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A STUDY OF CHIKUNGUNYA AMONG ADMITTED PATIENTS IN RIMS RANCHI DURING OUTBREAK 2018

Medicine

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ABSTRACT

During epidemics of Jharkhand 2018 (July to November), we recruited the 50 admitted patients in the department of medicine to study and describe the diversity of clinical manifestations, laboratory findings and outcome of chikungunya fever. We found high grade fever and arthralgia in 100% cases, headache in 70%, myalgia in 52%, itching in 32%, blanching and maculopapular rash in 45% cases. Leukopenia and leucocytosis was found in 24% and 8% respectively, thrombocytopenia in 25%, but there was 50% of dengue co infection with 38% of thrombocytopenia. There was bipedal oedema, facial swelling, post auricular and cervical lymphadenopathy in 10% cases. There was no mortality in this group.

KEYWORDS

Chikungunya, Fever, Polyarthralgia

BACKGROUND

Chikungunya is an arthropod born arboviral infection. The Chikungunya virus is an RNA virus that belongs to the alpha virus genus of the Togaviridae family. The name 'Chikungunya' has been derived from a root verb in the Kimakonde language, which means, "that which bends up" i.e. which becomes contorted. The name reflects the stooped appearance of the sufferers due to arthralgia. Epidemics of fever, rashes and arthritis which resembled Chikungunya fever were recorded as early as in 1824 in India and elsewhere [1]. However, the virus was first isolated in 1952-53 in Tanzania from both man and mosquitoes during an epidemic of fever [2,3], followed by epidemics in other parts of the country [4]. The last outbreak was recorded in Maharashtra in 1973 [5]. During the chikungunya epidemic in Ahmedabad, India, in 2006, about 60,000 cases were described; the number of deaths during the four months of peak epidemic activity exceeded the average death rate during those months in the previous four years by almost three thousand [6]. Dengue and Zika viruses are transmitted by the same mosquito vectors as chikungunya. The viruses can circulate in a geographic region, and co infections have been documented [7]**.** We planned to conduct an observational study among all the chikungunya patients admitted in the department of medicine RIMS Ranchi, with the objectives of studying the diversity of clinical manifestation, laboratory findings and outcome of chikungunya fever.

METHOD

All patients admitted with acute febrile illness and polyarthralgia/ polyarthritis in department of medicine RIMS, Ranchi were evaluated. Only confirmed cases were included in this study in which Chikungunya IgM antibody were positive by NIV ELISA Kit in presence of clinical symptoms consistent with Chikungunya fever. Detailed history and clinical examination followed with basic laboratory evaluation were done. Relevant investigations like rapid antigen test for malaria parasite and dengue serology (NS1Ag and IgM) were done to exclude alternative diagnosis or presence of concurrent infections.

RESULTS:

During epidemics of Jharkhand 2018 (July to November) about 728 patients presented to the hospital itself with acute febrile illness, rash and joints pain, on investigations 50 cases were confirmed chikungunya IgM positive cases. We studied these total of 50 confirmed cases of chikungunya fever for their demographic, clinical and blood investigation reports of total and differential lymphocytic counts and hepatic enzyme assessment.

The mean age of these patients was 32 years. We found high grade fever (above 100°F) and arthralgia especially small joints and large joints involved in 100% cases. 32% of cases were from rural areas while 68% cases were from semi-urban/ urban areas. Headache was found as a prominent symptom in 70% cases. Myalgia was found in 52% of cases, itching was a prominent complain by 32% of cases. Blanching and maculopapular rash especially on chest, arms and legs were common and found in 45% cases. Leukopenia (counts <4000/dl) and leucocytosis (counts >12000/dl) was found in 24% and 8% respectively, while normal counts (counts 4000-12000/dl) were found in 68%. Among 50% dengue coinfected patients 38% had thrombocytopenia (platelet counts <150 k/ul) and 12% had normal platelet (counts 150-300k/ul). Those solely infected with chikungunya, the thrombocytopenia was found in 25% (platelet counts <150 k/ul) cases and rest 25% had platelet counts between 150-300 k/ul. Mild elevation of SGOT and SGPT (up to 3 times of the upper limit of normal) was detected in most of the cases however, high levels of liver enzyme elevation were not found in any of the cases. In 10% of cases bipedal oedema and facial swelling was found. Post auricular and cervical lymphadenopathy was found in 10% cases.

DISCUSSION

Chikungunya fever is typically a rapid onset febrile disease, many can pin point the time of onset of illness which is characterized by arthralgia, myalgia, headache and rash. The abrupt onset of fever follows an incubation period of 3 to 7 days (range 1 to 14 days); Fever may be high grade (>39ºC); the usual duration of fever is 3 to 5 days (range 1 to 10 days). Polyarthralgias may begin two to five days after onset of fever and commonly involves multiple joints. Arthralgia usually involves small and large joints in nearly all cases. For differential diagnosis in regions where chikungunya virus circulates, the debilitating polyarthalgia has a positive predictive value greater than 80% for chikungunya virus viremia.

Skin manifestations have been reported in 40 to 75 percent of patients. The most common skin manifestation is macular or maculopapular rash (usually appearing three days or later after onset of illness and lasting three to seven days). The rash often starts on the limbs and trunk, can involve the face, and may be patchy or diffuse. Pruritus has been reported in 25 to 50 percent of patients in some series. Severe chikungunya fever can manifest as encephalopathy, encephalitis, myocarditis, hepatitis and multi-organ failure. Haemorrhagic complications are rare, may be co-infection with dengue virus or coexisting condition such as chronic hepatitis. This can be persistent or relapsing arthralgia that is located mostly in distal joint, which may be associated with arthritis and may mimic rheumatoid arthritis in 25 to 35% of patients [8]. The frequency of symptom profile was in concordance to earlier Indian study [9].

Hepatic transaminases and creatinine may be elevated. A definitive diagnosis relies on virus detection through reverse-transcriptase-polymerase-chain reaction (RTPCR) testing during the viremic phase in the first week. Serum IgM is detectable from day 5 to several weeks to 3 months after the onset of illness and is also considered diagnostic [10]. Results observed in our study coincide with similar study performed in rajasthan during chikukungunya outbreak 2016 [11]. Unusual features observed in our study was facial oedema and bipedal swelling which was found in 10% of cases. Chikungunya though prevalent is under-reported. It is an important differential diagnosis in a febrile patient with crippling joint pains. The diagnosis of chikungunya can be made with certainty during an epidemic solely on clinical grounds by fever and polyarthralgias. To validate the results observed in this study will require further study in larger population of confirmed cases of chikungunya.

CONCLUSION :

High grade fever and small and large joint arthalgia were found to be most frequent symptoms of chikungunya, and no mortality was found in ours study.

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