. Lambrechts L, Scott TW, Gubler D. Consequences of the expanding global distribution of Aedes albopictus for the dengue virus transmission. PLoS Negl Trop Dis. 2010;4:e646.
3. Pouliot SH, Xiong X, Harville E, Paz-Soldan V, Tomashek KM, Breart G, et al. Maternal dengue and pregnancy outcomes: a systematic review. Obstet Gynecol Surv. 2010;65:107–118.
4. Pattinson R, Say L, Souza JP, van den Broek N, Rooney C, WHO Working Group on Maternal Mortality and Morbidity Classifications WHO maternal death and near-miss classifications. Bull World Health Organ. 2009;87:734–734.
5. Chansamouth V, Thammasack S, Phetsouvanh R, Keoluangkot V, Moore CE, Blacksell SD, et al. The aetiologies and impact of fever in pregnant inpatients in vientiane. Laos PLoS Negl Trop Dis. 2016;10:e0004577.
6. Tien Dat T, Kotani T, Yamamoto E, Shibata K, Moriyama Y, Tsuda H, et al. Dengue fever during pregnancy. Nagoya J Med Sci. 2018;80:241–247.

7. Basurko C, Carles G, Youssef M, Guindi WEL. Maternal and fetal consequences of dengue fever during pregnancy. Eur J Obstet Gynecol Reprod Biol. 2009;147:29–32.
8. Yang J, Zhang J, Deng Q, Wang J, Chen Y, Liu X, et al. Investigation on prenatal dengue infections in a dengue outbreak in Guangzhou City, China. Infec Dis. 2017;49:315–317.
9. Kariyawasam S, Senanayake H. Dengue infections during pregnancy: case series from a tertiary care hospital in Sri Lanka. J Infect Dev Ctries. 2010;4:767–775. doi: 10.3855/jidc.908. [PubMed] [CrossRef] [Google Scholar]
10. Chitra TV, Panicker S. Maternal and fetal outcome of dengue fever in pregnancy. J Vector Borne Dis. 2011;48:210–213.
11. Basurko C, Everhard S, Matheus S, Restrepo M, Hilderal H, Lambert V, et al. A Prospective matched study on symptomatic dengue in pregnancy. PLoS ONE. 2018;13:e0202005.
12. Matusali G, Colavita F, Carletti F, Lalle E, Bordi L, Vairo F, et al. Performance of rapid tests in the management of dengue fever imported cases in Lazio, Italy 2014–2019. Int J Infect Dis. 2020;99:193–198.
13. Sondo KA, Ouattara A, Diendere EA, Diallo I, Zoungrana J, Zemane G, et al. Dengue infection during pregnancy in Burkina Faso: a cross-sectional study. BMC Infect Dis. 2019;19:997.
14. Tavakolipoor P, Schmidt-Chanasit J, Burchard GD, Jordan S. Clinical features and laboratory findings of dengue fever in German travellers: a single-centre, retrospective analysis. Travel Med Infect Dis. 2016;14:39–44.
15. Tan PC, Rajasingam G, Devi S, Omar SZ. Dengue infection in pregnancy: prevalence, vertical transmission, and pregnancy outcome. Obstet Gynecol. 2008;111:1111–1117.

Cite this article:
Krishna murthy Choudary P & Hari Priya**.** Prospective Studies On Dengue Fever Patients During Pregnancy In Geneal Medicine Department Of A Hospital. *American Journal of Oral Medicine and Radiology*, 8(2), 2021, 32-36.