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Obstetric Outcome of Dengue Fever on Maternal, Fetal and Neonatal Life: A Review

Sabira Sultana[1*], Muhammad Amjad Chishti[2], Neelum Shahzadi[3], Muhammad Haseeb ur Rehman[4], Naheed Akhtar[5], Iqra Saleem Naz Babari[6], Tamseela Shahzadi[7], Rao Anum Rehman Khan[8], Muhammad Saleem Qureshi[9], Sumbal Tanveer[10]

[1]Department of Eastern Medicine, Faculty of Medical Sciences, Government College University, Faisalabad Pakistan
[2]Faculty of Eastern Medicine Hamdard University, Karachi Pakistan
[3,4]Department of Human Nutrition and Dietetics, Hamdard University, Islamabad campus Pakistan
[5,6]Department of Pharmacy, University of Poanch Rawalakot, Azad Jammu &Kashmir Pakistan
[7,10]Riphah International University, Islamabad, Pakistan
[8]Department of Pharmaceutical Chemistry, Islamia University Bahawalpur, Pakistan
[9]Akbar Institute of Medical Sciences, Bahawalpur Pakistan

***Corresponding Author**: Dr. Sabira Sultana
Email: drsabirachishti12@gmail.com

Abstract
Dengue fever is the most widely recognized mosquito - borne viral illness that contaminates people. It is brought about by the dengue infection having a place with the family Flaviviridae and of the variety Flavivirus, and an infection communicated by the Aedes mosquito. Dengue fever is endemic in generally tropical and subtropical areas, and almost 50% of the total populace is considered in danger. In the current years there have been numerous flare-ups in certain areas of the world. Ladies contaminated with dengue during pregnancy are at higher danger of maternal and neonatal passing. This causes genuine intricacies that require uncommon checking of pregnant ladies during the pre-birth time frame. Dengue disease during pregnancy is a developing issue in Southeast Asia; However, information on antagonistic consequences for moms and newborn children is as yet restricted. The review plans to analyze the results of dengue fever on maternal, fetal and neonatal life.
Keywords: Obstetric Outcome; Dengue Fever; Maternal Outcome; Fetal Outcome; Flavivirus,; Aedes mosquito;

Introduction

Dengue fever has been spreading around the world in tropical areas in recent years. Around 100 million infections are estimated to occur worldwide, of which 250,000 are dengue heamorrhagic fever (DHF) infections, while 25,000 result in death. Dengue Viral is a part from the flaviviridae family, which additionally incorporates yellow fever, West Nile disease, and Japanese encephalitis. The Aedes mosquito bite causes dengue disease. Dengue virus comes in four different varieties. It does not appear to provide immunity to all of these illnesses. The acute bout of dengue fever, like other serotype infections, can lead to serious disease. The incubation period is 3-8 days for this disease. The virus is observed 6-18 hours before the onset of symptoms in humans. The disease is initially asymptomatic, and then signs occur that can lead to heamorrhagic fever that can lead to life-threatening dengue. Extreme infection occurs as a result of past sensitization of multiple serotypes. Acute fever, extreme muscle and joint pain, headaches and retro-orbital pain are all signs of the disorder. In certain cases, there are also respiratory and gastrointestinal signs. Fever can last 5-7 days, but extreme physical and emotional exhaustion is accompanied by the disease (Ashley 2011).

It has recently been recorded that in Vientiane, Laos; The most prevalent cause of fever is dengue during pregnancy (46 percent). In 2015, with 25 deaths, 82,000 patients in Vietnam had dengue infection. The mortality rate for extreme dengue fever is 0.8-2.5 percent, and as a coexisting risk factor for serious infection, pregnancy should be noted. The maternal and foetal results, however, are still not fully understood. Since there were few comparative trials, the first clinical analysis could not assess whether maternal dengue infection presented a risk of adverse effects. Recently, the first systematic analysis on outcomes of mother-born neonates with dengue fever had been published, and it has been shown that preterm birth and low birthweight seem to be the most frequent adverse outcomes of pregnancy; however, dengue fever was not significantly associated with these adverse outcomes, indicating that risk could be suggested by symptomatic dengue fever.Some adverse effects remain uncertain, such as stillbirth or postpartum haemorrhage (PPH). This study explains the effects on maternal and foetal outcomes of maternal dengue infection and focuses on the clinical characteristics of PPH patients (Rashed 2021).

The Disease and the Virus

The dengue virus is an RNA flavivirus with four serotypes: DENV1, DENV2, DENV3, and DENV4. The mosquito Aedes aegypti is the most common vector. Type-specific post-infection immunity exists. Instead of increased susceptibility, children's age of acquisition makes them more sensitive to infection. Pregnant women are not susceptible to infection, but they are at a higher risk of bleeding issues. Infection is often asymptomatic at first, but symptoms can range from mild flu-like symptoms to major consequences include bleeding, shock, and death. The mortality rate from dengue shock is 1 to 5%.(Henchal and Putnak 1990). The incubation period for dengue fever is 4-7 days. Dengue fever can also be caused by acute gastrointestinal illnesses (Chan and Johansson 2012).

According to the World Health Organization, dengue was previously known as dengue haemorrhagic fever and dengue shock syndrome. These criteria have not been used to classify patients at risk of serious disease, and catastrophe categorization is still being researched. Other than fever, acute headache, myalgia, arthralgia, retro-orbital discomfort, and a rash that is maculopapular or petechial are common symptoms. It's possible that nausea and vomiting will occur in some cases. The symptom duration is 8-10 days, and the pattern of symptoms has been discovered in some patients with a 48-hour temperature drop in the midst of the sickness before recurrence. The diagnosis of dengue infection is aided by a decrease in the number of WBCs and thrombocytopenia. A tourniquet examination, in which a blood pressure cuff is inflated around the upper arm at a location between the systolic and diastolic pressures for 5 minutes, is commonly used to diagnose infection. The test will be positive if there are roughly 20 petechiae per 2.5 cm (Chan and Johansson 2012). Vascular leakage is characterised by significant infection, which can lead to hypovolumic shock and raise the risk of mortality if not addressed. Serious problems, such as haemorrhage and organ failure, may result as a result of this. A high haematocrit level is a warning indicator of hypovolaemia. Lowering the pulse rate, i.e. 20 mm Hg, is also utilised for assessing intensity and anticipating shock. The pulmonary infiltrates are seen on chest radiography (Balmaseda, Hammond et al. 2006).

Pathophysiology

Vascular leakage is the most prevalent consequence of dengue fever. The pathophysiological pathways are yet not completely understood. According to epidemiological research, the most devastating symptoms of dengue fever appear after numerous infections. This may contribute to the virus sensitising the immune system in some way. Antibody-dependent enhancement is a process in which viral replication increases upon subsequent infection with various serotypes. In studies on dengue pathogenesis, soluble factors, virulence factors, endothelial cell function, T cell responses, and host genetics are all implicated. Certain cytokines and other soluble factors have also been shown to be at an increased level. Plasma leakage, on the other hand, will mostly occur in the pulmonary and peritoneal cavities in severe situations. Increased TNF levels have been shown to be more prevalent in bleeding patients. Coagulopathy is unrelated to disseminated intravascular coagulation. Increased thromboplastin and reduced fibrinogen levels are also seen (Deen, Harris et al. 2006).

Dengue in Pregnant Women

Dengue fever is the most well-known viral contamination in the world. Consistently, an expected 390 million individuals are contaminated, with 96 million of those encountering clinical manifestations. As indicated by the WHO, it has spread to more than 100 nations, putting half of the total populace in danger. The manifestations of dengue fever during pregnancy are obscure. Ongoing examination have demonstrated that pregnant ladies are at a higher danger of contracting dengue fever. The seropositivity for dengue disease was assessed to be 35.8% in 358 pregnant ladies in Malaysia who were determined to have dengue fever by ELISA. Another endemic dengue country, Thailand with a pervasiveness of 90.3 percent. It ought to be noted,

nonetheless, that these discoveries were procured during the sad episode of Chikungunya disease, lifting the danger potential to 39.74 percent of pregnant ladies in the African country of the Democratic Republic of So Tomé and Prncipe testing positive for DENV antibodies. These discoveries suggest that pregnant ladies are at a critical danger of contracting dengue fever. It's conceivable that there are two hypotheses. One thought is that dengue fever is deteriorated in pregnant ladies. In an investigation of 30 pregnant ladies who had been contaminated with the dengue infection, According to Adam et al., generally 38.3 percent of them have procured dengue shock condition, and around 21.7 percent will kick the bucket. As indicated by Machado et al., 47% of pregnant ladies tainted with the dengue infection fostered an extreme ailment, contrasted with 23% of non-pregnant ladies. Pregnant ladies with dengue disease had a higher danger of extreme sickness and casualty than non-pregnant ladies with dengue infection, as indicated by these examination (Balmaseda, Hammond et al. 2006, Martina, Koraka et al. 2009, Gehlot, Yadav et al. 2017).

Dengue Fever in Pregnancy: Maternal and Fetal Effects

In pregnant women who have a significant dengue illness, low platelet counts can occur in both primary and secondary infections. The primary clinical characteristic that distinguishes DF from DHF is increased vascular permeability, which can result in organ failure, hypovolemic shock and death if not treated (Deen, Harris et al. 2006). Dengue is associated with multiple complications during pregnancy, including maternal mortality, infant death, preterm delivery, infant defects, abortion, low birth weight, and neonatal admissions. A research performed in Sudan found that approximately 6.4 percent of patients had vaginal bleeding and 10.2 percent were C-section patients. The risk of maternal haemorrhage was identified in patients with dengue fever before the C section was carried out. Systematic reviews have shown that dengue fever has increased preterm birth rates and low birth weight in pregnancy (Adam, Jumaa et al. 2010).

The investigation of maternal and perinatal mediations of dengue in Port Sudan and Elmawani hospitals in eastern Sudan was documented by Adam et al. 2010. At the mean gestational age of 8.2 weeks, 10820 deliveries and 0.7 percent of pregnant women with verified dengue infection were recorded. Even though most of all such female were suffering from dengue infection (58.9 percent), 18 (23.0 percent) had hemorrhagic fever and dengue shock syndrome. 21.7 percent of maternal deaths were due to dengue infection. Approximately 17.9 percent of 78 women had preterm deliveries and 24.3 percent of neonates were admitted to neonatal ICUs. Around 24.3 percent of females gave birth to neonates with a low birth weight. Some 8.9 percent of perinatal deaths have occurred. Due to various obstetric manifestations, around 10.2 percent of babies delivered via caesarean section (Zhang, He et al. 2017). Another dengue fever study recently found that the adverse ratio of pregnant women with dengue infection was 6.7 in stillborn, 3.51 in miscarriage, 1.7 in premature, and 1.7 in low birth weight. Therefore, dengue infection should definitely be taken seriously in pregnant women (Paixão, Teixeira et al. 2016, Diouf and Nour 2017).

In 2010, a comprehensive assessment of dengue infection during pregnancy and its effects on the foetus was published. Vertical transmission is feasible, according to the researchers, who looked at 19 case reports, nine controlled studies, and two cohorts. However, there was insufficient data to indicate that dengue infection increases the likelihood of harmful consequences in pregnancy. The effect of infection on the foetal outcome throughout pregnancy is unknown. (Ciocchetta 2018, Paixão, Teixeira et al. 2018). Before 2016, seven studies on dengue fever reported conflicting outcomes, and a meta-analysis published in 2016 found that In symptomatic women at some stage during pregnancy, dengue was exclusively linked to low birth weight and premature delivery (Blum, Majid et al. 2018). In 2017, a large Brazilian company discovered that notifying a pregnant woman of mild dengue throughout the course of her pregnancy was no longer linked to higher preterm birth costs or lower birth weight in infants when compared to fees for all neonates in a random manner. This research, on the other hand, did not look at the impacts of dengue fever based on its severity or when it first appeared (Khan 2016).Pakistan has experienced a dengue fever epidemic since 2010, leading to 16,000 verified cases and 250 deaths in Lahore, nearly 6,000 cases and 50 suggested deaths from the rest of the country (Paixão, Teixeira et al. 2016). Even though rate of dengue has been increased by 30 over the last 50 years, few systematic studies have been conducted on the effects of dengue for the duration of pregnancy. In 2017, a large Brazilian company discovered that notifying a pregnant woman of mild dengue throughout the course of her pregnancy was no longer linked to higher preterm birth costs or lower birth weight in infants when compared to fees for all neonates in a random manner. This research, on the other hand, did not look at the impacts of dengue fever based on its severity or when it first appeared(Ciocchetta 2018).

From November 1, 2015 to January 31, 2017, Sondo et al. (2018) led a cross-sectional investigation, utilizing secondary information, In Ouagadougou, there are 15 public and private wellbeing establishments. Couple is an immunochromatographic quick test that was utilized to distinguish explicit antibodies, immunoglobin M/G, as well as dengue non-underlying antigen1 infections in dengue patients. During the exploration time frame, 25 (6%) of the 399 (48%) ladies who enrolled were pregnant. The normal time of pregnant ladies was 30 years, with limits of 18 and 45 years. The most well-known side effects were fever (92%) and cerebral pain (92%) separately. Nine patients had serious dengue, which was characterized by dying (16%), neurological side effects (16%), and intense respiratory misery (8%). (36%). Eight (32%) of the 25 ladies experienced an early unsuccessful labor, and eight (32%) brought forth reasonable embryos. 5 (20%) of the people who delivered normal infants experienced post pregnancy drain, while 3 (12%) had an early birth. Three occurrences (12%) of intense fetal trouble were the most widely recognized fetal entanglements. There was one instance of maternal demise (4%) and four events of infant mortality recorded (44.5 percent) (Zhang, He et al. 2017).

From 2006 to 2012, Enny S Paixão et al (2017) The specialists utilized regularly gathered Brazilian information to play out a populace based associate examination, which involved 16,738 000 live births. Dengue haemorrhagic fever was connected to preterm delivery and low birth weight, despite the fact that there was no sign of a minor impact on gestational age (OR=2.1; 95% CI 0.4 to 12.2). The level of the effects was more noteworthy during the intense disorder stage. This review tracked down a raised danger of awful delieveries results in ladies who had serious dengue fever during pregnancy. Clinical intercession can abbreviate the length of maternal danger during extreme intense dengue scenes, maybe working on the results of infants brought into the world to mothers who have been exposed (Diouf and Nour 2017).

From January to October 2013, a review investigation of every single finished pregnancy (live births and pregnancy misfortunes) at nine public emergency clinics in the Gulf of Mexico was led to more readily comprehend the impacts of dengue infection disease during pregnancy. 82 individuals grew clinically affirmed dengue infection contaminations while pregnant. Of them, 54 (65.9%) were determined to have dengue fever without notice signs, and 15 (18.3%) were determined to have dengue fever without notice signs. Five patients with extreme dengue (38.5 percent) needed to have crisis cesarean areas because of fetal pain. Four patients brought forth apparently healthy babies with ordinary birthweights, while the fifth patient brought forth a preterm baby with a low birthweight. The patients died due to multiple organ failure during or inside 10 days after the medical procedure. Serious dengue fever was additionally connected to obstetric drain (30.8%, four cases), toxemia (15.4%, two cases), and eclampsia (7.7%, one case). (Mor, Cardenas et al. 2011).

Immune Response of Pregnant Women

Dengue fever is largely a disease of the immune system. Thus, dengue pathogenesis may be defined by a number of immune-related processes, including cross-reactive antibodies, T-cell cross-reactive memory activation, cytokine or inflammatory storm activation, and complement activation. Nevertheless, amid these demanding researches, a very significant portion of dengue pathogenesis remains elusive. Although dengue is an immune-related illness, the opposition between protective and adverse immune responses depends on whether or not the infection becomes localized or existing (Luppi 2003, Machain-Williams, Raga et al. 2018).

Diagnosis of Dengue Fever

Three variables were crucial in the diagnosis of dengue fever:

ELISAs for the detection of Dengue-specific IgM

The IgG and IgM antibodies test by ELISA is the most widely used analytic. This assessment, which depends on a four-crease expansion in IgG titre, is troublesome in clinical consideration circumstances since a subsequent blood test is needed during the recovering time frame. (Mor, Cardenas et al. 2011). Essential diseases are characterized by the advancement of IgM-explicit dengue-explicit antibodies four to five days after the initiation of the fever, just as the presence of IgG antibodies. IgM antibodies are simply noticeable following seven to ten days for three to a half year, but IgG antibodies are recognizable forever. In secondary contaminations, the degree

of IgM antibodies is lower than in significant diseases, and antibodies are habitually absent, yet IgG immune response stages rise out of the blue. Therefore, the presence of high IgG titers right off the bat in the ailment course is needed for secondary disease. As opposed to the best quality level hemagglutination inhibition test, IgM ELISA levels have an affectability of 90% to 97 percent. Some bogus reactions and a low or feeble IgM response in optional diseases can be seen in less than 2% of cases (Bhattacharya, Mukherjee et al. 2014). An amount of business kits is accessible in market.

Viral Isolation and Identification Using Mosquito Cell Lines and Monoclonal Antibodies

This methodology depends on the accessibility of host cell or mouse cultures that fill in as marks of viral disease, for example, cytopathic results in cell culture, ailment signals, or mouse mortality. This is the frequently utilized strategy for viral detachment. Numerous constant mosquito cell lines have been demonstrated to be especially helpless to dengue infection contamination. The clone of C6/36 of A. albopictus cells was picked for viral separation due to its high affectability to dengue infection tainting and straightforwardness of taking care of (Vazquez, Perez et al. 2005). Mosquito cell societies are another expansion to the dengue infection's detachment strategies. Three similar cell lines The expression "senstivity" is most usually utilized. A. Albopictus cells clone C6/36 are less delicate than mosquito cells. Vaccination Method (Samuel and Tyagi 2006). The adoption of these cell lines has given a fast, responsive, and financially savvy approach for dengue infection detachment. The viral strain can impact the powerlessness of mosquito cell lines. Regardless of the way that cell societies are less powerless to mosquito immunization, they can deal with countless examples in a short measure of time. A significant number of similar benefits of dengue disengagement apply to mammalian cell societies as they do to infant mice (Buchy, Yoksan et al. 2006, for example, being costly, slow and serious.

Reverse Transcriptase PCR

Recently, reverse transcriptase-polymerase chain response (RT-PCR) tests for an assortment of RNA infections, including dengue infections, have been developed. RT-PCR necessitates single specimen work, in contrast to most other approaches that involve sampling mosquito swimming pools to detect viruses. The innovation takes into account multifold natural intensification of viral nucleic acid and has been utilised in an unexpected way to identify viral infections. The main benefit of this molecular approach is the speed with which dengue viruses may be checked for the presence of specimens, as well as the fact that it is exceedingly sensitive and specific in its detection. It has a high degree of specificity in lowering the cost of infection in mosquitoes, including adults and larvae. RT-PCR can become aware of even the tiniest bits of the virus-3. This methodology has likewise been utilized to distinguish and type dengue infection RNA in Aedes mosquitos acquired in the field, except for estimating the contamination rate in neighborhood Aedes mosquitos. Dengue seroserological, virological, and sub-atomic anticipation are completely covered by these three procedures (Carroll, Toovey et al. 2007).

Dengue Fever in Pregnancy Diagnosis

Dengue fever in pregnancy requires early finding and treatment. Early forecast is convoluted by the vagueness of logical information and the physiological changes that happen all through pregnancy, which can likewise confound the specialist. Disease doesn't have all the earmarks of being an avocation for obstetric intercession without a trace of connected feto-maternal issues. The analysis of dengue contamination affects obstetricians' administration choices and choices, especially the strategy for move, because of the controllable danger of bleeding because of thrombocytopenia. Hemolysis, expanded liver enzymes , low platelet count (HELLP) condition, which happens in ladies with toxemia and eclampsia, can likewise be related with raised liver catalysts, hemolysis, and low platelet counts. Dengue contaminations are affirmed by certain serology and viral PCR testing. From the South Asian subregion, there have been not many case provides details regarding dengue diseases during pregnancy. Vomiting, which is one of the notice signs and side effects, can likewise be confused with pregnant hyperemesis. The normal ascent in blood volume is connected to standard tachycardia, lower pattern BP, and lower baseline HCT. Nonetheless, misdiagnosis or prognostic augmentation stay a major concern, especially for the bustling obstetrician who might be unpracticed with dengue fever. There are only a modest bunch pregnancy issues that would probably confuse an unconscious specialist. Eventually during pregnancy, they remember ordinary modifications for the immunological, cardiovascular, and coagulation frameworks, just as febrile sicknesses and hepatic enzyme reactions. Regularly, when WBCs are estimated during pregnancy, they duplicate and shift to one side. Accordingly, because of dengue fever, even a small modification may be unseen. Essentially, being pregnant expands one's proclivity for coagulation, regardless of whether one's platelet count is for the most part low at that point. Besides, not at all like the Anopheline mosquitoes that communicate malaria, Aedes mosquitoes have a particular fascination for pregnant females. Be that as it may, such a report is not generally completed. Antibodies travel through the placenta comparable to fetal and neonatal results, and they can likewise ensure the newborn child at first. Nonetheless, in the event that the newborn child stays in the endemic locale, DHF and DSS are at risk. Subsequently, pregnant patients, particularly those without previous resistance, are at a huge danger of creating dengue fever while making a trip to where the infection is normal. In case this happens, both of these are maternal and fetal sequelae of an unmistakable perilous febrile condition, with the danger of haemorrage and shock, and there are no particular preventive measures to take, like vaccination or prophylactic medication. (Carroll, Toovey et al. 2007).

Management of Dengue Infection in Pregnancy

While moderate obstetric consideration is regularly suggested, 5/17 (34 percent) of the ladies in Sirinavin's review who had vertical dengue fever transmission were delievered by Cesarean segment, 4/36 (24 percent) required blood transfusions, and 1/36 (4 percent) had critical maternal haemorrage. Transfusions were additionally essential for 5/11 (35%) of the 12/17 (66%) vaginally given. The post pregnancy course was not recognized for 6/17 (30%) of the casualties

in this review. The board of infants was once troublesome with the advantage of the way that it was impractical to illuminate reliably toward the starting whether the side effects of the infant were because of dengue infection disease or different sorts of contamination. Of the 12/17 (66 percent) who were vaginally born, 5/11 (35 percent) required transfusions, as well. Consequently, while the review was being made, a large number of these youngsters went through a progression of analytic exploration and anti-toxin treatment. Regardless, without one, each of the kids progressed admirably. For purposes other than dengue fever, one neonatal passing may likewise have been incited. (Sirinavin, Nuntnarumit et al. 2004) "Consequently, in a Bangladesh article, Fatimil says, it was accounted for that " Fever, myalgia, and additionally haemorrage side effects in a pregnant lady ought to make a solid doubt that the child will have the condition also, and both the mother and the baby ought to be firmly checked (Carroll, Toovey et al. 2007)." In these tests, the accompanying ends were found with regards to the transmission of maternal antibodies to the embryo. The transmission of maternal antibodies to the infant is the initial step. As per one scientist, antibodies with expanded cross-reactivity to various dengue serotypes specially travel through the placenta and are defensive to the infant after delievery because of their shielding productivity. While they might be defensive before all else, they may likewise incline the child to DHF or DSS as their stage advances, as per two unique authors. Second, low-birth-weight babies were found to have diminished immune response move stages (Fatimil, Mollah et al. 2003). From the accessible records, it's difficult to set up if previous placental pathology hampered the movement of these antibodies or regardless of whether the presence of dengue fever initiated placental mischief, bringing about low birth weight (Buchy, Yoksan et al. 2006).

Dengue in Neonates

In the event that the dengue infection was initially given to the newborn child through the vaginal mucosa upon entering the world, for example, with genital herpes contamination, any fetal benefit might be accomplished by going through Cesarean section. The presence of dengue infection in fetal and twin blood tests, in any case, seems to show intrauterine neonatal contamination, as per review (Fatimil, Mollah et al. 2003, Perret, Chanthavanich et al. 2005). Accordingly, a Cesarean would raise maternal danger while giving no advantage to the child. Perret et al. uncovered in their exploration that all instances of suggestive innate dengue contamination happened in children delievered to mothers who were exposed late in pregnancy... Contaminations happening close to the to the time of shipping would bring about an absence of defensive antibodies being delievered, bringing about direct viremia into the fetal blood course (Sirinavin, Nuntnarumit et al. 2004)." They likewise caution that the pervasiveness of inborn dengue contamination is probably going to be higher in any gathering of patients with less forerunner sickness and, thus, a higher weakness to the infection in the womb. Ordinary examination ought to, eventually, be suspected on clinical grounds and afterward demonstrated in the lab, as per the discoveries of these investigations, albeit the presentation was often unclear (Chotigeat, Kalayanarooj et al. 2003, Buchy, Yoksan et al. 2006). As per Sirinavin's assessment

report, the advancement of fever in infants went from 1 to 11 days after delievery, with a normal of 4 days and a term of 1–5 days. There gave off an impression of being no huge contrast in this whether the mother's dengue ailment was primary or secondary. Fever and thrombocytopenia struck the children as a whole, and 14 of the 17 (82 percent) were found to have a enlarged liver. In spite of having exceptionally low platelet counts, eleven of the seventeen patients (65%) showed some sign of dying, yet none required a transfusion. Four of the 17 kids (children or babies) (24%) experienced pleural emanation, while just 2/17 (12%) fostered a rash. While the titers are high, the transplacental maternal antibodies are believed to be guarding the newborn child for around a half year. Following that, lower titers may really bring about immunological improvement, inclining the infant to DHF or DSS (Perret, Chanthavanich et al. 2005). Breastfeeding might be exceptionally defensive, since certain individuals have been demonstrated to have the option to kill the dengue infection thusly. However, the extent of this protection has yet to be determined (Falkler, Diwan et al. 1975, Chotigeat, Kalayanarooj et al. 2003).

Conclusion

At the point when pregnant ladies have dengue fever, the investigation discovered that they are at a higher danger of complications. The condition might deteriorate the ordinary vaginal bleeding that happens after birth. Pregnant ladies with dengue fever had a higher danger of cesarean birth, foetal distress, and maternal death, as well as an increased risk of preeclampsia, obstetric haemorrhage, and eclampsia, according to the findings of the study. Dengue fever, on the other hand, was not linked to any negative maternal, foetal, or neonatal outcomes, despite the existence of dengue-like symptoms in the general population.

References

Adam, I., A. M. Jumaa, H. M. Elbashir and M. S. Karsany (2010). "Maternal and perinatal outcomes of dengue in PortSudan, Eastern Sudan." Virology Journal 7(1): 1-4.

Ashley, E. A. (2011). "Dengue fever." Trends in Anaesthesia and Critical Care 1(1): 39-41.

Balmaseda, A., S. N. Hammond, L. Pérez, Y. Tellez, S. I. Saborío, J. C. et am. (2006). "Serotype-specific differences in clinical manifestations of dengue." The American journal of tropical medicine and hygiene 74(3): 449-456.

Bhattacharya, N., H. Mukherjee, R. Naskar, S. Talukdar, G. Das, N. Pramanik and A. Hati (2014). "Serological diagnosis of dengue in laboratory practice in Kolkata." Indian journal of medical microbiology 32(3): 277-280.

Blum, A. J., M. F. Majid and P. J. Hotez (2018). "Pakistan: A nation held back by NTDs." PLoS neglected tropical diseases 12(10): e0006751.

Buchy, P., S. Yoksan, R. W. Peeling and E. Hunsperger (2006). "Laboratory tests for the diagnosis of dengue virus infection." in WHOobotSPfRaT, Tropical Diseases, eds. Scientific Working Group, Report on Dengue: 1-5.

Carroll, I. D., S. Toovey and A. Van Gompel (2007). "Dengue fever and pregnancy—a review and comment." Travel Medicine and Infectious Disease 5(3): 183-188.
Chan, M. and M. A. Johansson (2012). "The incubation periods of dengue viruses." PloS one 7(11): e50972.
Chotigeat, U., S. Kalayanarooj and A. Nisalak (2003). "Vertical transmission of dengue infection in Thai infants: two case reports." Journal-Medical Association Of Thailand 86(SUPP/3): 628-632.
Ciocchetta, S. (2018). The vector potential of the mosquito Aedes koreicus, Queensland University of Technology.
Deen, J. L., E. Harris, B. Wills, A. Balmaseda, S. N. Hammond, C. et al. (2006). "The WHO dengue classification and case definitions: time for a reassessment." The Lancet 368(9530): 170-173.
Diouf, K. and N. M. Nour (2017). "Mosquito-borne diseases as a Global Health problem: implications for pregnancy and travel." Obstetrical & gynecological survey 72(5): 309-318.
Falkler, W., A. Diwan and S. Halstead (1975). "A lipid inhibitor of dengue virus in human colostrum and milk; with a note on the absence of anti-dengue secretory antibody." Archives of virology 47(1): 3-10.
Fatimil, L. E., A. H. Mollah, S. Ahmed and M. Rahman (2003). "Vertical transmission of dengue: first case report from Bangladesh." Southeast Asian J Trop Med Public Health 34(4): 800-803.
Gehlot, H., O. P. Yadav, S. Sharma, G. Nagar, A. Yadav and P. Gupta (2017). "A study of dengue fever in pregnancy and its maternal and fetal prognosis." Int J Reprod Contracept Obstet Gynecol 6: 3414.
Henchal, E. A. and J. R. Putnak (1990). "The dengue viruses." Clinical microbiology reviews 3(4): 376-396.
Khan, E. A. (2016). "Dengue fever: A major public health problem of our time." Rawal Medical Journal 41(2): 139-141.
Luppi, P. (2003). "How immune mechanisms are affected by pregnancy." Vaccine 21(24): 3352-3357.
Machain-Williams, C., E. Raga, C. M. Baak-Baak, S. Kiem, B. J. Blitvich and C. Ramos (2018). "Maternal, fetal, and neonatal outcomes in pregnant dengue patients in Mexico." BioMed research international 2018.
Martina, B. E., P. Koraka and A. D. Osterhaus (2009). "Dengue virus pathogenesis: an integrated view." Clinical microbiology reviews 22(4): 564-581.
Mor, G., I. Cardenas, V. Abrahams and S. Guller (2011). "Inflammation and pregnancy: the role of the immune system at the implantation site." Annals of the new York Academy of Sciences 1221(1): 80.

Paixão, E. S., Maria da Conceição, N. C., Teixeira, M. G., Harron, K., de Almeida, M. F., et al. (2017). Symptomatic dengue infection during pregnancy and the risk of stillbirth in Brazil, 2006–12: a matched case-control study. The Lancet infectious diseases, 17(9), 957-964.

Paixão, E. S., M. G. Teixeira, N. C. Maria da Conceição, M. L. Barreto and L. C. Rodrigues (2018). "Symptomatic dengue during pregnancy and congenital neurologic malformations." Emerging infectious diseases 24(9): 1748.

Paixão, E. S., M. G. Teixeira, N. C. Maria da Conceição and L. C. Rodrigues (2016). "Dengue during pregnancy and adverse fetal outcomes: a systematic review and meta-analysis." The Lancet infectious diseases 16(7): 857-865.

Perret, C., P. Chanthavanich, K. Pengsaa, K. Limkittikul, P. Hutajaroen,et al. (2005). "Dengue infection during pregnancy and transplacental antibody transfer in Thai mothers." Journal of Infection 51(4): 287-293.

Rashed, A. (2021). Seroprevalence and clinical characteristics investigation of Dengue virus infection in rural Bangladesh during 2019 Dengue outbreak, Brac University.

Samuel, P. P. and B. Tyagi (2006). "Diagnostic methods for detection & isolation of dengue viruses from vector mosquitoes." Indian journal of medical research 123(5): 615.

Sirinavin, S., P. Nuntnarumit, S. Supapannachart, S. Boonkasidecha, C. Techasaensiri and S. Yoksarn (2004). "Vertical dengue infection: case reports and review." The Pediatric infectious disease journal 23(11): 1042-1047.

Sondo KA, Ouattara A, Diendéré EA, Diallo I, Zoungrana J, et al. (2019). Dengue infection during pregnancy in Burkina Faso: a cross-sectional study. BMC infectious diseases. 19(1):1-5.

Vazquez, S., A. Perez, D. Ruiz, R. Rodriguez, M. Pupo, N. et al. (2005). "Serological markers during dengue 3 primary and secondary infections." Journal of Clinical Virology 33(2): 132-137.

Zhang, H., Z. He, W. Zeng and H.-J. Peng (2017). "Roles of interferons in pregnant women with dengue infection: protective or dangerous factors." Canadian Journal of Infectious Diseases and Medical Microbiology 2017.