

Chikungunya Virus Infection among Patients with Febrile Illness Attending University of Maiduguri Teaching Hospital, Nigeria

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Abstract : Background: Chikungunya (CHIK) virus, a previously anecdotally described arbovirus, is now assuming a worldwide public health burden. The CHIK virus infection is characterized by potentially life threatening and debilitating arthritis in addition to the high fever, arthralgia, myalgia, headache and rash. Method: Three hundred and seventy (370) serum samples were collected from outpatients with febrile illness attending University of Maiduguri Teaching Hospital, Nigeria, and was used to detect for Chikungunya (CHIK) virus IgG and IgM antibodies using the Enzyme Linked Immunosorbent Assays (ELISAs). Result: Out of the 370 sera tested, 39 (10.5%) were positive for presence of CHIK virus antibodies. A total of 24 (6.5%) tested positive for CHIK virus IgM only while none (0.0%) was positive for presence of CHIK virus IgG only and 15 (4.1%) of the serum samples were positive for both IgG and IgM antibodies. A significant difference ($p < 0.0001$) was observed in the distribution of CHIK virus antibodies in relation to gender. The males had prevalence of 8.5% IgM antibodies as against 4.6% observed in females. On the other hand 4.6% of the females were positive for concurrent CHIK virus IgG and IgM antibodies when compared to a prevalence of 3.4% observed in males. Only the age groups ≤ 60 years and the undisclosed age group were positive for presence of CHIK virus IgG and/or IgM antibodies. No significant difference ($p > 0.05$) was observed in the seasonal prevalence of CHIK virus antibodies among the study subjects Analysis of the prevalence of CHIK virus antibodies in relation to clinical presentation (as observed by Clinicians) of the patients revealed that headache and fever were the most frequently encountered ailments. Conclusion: The CHIK virus IgM and concurrent IgM and IgG antibody prevalence rates of 6.5% and 4.1% observed in this study indicates a current infection and the lack of IgG antibody alone observed shows that the infection is not endemic but sporadic. Recommendation: Further studies should be carried to establish the seasonal prevalence of CHIK virus infection vis-à-vis vector dynamics in the study area. A comprehensive study need to be carried out on the molecular characterization of the CHIK virus circulating in Nigeria with a view to developing CHIK virus vaccine.

Keywords : Chikungunya virus, IgM and IgG antibodies, febrile patients, enzyme linked immunosorbent assay

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