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ZIKA VIRUS IN CENTRAL INDIA: FIRST TIME EVER REPORTED IN CHILDREN WITH ATYPICAL PRESENTATION

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ABSTRACT

Vector borne disease like zika virus infections is showing worldwide emerging trend over past few years. We report first two cases in pediatric population with atypical presentation in central part of India. The first case had fever, body rashes with seizures and the second case was having intracranial bleeding. However most of the available literature on zika virus infection in pediatric age group is based on congenitally acquired cases. The two cases we are reporting are acquired cases of zika virus infection with atypical presentation.

INTRODUCTION

Vector borne diseases are very common across the globe and accounts to more than one billion cases occurrence annually, resulting in over one million deaths. A. *aegypti* and A. *albopictus*, are efficient vectors for the dengue (DENV), chikungunya (CHIKV), Zika (ZIKV) and yellow fever viruses [1-3]. With recent increase in international travels, transport and changing climates, these diseases are showing their presence in wide geographical regions with variation in clinical severity and frequencies. So, it is need of the hour that these diseases should be documented, surveyed and analysed to assess the spectrum of morbidity and mortality. Although ZIKV infections were rarely found in asian subcontinent but recently ZIKV has shown its presence in few parts of India. We report the first 2 cases with atypical presentation in pediatric age group in central India which are first time ever reported from this geographical area.

Case 1

A 7 months old male child was admitted with complaints of fever, rashes and 3-4 episodes of loose stools since 10 days. On examination his temperature was 101.5 F. Rashes were erythmatous, reddish brown, non pruritic, non palpable and distributed unevenly. There were no other abnormal findings. He had one episode of generalized tonic clonic seizures on next day of admission. His complete blood picture, random blood sugar and cerebrospinal fluid examination were unremarkable, peripheral smear for malaria parasite, IgM for dengue and measles were negative. MRI brain could not be done because of financial constraints. The infection with other flavi virus like ZIKV was suspected and rT-PCR was asked and was found to be positive for ZIKV. With supportive and symptomatic therapy, the child improved over 4 days, rashes were also contained to lower limbs only which were resolved on follow up.

Case 2

A 45 days old male child admitted with fever since 4 days and 2 episodes of abnormal body movements on the day of admission. Antenatal history was unremarkable with birth weight 2000 grams. On examination vitals were stable, Head circumference was between -1 to -2 SD. Pallor and third cranial nerve palsy was present. After admission relevant investigations like liver function test, renal function test, serum electrolytes (sodium, potassium, calcium) and activated partial thromboplastin time, blood culture and were unremarkable except the hemoglobin which was 5 gm% and increased prothrombin time with INR 1.5. Magnetic resonance image of brain revealed intraparenchymal bleed, cortical laminar necrosis, sub acute infarcts diffusely involving bilateral cerebral hemisphere and sub acute infarcts in pons. IgM for viral markers like dengue, chikungunya and ZIKV infection were sent. The child was found positive for ZIKV infection. Maternal samples of blood, urine and breast milk were tested and found to be negative for zika virus infection. He was managed with supportive and symptomatic therapy. Gradually the child improved over next 10 days and was discharged with advice for regular follow up.

DISCUSSION

Zika virus was first time isolated from sentinel rhesus monkeys in the Zika forest of Uganda [4]. Historical outbreak in Yap Island, Micronesia in 2007, Detection of ZIKV through syndromic surveillance in Combodia in 2010 and few years ago in French Polynesia in 2013 and 2014 has clearly shown the presence of ZIKV infection in Asia and the Pacific region, which in many respects are the same regions where dengue is also endemic [5-6]. In the favourable climatic conditions of south asiatic regions including India, A. aegypti are capable of transmitting DENV and ZIKV, making it possible that zika virus can also circulate in areas in which dengue is endemic. The clinical signs and symptoms of infection with Zika virus can be easily confused with dengue, mainly because of the fever, headache, and generalized rash-like presentation. Zika virus infections are, for the most part, self-limiting and without significant sequelae [5]. ZIKV transmission can occur by infected mosquito bite, vertical transmission from an infected woman to her fetus, through blood transfusion or sexual contact. Although self-limiting and mild to moderate course, ZIKV is an important health issue because it has been linked to microcephaly, Guillain-Barré syndrome (GBS) and other severe neurological defects in newborns whose mother were positive for ZIKV [6-7].

As we reported in our second case, he was not having microcephaly, no intracranial congenital malformation but had intracranial bleed. ZIKV may affect the prothrombin time and can lead to bleeding manifestations however studies are required to find the causal relationship for such bleeding manifestations. Major intracranial anomalies were reported from a large retrospective case series published from Brazil. They found a range 8–35 (mean = 27.8) weeks of gestation as being critical for Zika related microcephaly[8] however they didn't reported any intracranial bleeding manifestations.

Kwong et al commented on the possibility of cross -reactivity of individual infection can reinforce an incorrect classification of a Zika virus infection as dengue [9]. The availability of molecular testing using primers in rT-PCR to conserved regions of the flavivirus genus has advantage in detecting a different etiologic agent. The collection of urine and nasopharyngeal swab specimens at the onset of illness could also be used as alternative or complementary samples.

There is limitation of molecular-based assays because of their dependence upon significant viremia for detection, delay in seeking medical attention and collection of the appropriate clinical samples.

This case report describes the varied clinical presentation of ZIKV infection in pediatric age group. Further clinico-pathological studies are required to know how this virus behaves in pediatric population in our climate.

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