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Letter to the Editor

Zika virus disease: What to do and what to prepare at present?

Dear Editor,

I read with extreme interest the Contemporary Issue titled “Dengue, chikungunya . . . and the missing entity – Zika fever: A new emerging threat” by Tilak et al. published in *Med J Armed Forces India* 2016;72:157–63.¹ “it is important that we keep a close vigil on this emerging vector-borne disease – the ‘ZIKA’ fever”.¹ In fact, how to correspond with the emerging Zika virus disease is a very interesting issue. To have a close vigil is important but it is still the topic on “how to”. Indeed, the difficulty in monitoring of the situation of emerging Zika virus disease is the diagnosis of the case. It is very hard to diagnose the case and it is likely to be a high rate of under-diagnosis and missed diagnosis.^{2,3} Without a good sensitive and specific test, the accurate diagnosis of the case is usually problematic. The active survey of the disease, such as immune-survey, might be useful but it means a very high cost. To prepare by prediction might be a good solution. The use of computational technique, GIS model as well as mathematical prediction model might be a good example. Hence, the urgent thing to do should be the implementation of the good diagnostic system as well as a computational tool to help monitor and perform surveillance of Zika virus disease.

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Viroj Wiwanitkit^{a,b,c,*}

^aVisiting Professor, Hainan Medical University, China

^bVisiting Professor, Faculty of Medicine, University of Nis, Serbia

^cHonorary Professor, Dr DY Patil Medical University, India

*Tel.: +66 24132436; fax: +66 24132436

E-mail address: wviroj@yahoo.com

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Reply

Dear Editor,

The authors appreciate the thought provoking response of the reader. The authors agree that we as a country have to address certain vital issues regarding Zika surveillance. The issue of diagnostics is a major concern; however, it is very pertinent that the medical fraternity is apprised of Zika in order to have a high index of suspicion while dealing with febrile cases in a dengue/chikungunya outbreak prone area.

GIS has been used successfully to map vector *Aedes* hotspots for dengue/chikungunya and the same can be extrapolated for predicting Zika outbreaks as well.

There is now scientific consensus that Zika virus is a cause of microcephaly and Guillain-Barré syndrome. WHO¹ has classified the disease risk as-

- (a) Countries with epidemic transmission of Zika virus

- (b) Countries with possible endemic Zika virus transmission
- (c) Countries at risk of Zika virus transmission
- (d) Countries with no/low risk of mosquito-borne Zika virus transmission

India possibly falls into the third group where mosquito vectors are present but the disease has never been documented. In such cases, the endeavour should be to detect imported Zika cases, the beginning of autochthonous transmission, instances of Zika virus transmission modes other than vector-borne and whenever feasible and appropriate, investigate whether Zika virus was present in the past and the level of intensity of circulation during earlier introductions.

Surveillance, undoubtedly is the key to preventing outbreaks of *Aedes* borne diseases and thus needs to be strengthened. The Armed Forces may initiate laboratory and clinic based as well as mosquito surveillance centres across the country, especially in high risk areas where dengue and chikungunya are endemic. The clinic and laboratory based surveillance may consist of all fever cases of service personnel reporting to the hospital.^{1,2} Effective implementation of vector management strategies is crucial in prevention of *Aedes* borne diseases.

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Rina Tilak

Scientist 'F', Department of Community Medicine, Armed Forces Medical College, Pune 411040, India
E-mail address: rinatilak@hotmail.com

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Letter to the Editor

Zika: A teratogen and also a sexually transmitted infection!

Dear Editor,

I read with interest the contemporary issue titled “Dengue, chikungunya ... and the missing entity – Zika fever: A new emerging threat” by Tilak et al. published in *Med J Armed Forces India* 2016;72:157–163¹ and was delighted to find such a concise yet scientifically exhaustive article on Zika virus. It is written in a form which gives ample clarity of thought in the midst of prevalent 'over-information' in the media about this relevant public health issue. The virus is proving to be a threat not only to the health care systems in the Americas but also a hindrance to international travel, not to mention the threat it has posed on the forthcoming Rio Olympics to be held in Brazil this year.

As a corollary to the paragraph on Zika virus infection's association with microcephaly and other birth defects, it is relevant to mention that Zika virus has been declared a teratogen by the Centre for Disease Control, USA. The report based on which this announcement was made uses the Shepard's Criteria which includes the “rare exposure-rare defect” approach as well as the epidemiological approach for establishing causal association between prenatal exposure to an 'agent' and birth defects among neonates/infants.² Though the cases of Zika virus infection have been on record since 4–5 decades, it was only during the 2013 French Polynesian and the 2015 Brazilian outbreaks that its association with birth defects and GBS started to emerge. With Zika now fulfilling the

Shepard's Criteria, the gold standard for teratogenicity, the period of reluctant speculation is over.

Another interesting finding about the virus is its probable transmission by sexual route. Cases are on record where such a transmission is observed.³ The virus has been found to be present in the semen of affected males after 18 as well as 24 days after onset of symptoms. From a preventive perspective, fighting a battle on two fronts viz. mosquito control and sexual transmission prevention will be a double whammy for a large country like ours.

Thus, in the light of Zika being a teratogen and a possible STI, India needs to be on guard for entry of this virus into its population. It will require astute epidemiological surveillance for identifying clustering of birth defects, fetal losses, routine prenatal ultrasounds detecting intracranial calcifications, increased incidence of GBS and also to add Zika to the differential diagnosis of “Fever with rash” syndromic approach. After all, it was the picking up of trends in disease frequency vis-a-vis the presence of epidemic in French Polynesia and in Brazil that initiated the thought process that fetal and neurological defects may be associated with Zika virus. Given the similarity of clinical and epidemiological profile of dengue and Zika fevers, using the approaching dengue season as a large-scale surveillance opportunity at a national level would be worthwhile.