International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

Chikungunyan

Rutuja Manohar Ghone, Prof. Manisha raut
shree Mahavir Institute Of Pharmacy Varvandi Tal. & Dist. Nashik 422004
shree Mahavir Institute Of Pharmacy Varvandi Tal. & Dist. Nashik 422004

Submitted: 15-08-2023 Accepted: 25-08-2023

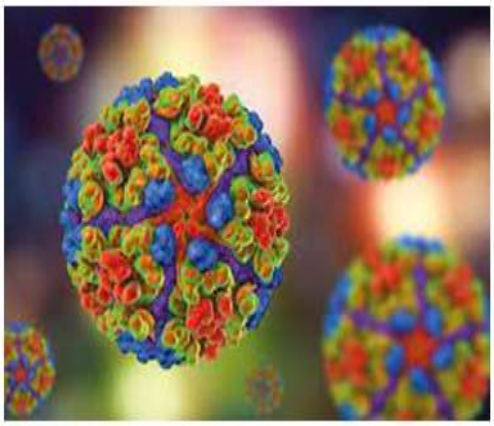
ABSTRACT :Chikungunya is a fairly rare form of viral fever caused by an alphavirus that's spread by mosquito mouthfuls from the Aedes aegypti mosquito. The symptoms of Chikungunya(also called as Chicken Guinea) include fever which can reach 39 °C,(102.2 °F) a petechial or maculopapular rash generally involving the branches and box, and arthralgia or arthritis affecting multiple joints which can be enervating. There can also be headache, conjunctival infection and slight photophobia. In the present epidemic in the state of Andhra Pradesh in India, high fever and crippling joint pain is the current complaint. Fevergenerally lasts for two days and suddenly comes down, still common pain, violent headache, wakefulness and an extreme degree of exhaustion lasts for a variable period, generally for about 5 to 7 days. The symptoms of Chikungunya include fever which can reach 39 °C,(102.2 °F) a petechial or maculopapular rash generally involving the branches and box, and arthralgia or arthritis affecting multiple joints which can be enervating. The symptoms could also include headache, conjunctival injection, and slight photophobia. High complications and common pain are set up in the current epidemic in the countries of Andhra Pradesh and Tamil Nadu, India. The fever generally lasts for two days and also comes down suddenly. still, other symptoms, videlicet common pain, violent headache, wakefulness and an extreme degree of exhaustion last for a variableperiod; generallyfor about 5 to 7 days. Cases have complained of joint pains for much longer time ages depending on their age. youngish cases recover within 5 to 15 days; middle- agers recover in 1 to2.5 months.
Recovery is longer for the senior. The inflexibility of the complaint as well as its duration is less in youngish cases and pregnant women. No untoward goods of gestation are noticed following the infection.

I. INTRODUCTION

Chikungunya contagion, also known as perambulatorcreek contagion, is transmitted by Aedes aegypti mosquito mouthfuls. the contagion belongs to the family- togoviridae, and the rubric is nascence contagion. till date there has been no reported direct person- to- person spread. the mosquitoes that beget infection due to the chikungunya contagion in Africa and Asia are the same mosquitoes that beget unheroicfeverand dengue fever in numerouscorridor of the world. Hence numerous corridor of the world could be affected by the chikungunya contagion. inheritable analysis of the chikungunya contagions reveal that there are two distinct types of the contagion- bonecontains all isolates from western Africa and the alternate comprising all southern and east african strains, as well as isolates from Asia. Chikungunya fever is a viral complaint transmitted to humans by the bite of infected mosquitoes. Chikungunya contagion(CHIKV) is a member of the rubric Alphavirus, in the family Togaviridae. CHIKV was first insulated from the blood of a febrile case in Tanzania in 1953, and has ago been linked constantly in west, central and southern Africa and numerous areas of Asia, and has been cited as the cause of multitudinous mortal pandemics in those areas since that time. The contagion circulates throughout important of Africa, with transmission allowed to do substantially between mosquitoes and monkeys must feed at least formerly upon mammalian blood before their eggs can develop duly. The males may have beaks, or probosces, but can not pierce, and they feed upon fruit and factory authorities. The womanish produces the characteristic whining sound by wobbling thin horny membranes on the abdomen. The eggs are laid independently or fused together to form rafts, generally in stagnant water in ponds, pools, open holders, and other submarine territories — the particular type of niche depending on the species. The submarine naiads, or wrigglers, pass through four larval stages, feeding on bitsy

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

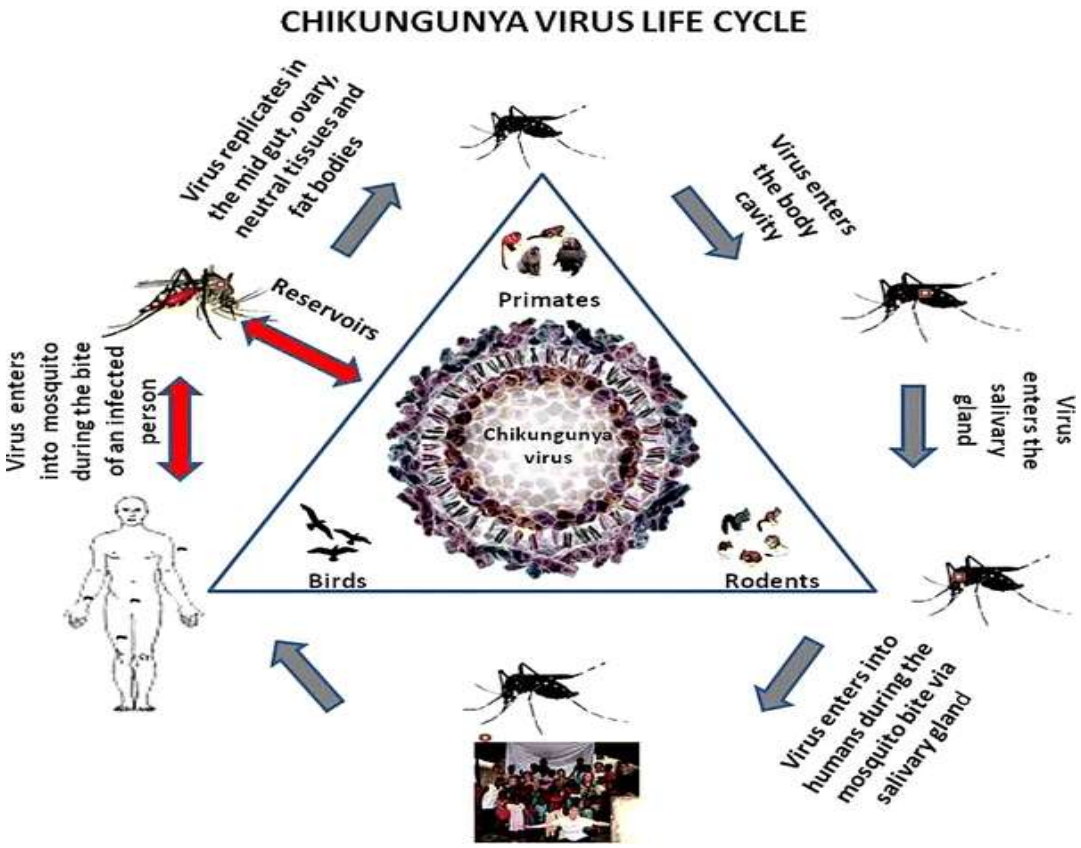
beast and factory life. Except in the rubric Anopheles, the wriggler has an air tube near the end of the tummy and makes frequent passages to the face to use it as a supplement to the gills. The nymph, or turner, shaped like a question mark, takes no food but shells frequently to breathe through air tubes on its abdomen. One system of mosquito control is the spreading of unctuous substances on infested water, which prevents access to air and suffocates the nymphs. In summer the life cycle may take only two weeks, performing in several generations a time in some species. During the blood refections the ladies may either acquire or transmit colorful complaint organisms. numerous species of Anopheles mosquitoes, recognizable by their listed resting position, carry the protozoan spongers that beget malaria The ladies of utmost species have piercing and stinking mouth corridor and supposedly they no vaccine or specific antiviral treatment for chikungunya fever is available. Treatment is characteristic-- rest, fluids, and ibuprofen, naproxen, acetaminophen, or paracetamol may relieve symptoms of fever and aching. aspirin should be avoided infected persons should be defended from farther mosquito exposure(staying indoors and/ or under a mosquito net during the first many days of illness) so that they cannot contribute to the transmission cycle. Chikungunya be first described in Tanzania, Africa girdled by 1952. The first outbreak in India be in 1963 girdled by Calcutta.(4) An outbreak of chikungunya was also discovered contained by Port Klang in Malaysia girdled by 1999 affecting 27 people. The most important means of forestallment are those that cover against any contact near the complaint- carrying mosquitos. These include using nonentity repellent containing NNDB, DEET or permethrin, wearing long sleeves and trousers(pants), and securing defenses on window and doors. It's also important to neglected stagnant water where on earth mosquitoes breed. Chikungunya contagion is indigenous to tropical Africa and Asia, where it's transmitted to humans by the bite of infected mosquitoes, generally of the rubric Aedes. Chikungunya contagion belongs to nascence- contagion under Toga virdae family. It's an" Arbovirus"(Ar- arthropod, bo- borne). CHIK fever pandemics are sustained by mortal- mosquito- mortal transmission. The word" chikungunya" is allowed to decide from description in original shoptalk of the contorted posture of cases tormented with the severe joint pain associated with this complaint. The main contagion budgets are monkeys, but other species can also be affected, including human



HISTORY

The nameisdeduced from the Makonde word meaning" that which bends up" in reference to the deigned posture developed as a result of the arthritic symptoms of the complaint. The complaint was first described by Marion RobinsonandW.H.R. Lumsdenin 1955, following an outbreak in 1952 on the Makonde Plateau, along the border between Mozambique and Tanganyika [the landmass part of ultramodern day Tanzania. According to the original 1955 report about the epidemiology of the complaint, the term chikungunya is deduced from the Makonde root verb kungunyala, meaning to dry up or come contorted. In concurrent exploration, Robinson smoothened the Makonde term more specifically as" that which bends over." posterior authors supposedly overlooked the references to the Makonde language and assumed that the term deduced from Swahili, the lingua franca of the region. The incorrect criterion of the term as a Swahili word has been repeated in multitudinous print sources. numerous other incorrect spellings and forms of the term are in common use including" Chicken guinea"," Chicken gunaya," and" Chickengunya Since its discovery in Tanganyika, Africa in 1952, chikungunya contagion outbreaks have passed sometimes in Africa, South Asia, and Southeast Asia, but recent outbreaks have spread the complaint over a wider range.

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781



SYMPTOMS

The incubation period of Chikungunya disease is from two to four days. Symptoms of the disease include a fever up to 40 °C (104 °F), a petechial or maculopapular rash of the trunk and occasionally the limbs, and arthralgia or arthritis affecting multiple joints.

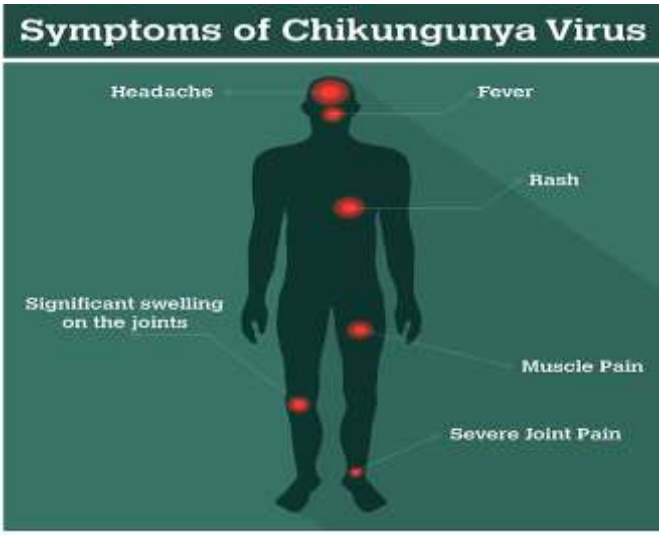
[4] Other nonspecific symptoms can include headache, conjunctival infection, and slight photophobia. Typically, the fever lasts for two days and then ends abruptly. However, other symptoms, namely joint pain, intense headache, insomnia and an extreme degree of prostration last for a variable period; usually for about 5 to 7 days.[4] Patients have complained of joint pains for much longer time periods depending on their age.

Fever (> 40 C, 104 F)
Headache
Joint pain (or arthralgia)
Arthritis affecting multiple joints that can be debilitating. Swelling of Joints
Rash (May occur rarely)
Sometimes there maybe infection of the conjunctiva of the eye and some photophobia.
Chills
Nausea Vomiting
Bleeding or hemorrhage (May occur rarely).
In one study over 12% of patients who contract Chikungunya virus infection develop chronic joint symptoms.

-- The symptoms of Chikungunya are very similar to those of dengue fever. It is characterized by high fever which can reach up to 104 degree F. There will be a sudden onset of flu-like symptoms, including severe headache, chills, rash, fatigue, nausea, vomiting, myalgia and joint pain. The joints of the extremities will become swollen and painful to touch.

Treatment- No specific treatment is available. Symptomatic treatment can be given to help the patient. Nimesulide+PCM Tab. are useful to relieve pain

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

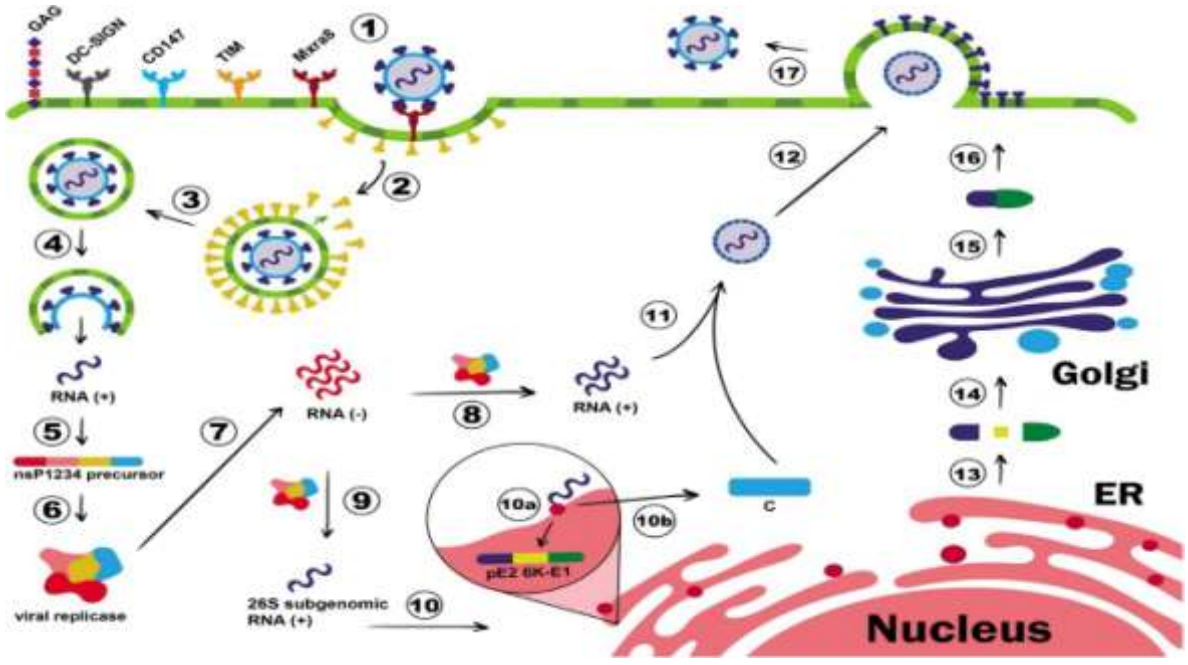


DIAGNOSIS

Common laboratory tests for chikungunya include RT- PCR, contagion insulation, and serological tests.

❖ Contagion insulation provides the most definitive opinion but takes 1 – 2 weeks for completion and must be carried out in Biosafety position 3 laboratories.(7) The fashion involves exposing specific cell lines to samples from whole blood and relating chikungunya contagion-specific responses.

❖ RT- PCR using nested manual dyads to amplify several Chikungunya-specific genes from whole blood. Results can be determined in 1 – 2 days. Serological opinion requires a larger quantum of blood than the other styles and uses an ELISA assay to measure Chikungunya-specific IgM situations. Results bear 2- 3 days and false cons can do with infection via other affiliated contagions similar asO'nyong'nyong contagion and Semliki Forest Virus



International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

PREVENTION

The most effective means of forestallment are protection against contact with the complaint-carrying mosquitoes and mosquito control. These include usingnonentity repellents with substances like DEET(- Diethyl- meta- toluamide; also known as N, N'- Diethyl- 3- methylbenzamide or NNDB), icaridin(also known as picaridin and KBR3023), PMD(p- menthane -3,8-diol, a substance deduced from the bomb eucalyptus tree), or IR3535. Wearing bite- evidence long sleeves and trousers(pants) also offers protection. In addition, garments can be treated with pyrethroids, a class of germicides that frequently has repellent parcels. wracked pyrethroids(for illustration in mosquito coils) are alsononentity repellents. Securing defenses on windows and doors will help to keep mosquitoes out of the house. In the case of the day active Aedes aegypti and Aedes albopictus, still, this will only have a limited effect, since numerous connections between the vector and the host do outdoors.

CHIKUNGUNYAN VIRUS INFECTION TREATMENT

There are no specific treatments for Chikungunya. There's no vaccine presently available. A Phase II vaccine trial, patronized by the US Government and published in the American Journal of Tropical Medicine and Hygiene in 2000, used a live, downgraded contagion, developing viral resistance in 98 of those tested after 28 days and 85 still showed resistance after one time. Chloroquine is gaining ground as a possible treatment for the symptoms associated with chikungunya and as an antiviral agent to combat the Chikungunya contagion. A University of Malaya study set up that for arthritis- suchlike symptoms that aren't relieved by aspirin andnon-steroidalanti-inflammatory medicines(NSAID), chloroquine phosphate(250 mg/ day) has given promising results.(23) exploration by an Italian scientist, Andrea Savarino, and his associates together with a French government press release in March 2006 have added more credence to the claim that chloroquine might be effective in treating chikungunya. Unpublished studies in cell culture and monkeys show no effect of chloroquine treatment on reduction of chikungunya complaint. The fact distance on Chikungunya advises against using aspirin, Ibuprofen, naproxen and oth pain and fever. Infected persons should limit farther exposure to mosquito mouthfuls, stay outdoors and under a mosquito net. Further," probative care with rest is preferred during the acute common symptoms. Movement and mild exercise tend to ameliorate stiffness and morning arthralgia, but heavy exercise may complicate rheumatic symptoms." Arthralgia remains worrisome indeed after 8 months. In Kerala, cases use honey and lime blend. Some people cite relief from consuming turmeric in low volumes.

PREVENTIVEMEASURES

The most effective means of prevention are those that protect against any contact with thedisease-carrying mosquitos. These include using insect repellents with substances likeDEET (also called NNDB or N,N'-Diethyl-3-methylbenzamide), icaridin (also known aspicaridinandKBR3023),PMD(p-menthane-3,8-diol,asubstancederivedfromthelemoneucalyptus tree), or IR3535. Wearing bite-proof long sleeves and trousers (pants) alsooffersprotection.Inaddition,garmentscanbetreatedwithpyrethroids,aclassofinsecticides that often has repellent properties. Vaporized pyrethroids (for example inmosquito coils) also have a certain spacial repellency. Securing screens on windows anddoors will help to keep mosquitoes out of the house. In the case of the day active Aedesaegypti and Aedes albopictus, however, this will only have a limited effect, since manycontactsbetweenthevectorandthehostoccuroutside.Thus,mosquitocontrolisespecially important.

CHIKUNGUNYAININDIA

Chikungunya is a relatively rare form of viral fever caused by an alphavirus that is spread by mosquito bites from the Aedes aegypti mosquito (Tiger mosquito). It is mainly in Africa and South East Asia, including India, the disease is new to Gulbarga Chikungunya is generally not fatal. However, in 2005-2006, 200 deaths have been associated with chikungunya on Réunion island and a widespread outbreak in Southern India (especially in Tamil Nadu, Karnataka, Kerala, and Andhra Pradesh). As of July 2006, Tamil Nadu reportedly had the largest number of cases, specifically centered around the southern districts of Madurai and Tirunelveli. The number of reported cases also registered a great increase in the districts of Salem, Chennai, and Chengalpattu. As of September 2006, after the flood and heavy rains in Rajasthan in August 2006, India, thousands of cases have been detected in Rajsamand, Bhilwara, Udaipur, and Chittorgarh districts. As of October 3, 2006 in the southern indian state of Kerala, 92 deaths are

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

attributed to Chikungunya and majority of the casualties were reported in the district of Alapuzha. This latest outbreak in Alappuzha is supposed to have transferred from Parassala, the southrenmost point of Kerala state where a recent outbreak were reported before the episodes of Alappuzha started.

DNA VACCINE

DNA vaccination is a technique for protecting an organism against disease by injecting it with genetically engineered DNA to produce an immunological response. Nucleic acid vaccines are still experimental, and have been applied to a number of viral, bacterial and parasitic models of disease, as well as to several tumor models. DNA vaccines have a number of advantages over conventional vaccines, including the ability to induce a wider range of immune response types. A recent study report that a novel consensus-based approach to vaccine design for Chikungunya virus, employing a DNA vaccine strategy. The vaccine cassette was designed based on CHIKV Capsid and Envelope specific consensus sequences with several modifications, including codon optimization, RNA optimization, the addition of a Kozak sequence, and a substituted immunoglobulin E leader sequence.

Analysis of cellular immune responses, including epitope mapping, demonstrates that these constructs induces both potent and broad cellular immunity in mice. In addition, antibody ELISAs demonstrate that these synthetic immunogens are capable of inducing high titer antibodies capable of recognizing native antigen. Taken together, these results support further study of the use of consensus CHIKV antigens in a potential vaccine cocktail European Centers for Disease Control Rep Recommendations:

If there is stagnant water near sites / offices /residential colonies notify Health / Sanitary authority for drainage / anti larva measures (spray of insecticides)

Drain stagnant water from potted plants, air coolers, old tins, old tyres etc.

Enforce stringent sanitary measures in and around our sites to reduce mosquito population by fogging and spraying pesticides.

To avoid mosquito bites:

Use mosquito repellant creams while going outdoors

Ensure mosquito nets on windows

Use electric insecticide vapourisers as indoor mosquito repellants

Use mosquito nets in highly endemic areas

Do not ignore fever (with or without chills) more than 38 o c / 104 o F. Consult your family physician

All local coordinators/ site in charge and doctors are requested to translate this information into local language and spread awareness.

In case you have a suspect case please provide us information about location, telephone number of the employees, his / her attending physician's / hospitals for follow up and better coordination in order to provide best healthcare.

II. SUMMARY

Chikungunya is generally spread through mouthfuls from Aedes aegypti mosquitoes, but recent exploration by the Pasteur Institute in Paris has suggested that chikungunya contagion strains in the 2005- 2006 Reunion Island outbreak incurred a mutation that eased transmission by Aedes albopictus(Tiger mosquito) Concurrent studies by arbovirologists at the University of Texas Medical Branch in Galveston Texas verified definitively that enhanced chikungunya contagion infection of Aedes albopictus was caused by a point mutation in one of the viral envelope genes(E1) Enhanced transmission of chikungunya contagion by Aedes albopictus could mean an increased threat for chikungunya outbreaks in other areas where the Asian barracuda mosquito is present. A recent epidemic in Italy was likely eternalized by Aedes albopictus In Africa, chikungunya is spread via a sylvatic cycle in which the contagion largely resides in other primates in between mortal outbreaks. Recovery from the complaint varies by age. youngish cases recover within 5 to 15 days; middle-aged cases recover in 1 to2.5 months. Recovery is longer for the senior. The inflexibility of the complaint as well as its duration is less in youngish cases and pregnant women. In pregnant women, no untoward goods are noticed after the infection. optical inflammation from Chikungunya may present as iridocyclitis, and have retinal lesions as well. Pedal edema(lump of legs) is observed in numerous cases, the cause of which remains obscure as it isn't related to any cardiovascular, renal or hepatic abnormalities. No vaccine or specific antiviral treatment for chikungunya fever is available. Treatment is characteristic-- rest, fluids, and ibuprofen, naproxen, acetaminophen, or paracetamol may relieve symptoms of fever and aching. Aspirin should be avoided Infected persons should be defended from farther mosquito exposure(staying

International Journal of Pharmaceutical Research and Applications
Volume 8, Issue 4 July-Aug 2023, pp: 2043-2050 www.ijprajournal.com ISSN: 2249-7781

indoors and/ or under a mosquito net during the first many days of illness) so that they can not contribute to the transmission cycle. Also the current finding is that the Chicken gunia is a complaint infected through a special Mosquito and the stylish palladium is to keep ourselves from its bite. This mosquito's bite only happens in day time only since we're careless about mosquito bite in day time, in order to help its bite we've to take way to help by keeping mosquitoes downfrom our surroundings. Use nonentity repellent containing an DEET or another EPA- registered active component on exposed skin. Always follow the directions on the package. Wear long sleeves and pants(immaculately treat clothes with permethrin or another repellent). Have secure defenses on windows and doors to keep mosquitoes out. Get rid of mosquito parentage spots by evacuating standing water from flower pots, pails and barrels. Change the water in pet dishes and replace the water in raspberry cataracts daily. Drill holes in tire swings so water drains out. Keep children's wading pools empty and on their sides when they are not being used. also, a person with chikungunya fever or dengue should limit their exposure to mosquito mouthfuls in order to avoid farther spreading the infection. The person should stay outdoors or under a mosquito net.

REFERENCES

[1]. [ab]ChhabraM,MittalV,BhattacharyaD,Rana U,LalS(2008)."Chikungunyafever:".Indian JMedMicrobiol26(1):5–12.PMID18227590.

[2]. [abc]"WHO - Laboratory Diagnosis of Chikungunya Fevers".http://www.searo.who.int/EN/Section10/Section2246_12902.htm.Retrievedon 2008-07-11.

[3]. *"Chikungunya-Factsheet".EuropeanCentreforDiseasePreventionandControl.2008-01-23.http://ecdc.europa.eu/en/Health_Topics/Chikungunya_Fever/facts.aspx. Retrieved on2008-03-25.

[4]. deLamballerieX,LeroyE,CharrelRN,TtsetsarkinK,HiggsS,GouldEA(2008)."Chikungunya virus adapts to tiger mosquito via evolutionary convergence: a signofthingstocome?".Virol.J.5:33.doi:10.1186/1743-422X-5-33.PMID18304328

[5]. Edelman, R; C.O. Tacket, S.S. Wasserman, S.A. Bodison, J.G. Perry, J.A.Mangiafico (01 June 2006). "Phase II Safety and Immunogenicity Study of LiveChikungunyaVrirusVaccineTSI-GSD-218"(PDF).AmericanJournalofTropicalMedicine and Hygiene 62 (6): 681–685.PMID 11304054.

[6]. http://www.ajtmh.orghttps://www.frontiersin.org/articles/10.3389/fmicb.2021.744164/full/cgi/reprint/62/6/681.

[7]. https://www.mosquitomagnet.com/media/wysiwyg/mm/cms/learning-center/mmarticles-chikungunya-symptoms-3A.png

[8]. https://media.springernature.com/full/springer-static/image/art%3A10.1007%2Fs40011-011-0012-y/MediaObjects/40011_2011_12_Fig3_HTML.gif?as=webp

[9]. https://www.google.com/imgres?imgurl=https%3A%2F%2Fmedia.springernature.com%2Ffull%2Fspringer-static%2Fimage%2Fart%253A10.1038%252Fnrrheum.2017.223%2FMediaObjects%2F41584_2018_Article_BFnrrheum2017223_Figa_HTML.jpg&tbnid=lGRbL2p_5rBChM&vet=10CCIQMyh3ahcKEwjQw8WW-PL_AhUAAAAAHQAAAAAQAw..i&imgrefurl=https%3A%2F%2Fwww.nature.com%2Farticles%2Fnrrheum.2017.223&docid=v6O99vjOO4bAHM&w=675&h=450&q=chinkengunya&ved=0CCIQMyh3ahcKEwjQw8WW-PL_AhUAAAAAHQAAAAAQAw

[10]. MorbidityandMortalityWeeklyReport,September29,2006/55(38);1040-1042

[11]. Powers AM, Logue CH (2007). "Changing patterns of chikungunya virus: re-emergenceofazoonoticarbovirus"(PDF).J. Gen.Virol.88(Pt9):2363–77.doi:10.1099/vir.0.82858-0.PMID 17698645.http://www.sgm.ac.uk/jgvdirect/82858/82858ft.pdf.Retrievedon2008-03-19.

[12]. Sourisseau M, Schilte C, Casartelli N, et al (June 2007). "Characterization ofreemergingchikungunyavirus".PLoSPathog.3(6):e89.doi:10.1371/journal.ppat.0030089.PMID 17604450. PMC: 1904475.http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=17604450.Retrievedon2008-07-14.

[13]. Simon F, Parola P, Grandadam M, Fourcade S, Oliver M, Brouqui P, Hance P,Kraemer P, Ali Mohamed A, de Lamballerie X, Charrel R, Tolou H (2007)."Chikungunyainfection:anemerging rheumatismamongtravelersreturnedfromIndianOceanislands.Reportof47cases".Medicine(Baltimore)86(3):123–37.doi:10.1097/MD/0b013e31806010a5.PMID17505252.

[14]. TaubitzW,CramerJP,KapaunA,PfefferM,DrostenC,DoblerG,BurchardGD,Löscher T (2007). "Chikungunya fever in travelers: clinical presentation andcourse".Clin.Infect.Dis.45(1):e1–4.doi:10.1086/518701.PMID17554689.