Prevalence of chikungunya and dengue in a recent outbreak of seasonal febrile illness: an observational study in a tertiary referral hospital at Kolkata, India

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Background: An outbreak of fever with rash/arthralgia/arthritis occurred in the state of West Bengal, India in the months of September to November, 2011.

Methods: The patients who presented at the OPD of School of Tropical Medicine, Kolkata, with symptoms of fever, rash, arthralgia /arthritis of short duration were studied. Investigations included blood counts, malaria parasite, IgM Dengue /Chikungunya antibodies. Chikungunya PCR study could be done in some cases. Patients are being followed up.

Results: Of 60 samples tested for chikungunya PCR, 30 were positive-4 out of 6 in samples collected within 3 days of onset of symptoms, 14/24 in 4-6 days, 8/18 in 7-9 days, 3/10 in 9-15 days and ½ after 15 days. 321/512 (62.7%) samples tested positive for IgM Chikungunya antibody. 147/480 (30.62%) samples tested positive for IgM dengue antibody. In 72 cases, though the symptoms were suggestive, no diagnosis could be reached by serological testing. 46/147 (31.29%) of dengue cases belonged to 0-10 year age group, however, only 7/321 (2.18%) Chikungunya cases belonged to this age group. Only 20 (13.60%) Dengue cases were above 40 years of age. However, 175/321 (54.52%) Chikungunya cases belonged to 31-50 years age group and 70 cases (21.80%) were above 50 years of age. Thus it clearly indicates that chikungunya occurred in a higher age group in comparison to Dengue. There was no difference in sex distribution of cases. Patients with prolonged suffering, (more than 15 days) tested reactive to chikungunya IgM in much more numbers than Dengue IgM. 23 (8 male, 15 female) i.e. 7.1% went on to develop post Chikungunya arthritis. Most were female in 40-60 year age group. Maximum involvement was in knee followed by ankle, metacarpo-phalangeal, wrist and elbow joints. All participants received the supportive management and the above-mentioned numbers left with residual joint complaints of various duration jeopardizing the quality of lives.

Conclusion: In the present episode, chikungunya affected predominantly the adult population whereas dengue affected mainly the children. 7.1% of chikungunya affected patients (mostly adult females) developed chronic polyarthritis.

http://dx.doi.org/10.1016/j.ijid.2012.05.248

Fatal cases associated with secondary dengue infection

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Background: Dengue is one of the most important mosquito-borne diseases. The disease can manifests as mild dengue fever (DF) or severe and life-threatening dengue hemorrhagic fever (DHF)/ dengue shock syndromes (DSS). The dramatic rise in dengue incidence globally in the recent years is accompanied with increasing number of fatal infections especially in the hyperendmic regions where there are more than one dengue virus genotypes co-circulating. There are also reports of possible increasingly more frequent atypical clinical presentation of severe dengue. In the present study, we examined the clinical presentations of several dengue-associated deaths recorded in our hospital from year 2006 and 2007.

Methods: A retrospective study was performed following approval of the University of Malaya Medical Centre Ethics Committee. Ten fatal dengue cases recorded at the UMMC from year 2006 to 2007 were identified, and the relevant clinical and laboratory records were examined. Serological tests to detect dengue-specific IgM and IgG and dengue-specific NS1 antigen were performed.

Results: Of the 10 fatal dengue cases reviewed, 9 were female. Eight of the patients had evidence of secondary dengue infection. Deaths occurred at an average of 2.4 day post admission except for 2 patients who were brought dead to the hospital. The mean illness duration prior to hospitalization was 4.7 days. The common presentation recorded include persistent vomiting (n=9), body ache (n=8), bleeding manifestations (n=7), abdominal pain (n=6) and diarrhea (n=6). Shock complicated with septicemia, massive multiple bleeding, multi-organ failure, and coagulopathy were the common causes of deaths.

Conclusion: Findings from the study suggest that there is no significant atypical clinical presentation amongst the recent fatal cases seen here in comparison to those previously reported. All patients who succumbed to dengue had secondary dengue infection even though they may have slightly different clinical presentation. This suggests the relevance of secondary infection to the immunopathology of dengue. Early recognition and diagnosis of severe dengue is crucial in order to provide proper and efficient patient management and treatment.

http://dx.doi.org/10.1016/j.ijid.2012.05.249