

**BREKKBONE FEVER CAN PROMOTE ACUTE OSTEOMYELITIS IN NEONATES THROUGH BREASTMILK**Asafeya A.¹, Dr. Britto Duraisingh², Dr. S. Haja Sheriff³ and T. Sivakumar⁴¹Pharm.D Intern Student, Department of Pharmacy Practice, Nandha College of Pharmacy-Erode, Tamilnadu.²Clinical Pharmacist, Pharm. D, M.Sc(C&PT), Ganga Medical Centre & Hospitals (P)ltd, Coimbatore.³Head of Department, Department of Pharmacy Practice, Nandha College of Pharmacy, Erode, Tamilnadu.⁴Principal, Nandha College of Pharmacy, Erode, Tamilnadu.***Corresponding Author: Asafeya A.**

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ABSTRACT

We report a case of vertical transmission of breakbone fever (dengue). The virus was detected and quantified by reverse transcription polymerase chain reaction in sequential blood samples from mother and child as well as in breast milk, but not in cord blood. This case poses questions about the risk of breast feeding transmission of dengue virus.^[1] Early recognition of congenital dengue will significantly reduce maternal and infant mortality. Proper management and supportive treatment is required for thrombocytopenia and hemorrhagic manifestations in dengue fever.^[3]

KEYWORDS: Dengue Virus; Breast Milk; Vertical Transmission; Breast Feeding; Newborn.**INTRODUCTION**

Dengue fever is an emerging viral disease caused by four dengue virus (DENV) serotypes of genus Flavivirus and is a major cause of morbidity in tropical and subtropical areas. DENV is transmitted between human hosts by mosquito vectors. Other transmission modes have been described through blood, mucocutaneous, and maternal-fetal routes.^[10] In neonates, vertical transmission of dengue produces varying symptoms, from fever with thrombocytopenia, sepsis and osteomyelitis. We report a case of vertical DENV transmission that illustrates the evolution of viremia in a newborn as well as the presence of DENV in breast milk.^[2]

CASE REPORT

A 16day old-term neonate was admitted with fever for past two days. Then developed rashes all over the body. On examination the heart rate was 190/min, respiratory rate 60/min, temperature 101.8⁰F per axilla with normal perfusion. Neonatal reflexes were active. The neonate was treated with presumptive diagnosis of neonatal septicaemia with parenteral cefotaxime and ampicillin. The fever persisted till 5th day of admission (21st day of life), and additional findings were limitation of movement of left lower limb with warm, tender swelling of distal thigh. Investigation revealed haemoglobin 14.3g/dl, total leukocyte count 12500 cells/cmm, platelet count 21000 cells/cumm and negative serum C-reactive protein (214mg/dl). As there was ongoing dengue epidemic the case was investigated for it. Investigation revealed platelet count 26000 cells/cumm, SGOT- 18.8

U/L, SGPT- 28.9 U/L, Positive serum IgM for dengue. Mother also had positive IgG and IgM for dengue. After the view of CBCand CRP, antibiotics changed to injection vancomycin and injection azithromycin. Baby improved within one week and was discharged after 25days.

DISCUSSION

Vertical transmission of dengue is not so uncommon rather its misdiagnosis causes healthcare system in a state of negligence to report. This underreporting could also be due to asymptomatic infection as the symptoms are almost similar to other viral infection.^[1]

The incubation period of dengue virus in humans is 3-10 days and its half-life in neonates is 40 days. The mother and newborn symptoms may vary. In the current case the mother was asymptomatic while the infected infant was febrile with few petechial rashes.^[5]

The mechanism of thrombocytopenia is a complex process involving the activation of platelets, pro-coagulants and anticoagulants, various compliment, cytokines and endothelial cells. Thrombocytopenia and platelet destruction are common in dengue fever and it might be due to suppression of bone marrow and the peripheral destruction of platelets, the later induced by platelet antibodies.^[9] Patients should be monitored for hemorrhagic manifestations and thrombocytopenia.

Diagnosis can confirm by laboratory tests like dengue virus isolation, dengue virus nucleic acid detection, NS1 antigen detection and by checking other serological tests. Here dengue NS1 was negative and dengue IgM was positive in infant and dengue IgG, IgM were positive in mother.^[3]

The diagnosis of Neonatal Osteomyelitis (NO) in this baby was based on clinical signs and symptoms, laboratory findings, radiological as well as positive blood culture. Diagnosis of osteomyelitis in the neonates can be challenging and is often delayed as it is rare in the neonatal period and frequently presence with nonspecific signs of illness.^[8] In this case X-ray of the affected limb confirmed the suspicion of NO in this baby.^[7]

This case provides evidence, for presence of DENV in the breast milk during the acute dengue infection. Though perinatal infection cannot be strictly excluded, our result suggests that breast milk may be possible route of DENV transmission from mother to child.^[6] However, other routes of transmission through placenta or amniotic fluid cannot be ruled out. Transmission to the child to mosquito bite is regarded as impossible in NICU.

The infant's extended contact time with milk during feeding and the large volume of intake compared to very small blood volumes reported as infectious make transmission through breast feeding plausible. Should breast milk be the route of transmission, a short incubation period in our case might be related to high infective dose.

CONCLUSION

To summarize, we report a case of DENV vertical transmission with a detailed clinical, biological and virological description. Moreover, we report the presence of DENV in breast milk. Significant breast milk viral loads and the breast feeding transmission route described for other flavivirus make DENV transmission through breast feeding plausible.^[4] The case reported raises concern about infants being breastfed by mothers presenting acute dengue infection. Further work is clearly required to evaluate the risk of transmission of DENV through breast milk and acute osteomyelitis is the secondary complication of dengue.

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