

ACUTE COMPLICATIONS OF CHIKUNGUNYA FEVER IN A TERTIARY CARE HOSPITALSrinivasulu Dudyala¹, G.N. Nagesh², R. Manjunath³, H. Rajeev⁴, Vinayak Prabhu⁵, Sowmya Jayaram⁶**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Chikungunya fever is the arthropode borne viral infection transmitted by mosquitoes to humans. Earlier it was prevalent in those areas with humid atmosphere and plenty of rain with changing monsoon pattern this disease becoming prevalent in deccan land scape including Karnataka. It is important to recognise the clinical signs and symptoms, alterations in the biochemical parameters and the multi system involvement pattern to manage chikungunya fever cases effectively. The current study is undertaken to analyse the varying clinical presentation , laboratory parameters and complications of chikungunya Fever.

AIM: To study the various acute complications of chikungunya fever. **METHODS:** 100 cases of confirmed chikungunya infection admitted to KIMS, Bangalore between december 2009 to September 2011 were studied. A detailed clinical history and physical examination was done and baseline investigations were performed. The cases were followed-up daily for the clinical and laboratory parameters. The data related to each of these cases was collected, compiled and analysed.

RESULTS: Out of total 100 cases 54 were male and 48 were female. Most of the cases were found in September(22%), followed by October (22%), August (18%), July (16%).

Majority of patients were from urban area (56%) Most common LFT abnormality was raised SGOT and SGPT that was seen in 8% of the patients. 4% of patients had platelet count less than 20, 000.

Eighteen patients had systemic complications. Complications observed are Hepatitis (8%), meningoencephalitis (4%) conjunctivitis (4%) anduveitis in (2%). No death reported in the study.

CONCLUSION: In our present study, Hepatitis, Meningoencephalitis, Conjunctivitis and Uveitis are various Acute complications observed in the study.

Platelet count does not correlate with complications of the disease. A focused history, detailed clinical examination and appropriate relevant investigations can aid for early diagnosis and treatment.

KEY WORDS: Chikungunya fever, hepatitis,uveitis.

INTRODUCTION: Chikungunya is one of most frequent viral infection transmitted by mosquitoes to humans in recent time. Chikungunya virus is an arthropod-borne single-stranded RNA virus of the genus Alphavirus (Togaviridae family)¹. It is most closely associated other Alphaviruses that cause human joint disorders including o'nyong-nyong virus, Ross River virus, Mayaro virus, Sindbis virus and Barmah Forest virus. It is transmitted by Aedes mosquito. Outbreaks of fever have been reported quite frequently from different parts of the country. Chikungunya fever re-emerged as an explosive epidemic in India during 2005–2006, after a gap of 32 years, causing more than 1.3 million cases (WHO 2006). Chikungunya fever re-emerged in India after nearly 32 years in October 2005^{2,3},⁴ and the outbreak is ongoing. By July 2009, a total of 1,568,630 suspected cases were reported

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throughout India^{5,6}. However, this statistic is considered a gross underestimate⁷. More than one-half of these cases were reported from the southern Indian state of Karnataka^{5,6}.

The disease is mainly confined to south Indian states like Karnataka, Andhra Pradesh^{2,3,8}, Maharashtra, Orissa and Tamil Nadu. Chikungunya caused wide spread morbidity and heavy toll on health related expenditure in the infected people. So it has drawn global attention due to its explosive onset, rapid spread, high morbidity, myriad clinical manifestations and complications.

Its various complications are not well known. Only arthralgia is a well-known complication. Only few studies are available about chikungunya fever complications.

International travel has facilitated the introduction of the virus from endemic areas to non-endemic areas resulting in resurgence of the illness⁹. It is vital to recognize multi system involvement pattern in Chikungunya fever for early diagnosis and appropriate therapy. This study has been undertaken to know the various complications associated.

MATERIAL AND METHODS: The study protocol was approved by institutional research ethical committee. Written informed consent was obtained from all the patients. The study was a prospective single center trial study which included fifty patients admitted as probable cases by clinical suspicion, admitted at KIMS hospital, Bangalore, India over a period of one year. 100 patients identified as probable cases by clinical suspicion, admitted to KIMS hospital, Bangalore. The case definition was based on compatible history and examination, confirmed by chikungunya serology. A detailed demographic data, clinical history, physical examination and relevant baseline investigations were undertaken. Patient with Chikungunya fever with any other identified specific infection were excluded from the study.

For all cases, the rapid IgM capture ELISA test which has become one of the definitive diagnostic test as per WHO was done. During the Study based on the above criteria, serum samples were obtained on an average 5 to 7 days after Chikungunya fever symptoms had appeared.

Complete haemogram, Platelet count, Liver function tests, Blood urea, Serum creatinine, Ultrasound abdomen, Coagulation profile, ECG, Chikungunya IgM card test, Dengue rapid test, Malarial parasite (qbc), WIDAL test, RA factor, C R Pinvestigations were done. The patients were treated with analgesics, IV fluids, and as per the requirements for complications. The patients were stratified based on the presence or absence of complications. The frequency of various signs and symptoms and the values of various laboratory tests were recorded. As there is no comparative study involved, no significant statistical methods were applied.

RESULTS: In the present study highest number of cases were found in age group of 31 to 40 (36%), followed by in age group of 15 to 30 (22%). (Tab: 1) Out of total 100 cases 54 were male and 48 were female. Most of the cases were found in September(22%), followed by October (22%), August (18%), July (16%). (Graph: 1)

Majority of patients were from urban area (56%) Most common LFT abnormality was raised SGOT and SGPT that was seen in 8% of the patients. 4% of patients had platelet count less than 20,000.

Eighteen patients had systemic complications. Complications observed are Hepatitis (8%), meningoencephalitis (4%) conjunctivitis (4%) anduveitis in (2%). No death reported in the study.(Tab: 2).

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DISCUSSION: Our present study included 100 cases of serologically confirmed chikungunya fever who were admitted to KIMS Hospital and Research Centre, Bangalore, between December 2009 to September 2011.

Mean age of the patients was 42 years. Maximum number of patients was in the age group of 31-40 years (36%) followed by in age group 15-30(22 %) and minimum were in the age group of 60 and more years.

Study included 26 (54%) males and 48% females. Study included 58% patients from urban locality 42% patients were from rural area. Highest number of cases were seen in the months of September (22%), October (22%) and August (18%) that corresponds to post monsoon season. S.D. Suryawanshi, A.H. Dube*, R.K. Khadse*, et al reported similar results in their study where overall incidence of infection was 80% in the August month.

On examination 2 patients found to have bleeding, from gums their platelet count is less than 20,000. They improved spontaneously without platelet transfusion.

Central nervous system examination was normal except for 4 patients. Two patients Presented with high grade fever and severe headache, joint pains, altered sensorium and two more patient and neck stiffness headache, fever, joint pains. Both patients are middle aged with age between 30 – 40 years.

There was leucocytopenia ($TLC < 4000/mm^3$) in 22% of patients. Most of the patients (60%) had leukocyte count between 4,000-10,000. Mean WBC count is 6,700/ mm^3 . In study conducted by S A M Kularatne, M C Gihan, et al¹⁰ mean WBC count is 4,300/ mm^3 (Graph: 2)

Mean platelet count was 1.41cmm. Platelet count at the time of admission was below 20,000 in 4% of the patients and 20,000-50,000 in 12% of the patients.(Graph: 3). The bleeding manifestations were present in one patient with the platelet count of 20,000/ mm^3 . In study conducted by S.D. Suryawanshi, A.H. Dube, R.K. Khadse, S.V. Jalgaonkar¹¹ et al in Maharashtra 16% had thrombocytopenia with bleeding manifestation in one patient who had platelet count of 35,000.

Most common LFT abnormality was raised liver enzymes i.e., SGOT and SGPT that was seen in 8% of the patients. Among patients admitted, 82% patients had no complications and had an uneventful hospital stay. 18% patients had systemic complications including Hepatitis (8%), meningoencephalitis, (4%) conjunctivitis, (4%) and uveitis (2%). No deaths occurred in our study population (Tab: 2).

For all patients with hepatitis, other causes of hepatitis are ruled out by taking history of alcoholism, by doing blood tests like Hbsag, anti HCV, IgM Anti HAV, IgM ANTI HEV. For patients with meningoencephalitis, other causes of meningoencephalitis have been ruled out by doing CSF tests for tuberculosis, Herpes, Meningococci, Cryptococcus.

Mean duration of hospital stay was 6 days. 10% of the patients required hospital admission for 10 OR more days. Patients with complications had prolonged hospital stay. It correlated with study conducted by S A M Kularatne, M C Gihan, S C Weerasinghe et al.¹⁰

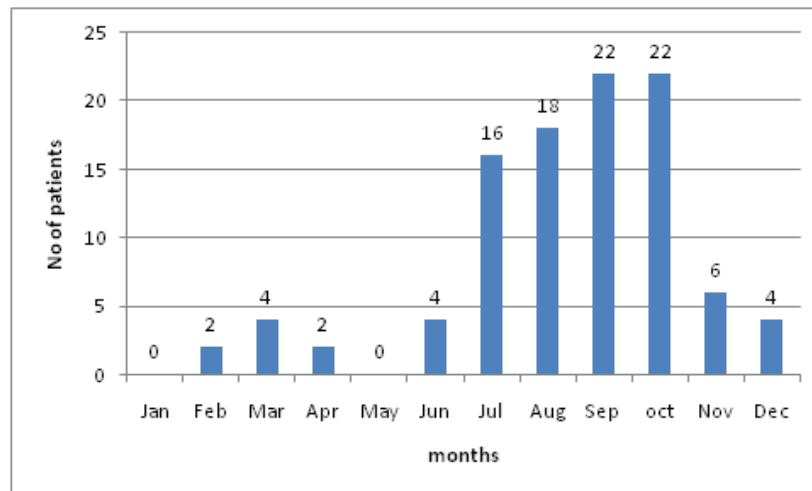
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AGE GROUPS(Yrs.)	NO OF PATIENTS
15-30	22
31-40	36
41-50	14
51-60	16
>61	12
	100

Table 1: Age wise distribution

COMPLICATION	NO OF PATIENTS
HEPATITIS	8
MENINGO ENCEPHALITIS	4
CONJUNCTIVITIS	4
UVEITIS	2

Table 2: Prevalence of complications

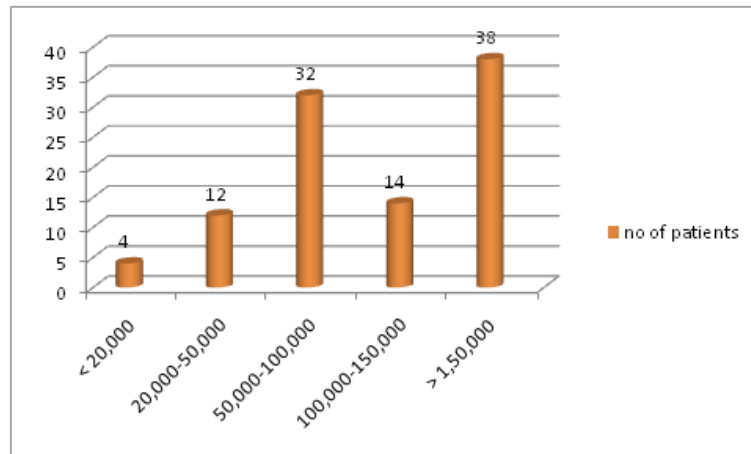


Graph 1: Distribution of cases through out year

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Graph 2: Total leucocyte count



Graph 3: Platelet count

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