Comment on: Definitive tests for dengue fever: when and which should I use?

Singapore Med J 2018; 59(3): 165 https://doi.org/10.11622/smedj.2018031

Dear Sir,

The article by Chan et al provided an excellent overview of the epidemiology, clinical practice, laboratory diagnosis and public health issues surrounding dengue fever in Singapore, as well as in other locations in the world.[1] We wish to highlight the report of a fifth serotype of the dengue fever virus (DENV-5).[2] This new serotype is a sylvatic dengue virus that historically existed only in wildlife, but appears to have spilled over to humans. Although this new serotype appears to resemble DENV-4, it has been noted that DENV-5 constitutes a unique, distinct phylogenetic group, but this finding requires further confirmation.[3] Historically, the sylvatic cycle and human cycle of dengue viruses were ecologically and evolutionarily distinct, with only periodic accidental infection of humans by sylvatic forms of the dengue virus.[4] DENV-5, the first new serotype reported in 50 years, produces a different antibody response from the other four serotypes of dengue fever.[3] What may be of greater consequence is that the new serotype may be the beginning of the emergence of other new sereotypes as adaptive barriers recede due to a changing environment.

Human encroachment of forests, global change and population growth are likely to be impacting the potential spread of sylvatic strains of dengue to human strains.[4] Serological and clinical differentiation of the sylvatic and human dengue strains does not appear to be practical, thus making surveillance of new dengue viruses difficult.[4,5] Therefore, the public health controls as discussed by Chan et al seem to be the most effective mechanism for prevention of dengue fever at this time. These findings also serve as a warning about future problems resulting from climate and environmental change.

Yours sincerely,

Luca Cegolon[1], WC Heymann[2], John H Lange[3]

[1]IRCCS Burlo Garofolo, Scientific Directorate, Trieste, Italy, [2]Sarasota County Health Department, Florida, [3]Envirosafe Training and Consultants, Pennsylvania, United States.
l.cegolon@gmail.com

References

1. Chan HBY, How CH, Ng CW. Definitive tests for dengue fever: when and which should I use? Singapore Med J 2017; 58:632-5.
2. Mustafa MS, Rasotgi V, Jain S, Gupta V. Discovery of fifth serotype of dengue virus (DENV-5): a new public health dilemma in dengue control. Med J Armed Forces India 2015; 71:67-70.
3. Taylor-Robinson AW. A putative fifth serotype of Dengue - potential implications for diagnosis, therapy and vaccine design. Int J Clin Med Microbiol 2016; 1:101.
4. Vasilakis N, Cardosa J, Hanley KA, Holmes EC, Weaver SC. Fever from the forest: prospects for the continued emergence of sylvatic dengue virus and its impact on public health. Nat Rev Microbiol 2011; 13:532-41.
5. Franco L, Palacios G, Martinez JA, et al. First report of sylvatic DENV-2-associated dengue hemorrhagic fever in West Africa. PLoS Negl Trop Dis 2011; 5:e1251.