

HOMOEOPATHIC PERSPECTIVES IN CHIKUNGUNYA

FACT SHEET



CENTRAL COUNCIL FOR RESEARCH IN HOMOEOPATHY

(An autonomous body of the Ministry of AYUSH, Government of India),
Jawahar Lal Nehru Bhartiya Chikitsa Avum Homoeopathic Anusandhan Bhavan,
61-65, Institutional Area, Janakpuri, New Delhi – 110058.

CONTRIBUTORS

Facilitation & Guidance

- **Dr. Raj K. Manchanda**
Director General, Central Council for Research in Homoeopathy, New Delhi
- **Dr. Anil Khurana**
Deputy Director General, Central Council for Research in Homoeopathy, New Delhi

Content planning & appraisal

- **Dr. Debadatta Nayak**
Research Officer (Homoeopathy)/Scientist-2, CCRH, Hqrs, New Delhi

Content drafting

- **Dr. Ravinder Singh**
Senior Research Fellow (Homoeopathy), CCRH, Hqrs, New Delhi
- **Dr. Rupali Dixit Bhalerao**
Research Associate (Homoeopathy), CCRH, Hqrs, New Delhi

CONTENTS

• INTRODUCTION	1
• CHIKUNGUNYA EPIDEMICS	1
• CLINICAL DESCRIPTION	3
• CASE DEFINITION FOR DIAGNOSIS	5
• INVESTIGATION	5
• WHERE DOES MOSQUITO LIVE AND BREED	6
• PREVENTIVE MEASURES	6
• GENERAL MANAGEMENT	8
• HOMOEOPATHIC PROPHYLACTIC FOR CHIKUNGUNYA FEVER	9
• HOMOEOPATHY IN POST CHIKUNGUNYA ARTHRALGIA	10
• SUGGESTIVE HOMOEOPATHIC MEDICINES IN CHIKUNGUNYA FEVER	11
• HOMOEOPATHIC MEDICINES FOR POST CHIKUNGUNYA ARTHRALGIA	13
• REFERENCES	15

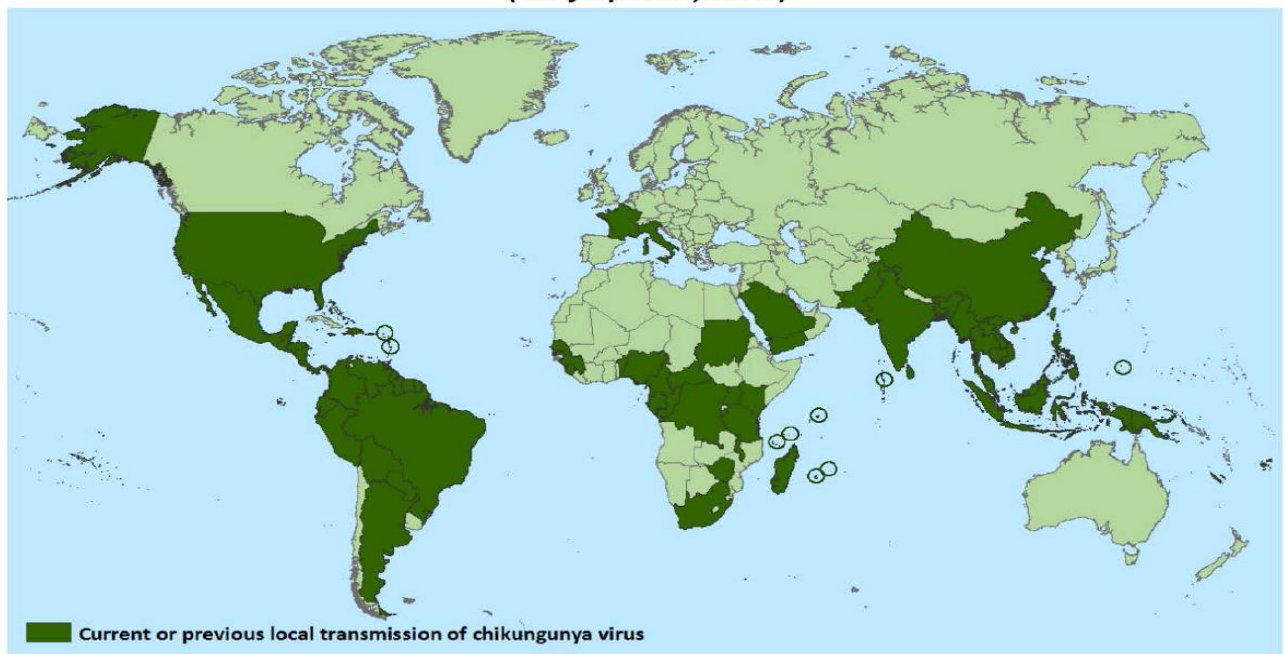
HOMOEOPATHY IN CHIKUNGUNYA FEVER

INTRODUCTION

Chikungunya was first detected in 1952 in Africa following an outbreak on the Makonde Plateau. This is a border area between Mozambique and Tanzania. The virus was isolated from the serum of a febrile patient from this area. The name chikungunya is derived from the Makonde word meaning "*that which bends up*" in reference to the stooped posture developed as a result of the arthritic symptoms of the disease. In Swahili this means "*the illness of the bended walker*".¹

Since its discovery in Africa, in 1952, chikungunya virus outbreaks have occurred occasionally, but recent outbreaks have spread the disease to other parts of the world. Numerous chikungunya re-emergences have been documented in Africa, Asia (India), and Europe, with irregular intervals of 2–20 years between outbreaks. Currently, chikungunya fever has been identified in nearly 40 countries.¹

**Countries and territories where chikungunya cases have been reported*
(as of April 22, 2016)**



(Courtesy: Center for Disease control and Prevention. Available at <https://www.cdc.gov/chikungunya/geo/>)

CHIKUNGUNYA EPIDEMICS

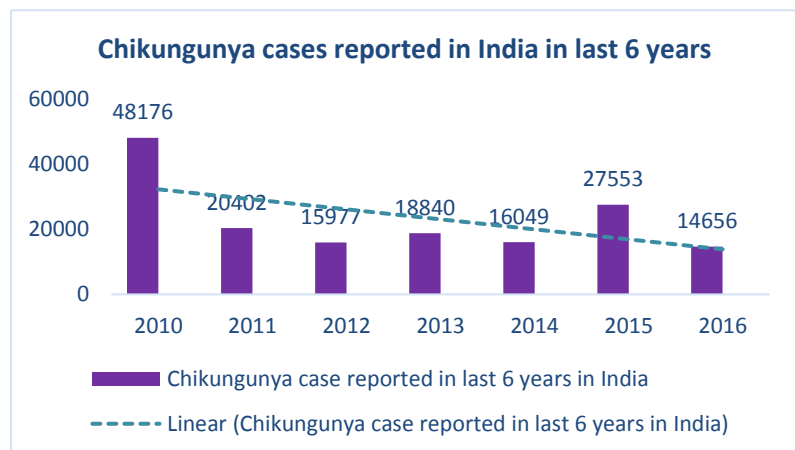
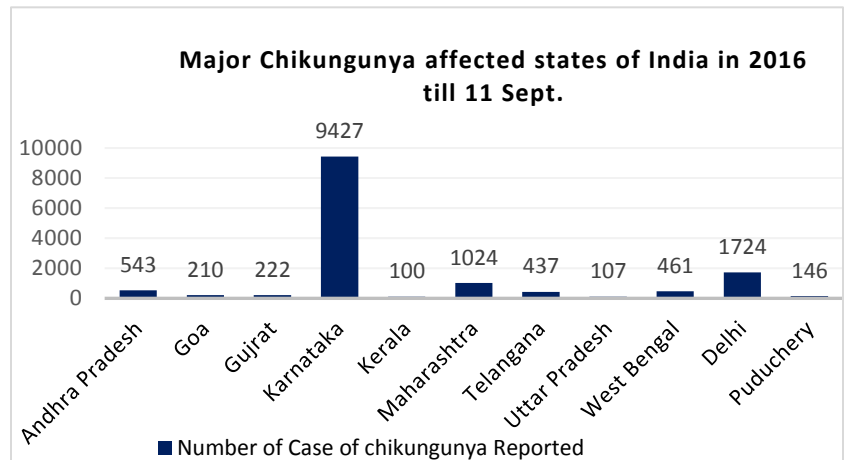
Chikungunya was first described by Robinson and Lumsden in 1953. Epidemics were subsequently noted in the Philippines (1954, 1956 and 1968), Thailand, Cambodia, Viet Nam, India, Myanmar and Sri Lanka. In India, major epidemics of chikungunya were reported in 1963 in Kolkata, in 1965 in Pondicherry (formerly Pondicherry), Tamil Nadu, Andhra Pradesh, Madhya Pradesh and Maharashtra and again in

1973 in Maharashtra. Thereafter, sporadic cases continued to be recorded in Maharashtra during 1983 and 2000. Since 2003, there has been a resurgence of chikungunya outbreaks in the islands of the Pacific Ocean, including Madagascar, the Comoros, Mauritius and Reunion Island. In January 2006, there was a very large epidemic in Reunion Island followed quickly by the one in India. Almost 1.3 million suspected chikungunya fever cases were reported in India in 2006. Resurgence of chikungunya has been attributed to various factors including globalization, increase in the mosquito population, loss of herd immunity and the mutation A226V in the E1 gene causing a significant increase in CHIKV infectivity for *Ae. Albopictus*¹.

Chikungunya in India

The first recorded chikungunya outbreak was in Kolkata in 1963. This was followed by epidemics in Tamil Nadu, Andhra Pradesh and Maharashtra in 1964–65 and in Barsi in 1973. CHIKV then seems to have disappeared from India. The virus re-emerged in 2006 after a gap of 32 years and caused an explosive outbreak affecting 13 states affecting about 1.3 million people. The state first affected were Andhra Pradesh, Karnataka, Maharashtra, Madhya Pradesh, Tamil Nadu, Gujarat and Kerala. All ages and both sexes were affected. The virus isolates belonged to the African genotype different from the viruses circulating in 1963–1973, which belonged to the Asian genotype. The A226V shift in the E1 protein that was detected with progression of the epidemic in Reunion Island was absent in all of the Indian isolates. The A226V mutation was found to occur only in the 2007 isolate from India. In 2008 almost 100 000 people in different

villages of Kasargodu district, Kerala were affected by chikungunya. This was followed by a large outbreak in Tirunelveli district, Tamil Nadu in 2009–2010². The CHIKV isolate was found belong to the Eastern Central Southern African genotype (E1:226A). During 2009–2010, cases were also reported from Maharashtra. In the subsequent years, CHIKV spread to other states: Goa, Orissa, Rajasthan, West Bengal, Andaman & Nicobar Islands and Puducherry. The year 2011 was exceptional in that cases were reported from all states except Punjab, Dadra and Nagar Haveli and Lakshadweep. Lakshadweep had a chikungunya outbreak only in 2007³. Major affected states in 2016 and State wise Chikungunya cases in last 6 years in India are as shown above figures⁴.

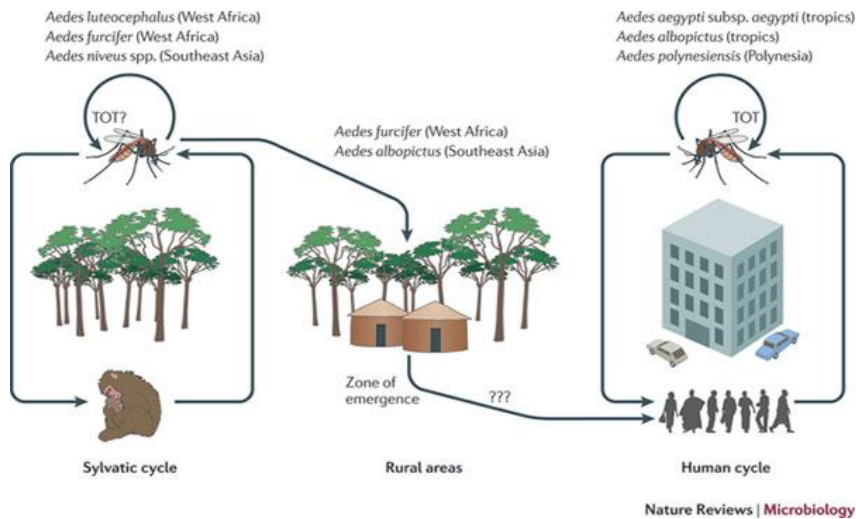


CLINICAL DESCRIPTION

Source of infection

Chikungunya fever is caused by virus of same name (CHIK virus in short) which is an RNA virus that belongs to the *Alphavirus* genus of the *Togaviridae*, the family that comprises a number of viruses that are mostly transmitted by arthropods.⁵

Mode of transmission¹



(Courtesy: Fever from the forest: prospects for the continued emergence of sylvatic dengue virus and its impact on public health; Nikos Vasilakis, Jane Cardoso, Kathryn A. Hanley, Edward C. Holmes & Scott C. Weaver; *Nature Reviews Microbiology* 9, 532-541 (July 2011))

- *Aedes aegypti* is the common vector responsible for transmission in urban areas
- *Aedes albopictus* has been implicated in rural areas. Recent studies indicate that the virus has mutated enabling it to be transmitted by *Aedes albopictus*.
- The *Aedes* mosquito breeds in domestic settings such as flower vases, water-storage containers, air coolers, etc. and peri-domestic areas such as construction sites, coconut shells, discarded household junk items (tyres, plastic and metal cans, etc.). The adult female mosquito rests in cool and shady areas in domestic and peri-domestic settings and bites during day time.

Pathogenesis⁵

- This virus affects host cell by inhibiting the optimal levels of cellular transcription and translation.
- The virus replicates in cells of lymphoid and myeloid origin. Monocytes are early targets of CHIKV infection, depending on the viral load. Macrophages of liver, spleen, and synovial fluid have been reported to be infected by CHIKV among infected human.
- The cholesterol level of host cell membrane is an important factor affecting viral entry into the host cell. Cholesterol depletion was found to reduce the CHIKV infectivity by 65%. CHIKV induces apoptosis both by intrinsic and extrinsic pathway.
- The ability to induce apoptosis depends on viral replication. CHIKV has been reported to infect many different types of cell, like fibroblasts, epithelial and endothelial cell, both in vitro and in vivo.
- Focal necrosis and inflammation followed by fibrosis and dystrophic calcification is observed in skeletal muscles.

Clinical Presentation and Course of Illness

Chikungunya fever is characterized by abrupt onset of signs and symptoms that may include:¹

➤ **Incubation period:**

CHIK virus causes a febrile illness in the majority of people with an incubation period of **2-12** days from the mosquito bite. Viremia persists for upto 5 days from the clinical onset.

➤ **Symptoms¹ :**

- **Fever (92%):** The fever varies from low grade to high grade, lasting for 24 to 48 hours. Fever rises abruptly in some, reaching 39-40 degree Celsius, with shaking chills and rigor and usually subsides with use of antipyretics. No diurnal variation was observed for the fever. In the recent outbreaks many patients presented with arthralgia without fever
- **Arthralgia (87%):** The joint pain tends to be worse in the morning, Least movement is intolerable to patient , and swelling of joints, hot fomentation may give some relief, patients prefers rest positions. The joint pains may remains for about 2-3 months even after fever has subsided in 2-3% of patients. Ankles, wrists and small joints of the hand were the worst affected. Larger joints like knee and shoulder and spine were also involved. There is a tendency for early and more significant involvement of joints with some trauma or degeneration
- **Backache (67%):** there is soreness in lumbosacral region, patient prefers lying on sides due to soreness of the back. The classical bending phenomenon was probably due to the lower limb and back involvement which forced the patient to stoop down and bend forward.
- **Headache (62%):** It is bursting in nature, and very severe

The pain may remit for 2-3 days and then reappear in a saddle back pattern. Migratory polyarthritis with effusions may be seen in around 70%, but resolves in the majority.

➤ **Other Symptoms⁵**

- **Transient maculopapular rash** is seen in up to 50 % patients. The maculopapular eruption persisted for more than 2 days in approx. 10% cases.
- **Intertriginous aphthous**-like ulcers and vesiculobullous eruptions were noticed in some. A few persons had angiomatous lesions and fewer had purpuras. Stomatitis was observed in 25% and oral ulcers in 15% of patients. Nasal blotchy erythema followed by photosensitive hyperpigmentation (20%) was observed more commonly in the recent epidemic.
- **Exfoliative dermatitis** affecting limbs face was seen in around 5% cases.
- **Epidermolysis bullosa** was an observation in children. Most skin lesions recovered completely except in cases where the photosensitive hyperpigmentation persisted. Photophobia and retro-orbital pain have been observed.
- **Neonates may have vomiting and/or diarrhoea** and **meningo-encephalitis**. Neurologic manifestations such as encephalitis, febrile seizures, meningeal syndrome and acute encephalopathy were reported.

- **Neuroretinitis and uveitis** in one or both eyes have also been observed. The main ocular manifestation associated with the recent epidemic outbreak of chikungunya virus infection in South India included granulomatous and non-granulomatous anterior uveitis, optic neuritis, retrobulbar neuritis, and dendritic lesions.

CASE DEFINITION FOR DIAGNOSIS

Defining a Case of Chikungunya for surveillance: if a patient fulfills any one or more of these following criteria: ¹

1. **Possible case:** a patient meeting clinical criteria i.e., acute onset of fever $>38.5^{\circ}\text{C}$ and severe arthralgia/arthritis not explained by other medical conditions.
2. **Probable case:** a patient meeting both the clinical and epidemiological criteria (residing or having visited epidemic areas, having reported transmission within 15 days prior to the onset of symptoms)
3. **Confirmed case:** a patient meeting the laboratory criteria, irrespective of the clinical presentation i.e., at least one of the following tests in the acute phase:
 - Virus isolation
 - Presence of viral RNA by RT-PCR
 - Presence of virus specific IgM antibodies in single serum sample collected in acute or convalescent stage.
 - Four-fold rising of IgG titres in samples collected at least three weeks apart

INVESTIGATION ¹

The confirmation of Chikungunya fever is through any of the followings:

- Isolation of virus
- RT-PCR (Reverse Transcriptase polymerase chain reaction)
- Detection of IgM antibody
- Demonstration of rising titre of IgG antibody.

Other Haematological findings:

- Leukopenia with lymphocyte predominance is the usual observation. Thrombocytopenia is rare.
- Erythrocyte sedimentation rate is usually elevated. C-Reactive Protein is increased during the acute phase and may remain elevated for a few weeks. A small proportion of patients have tested positive for rheumatoid factor during and after clinical episode.

VACCINE FOR CHIKUNGUNYA ⁶:

- Because humans appear to be the only amplification hosts during urban transmission, the most effective means of controlling the spread of the infection is by vaccination.
- Currently, there is no licensed vaccine available.
- Several technologies have been used to develop CHIK vaccines, including inactivated viral vaccines, live-attenuated viruses, alphavirus chimeras, recombinant viral vaccines, consensus-based DNA vaccines, recombinant subunit vaccines and more recently, a virus-like particle (VLP) vaccine.

WHERE DOES MOSQUITO LIVE AND BREED?

Ae. aegypti breeds almost entirely in domestic man-made water receptacles found in and around households, construction sites and factories; natural larval habitats are tree holes, leaf axils and coconut shells. In hot and dry regions, overhead tanks and ground water storage tanks become primary habitats. Unused tyres, flower pots and desert coolers are among the most common domestic breeding sites of *Ae. aegypti* (Fig. 3).

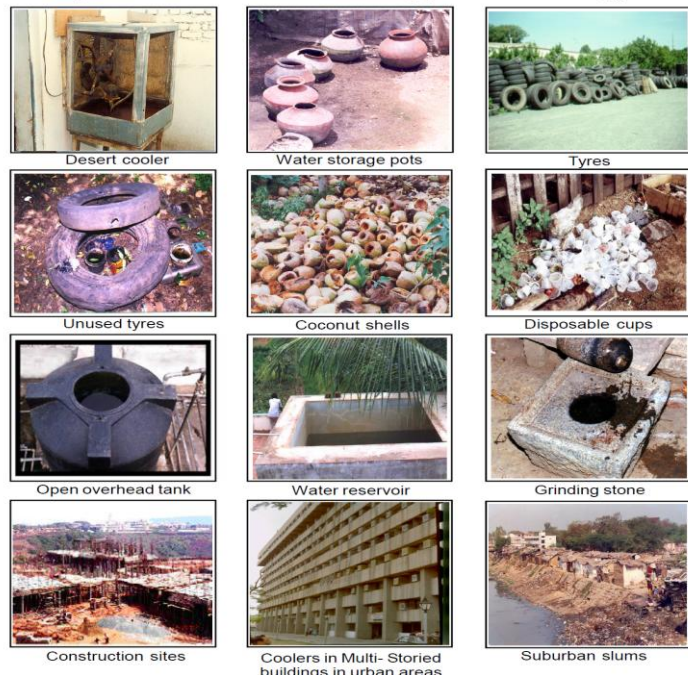


Figure 3 few common and favored breeding places of *Ae. Aegypti*.

PREVENTIVE MEASURES ⁸

❖ Protect your family and community. Eliminate standing water in and around your home.

- Drain and dump standing water found inside and outside your home. Buckets, bowls, animal dishes, flower pots and vases, tires, and cans make great places for mosquitoes to lay eggs.
- Weekly, empty and wash out containers with a brush or sponge to remove mosquito eggs.
- Throw away, turn over, or store under a roof any containers that could collect water.



❖ Don't allow mosquitoes to lay eggs. Cover water storage containers.

- Always place a tight lid on containers used for water storage (buckets, cisterns, rain barrels) so that mosquitoes cannot get inside to lay eggs.
- Use mesh with holes smaller than an adult mosquito to cover containers without lids



❖ **If you have standing water in fountains or ponds not easily drained:**

- At least weekly, empty ornamental fountains, non-chlorinated swimming pools and bird baths.
- If feasible install a pump to circulate water.



❖ **If you have a septic tank, follow these steps:**

- Repair cracks or gaps.
- Cover open vent or plumbing pipes with wire mesh; use mesh with holes smaller than an adult mosquito.



Protect Yourself and Family from Mosquito Bites⁸

❖ **Keep the Inside of Your Home Mosquito-free**

- Use screens on doors and windows and don't leave doors propped open for mosquitoes to fly inside.
- Don't allow mosquitoes to fly inside your home. If you have an air-conditioner, use it instead of opening windows and doors.
- Weekly, look for and dump out any standing water where mosquitoes lay eggs.
- Kill mosquitoes inside your home. If using insecticide, always follow label instructions.



❖ **Prevent Mosquito Bites**

- When outside, use insecticides such as permethrin (pesticide and repellent) and allethrin (candles and lanterns).
- When weather permits, wear long sleeve shirts, long pants, socks and closed shoes to avoid mosquito bites.
- Use repellents containing DEET (N, N-diethyl-m-toluamide), picaridin, IR3585, oil of lemon eucalyptus, or para-menthane-diol. These products provide long-lasting bite protection. Repellents should always be used according to label instructions.

GENERAL MANAGEMENT⁹

1. Personal prophylactic measures

- Use mosquito repellent creams, liquids, coils, mats, etc.
- Wear full sleeve shirts and full pants with socks
- Use bed nets for sleeping infants and young children to prevent mosquito bite

2. Environmental management & source reduction methods

- Identify & eliminate mosquito breeding sources
- Prevent collection of waters on roof tops, porticos and sunshades
- Properly cover stored water
- Frequently change water in water pots, flower vases, water coolers, etc.
- Waste must be disposed properly and should not be allowed to collect.

3. Biological & Chemical control for control of mosquitoes breeding

- Use larvivorous fishes in ornamental tanks, fountains, etc.
- Use biocides or chemical larvicides for control of mosquitoes breeding
- Aerosol space spray.

4. Health education

- Impart knowledge to common people regarding measures to reduce vector breeding and safeguards for preventing mosquito bites.

High Risk Group: In these group morbidity is severe and mortality may occur.

- **Newborns / Children** are at maximum risk for severe manifestations of the disease. Some of the clinical features in children include neurological manifestations, i.e. seizures, altered levels of consciousness, blindness due to retrobulbar neuritis and acute flaccid paralysis CHIKV infection in neonates is very rare, one case presented with severe thrombocytopenia and features of multisystem involvement. Vertical transmission of CHIKV from mother to child has been documented ¹.
- **Older adults (≥65 years)¹**
- People with medical conditions such as **High blood pressure, Diabetes Mellitus, Kidney-Disorder or Heart disease¹**.
- **People with Rhesus-positive** are found to be more susceptible than their Rhesus- negative counterparts⁵.

HOMOEOPATHY FOR PROPHYLAXIS IN CHIKUNGUNYA FEVER¹⁰

During the period August-September 2007, there was outbreak of chikungunya in Kerala. Quilon and Alapuzha district were one of the affected with infection. Council had conducted a cluster -randomised, double-blind, placebo -controlled trial to assess the efficacy of homoeopathy medicine 'Bryonia alba' as preventive in chikungunya in selected panchayats i.e. Yeroor, Alapattu and Aratupuzha.

A total of 205 patients, having fever and severe arthralgia, etc., from the area where laboratory confirmed cases were detected during the epidemic were studied and the totality of symptoms of the prevailing epidemic was constructed. *Genus epidemicus* i.e. *Bryonia alba* was selected after common consensus of group of homoeopathic experts, against the epidemic of chikungunya.

After selection of preventive medicine, it was given to Screened participants who were declared healthy (absence of fever and arthralgia), aged between 1 and 98 years and of both genders were enrolled after obtaining written informed consent. Voluntary health workers were trained for screening and follow up participant along with distribution of medicines. Estimated sample was divided into 167 clusters and each cluster was kept under observation of one VHW. The clusters were randomly administered *Bryonia alba*/placebo. Out of these, 84 clusters received *Bryonia alba* and 83 clusters received placebo. Computer -generated random numbers were used to randomised the clusters and was sealed until data analysis is completed.

Bryonia alba was distributed in 30C potency. The participants were instructed to take three doses (3 globules of size No. 30) per day for 3 days orally in empty stomach. Similarly, placebo was administered to control group but the globules were impregnated with unsuccused non-medicated alcohol. A total of 38,229 healthy population was included in study, out of which 19750 received medicine and rest received placebo as per randomization. The participants who participated in study were allowed to repeat *Bryonia alba* 30 C/placebo after 15 days in the same dosage schedule provided the prevalence of the epidemic continued in the area. Follow-up visits were made by the VHW's on 8th, 15th, 22nd, 29th and 35th day. Any participant who suffered from fever and arthralgia (characteristic symptoms of chikungunya) during the follow-up period was considered as a case of chikungunya.

The main outcome measure was to assess number of infected persons as per guidelines of European Centre for Disease Prevention and Control for probable case of chikungunya at the end of 35 days of follow-up. The result reflects a 19.76% relative risk reduction by *Bryonia alba* 30C compared to placebo.

HOMEOPATHY IN POST-CHIKUNGUNYA CHRONIC ARTHRITIS¹¹

A prospective observational study was conducted at Delhi Government Homeopathic Dispensary Aali Village (DGHDAV), New Delhi, India, for a period of 6 months, from 1st October 2010 to 31st March 2011. Patients having chikungunya fever (CF) symptoms as per World Health Organisations definition were included in the study. Another group of Post-Chikungunya chronic arthritis (PCCA) studied were patients having history of fever with Chikungunya like features followed by persistent joint pains with or without swelling and rheumatoid factor negative after laboratory examination. 126 patients (75 of CF and 51 of PCCA) agreed and were registered for the study.

A single suitable homeopathic remedy was prescribed by individualizing each patient after case taking. The patients were asked to discontinue the use of analgesics and anti-pyretics during the treatment period. For CF, during the acute stage centesimal potencies were used. Each case was prescribed four pills of indicated remedy in 30CH potency every 3 h initially. Frequency of repetition was decreased as the patient improved. For PCCA, all the remedies were prescribed in 50 Millesimal potency scale starting from LM1 and rising to LM2, LM3 etc. Initially three times daily, on improvement reduced to once or twice daily. All the cases were followed up between 1 and 4 days depending on severity of symptoms. Visual Analogue Scale (VAS) was used to assess the response of administered remedy to overall subjective sensations of pain, stiffness and fatigue during follow ups.

Complete recovery was seen in 84.5% CF patients, in an average time of 6.8 days. 90% cases of PCCA recovered completely in a average time of 32.5 days. Homoeopathic medicines found effective for CF were Bryonia alba followed by Rhus toxicodendron, Rhus toxicodendron followed by Bryonia alba, Lycopodium and Arsenicum iodatum, Ipecacuanha and Pulsatilla, Belladonna, Gelsemium and Arsenicum album.

Total 20 homeopathic remedies were prescribed in PCCA. The most prescribed remedies were lycopodium clavatum, Arnica montana, Rhus toxicodendron followed by Bryonia alba, Bryonia alba followed by Rhus toxicodendron, Ignatia amara, Calcarea carbonica, Calcarea phosphorica, Lachesis muta, Natrum muriaticum, Phytolacca decandra and Radium bromide. The findings in the study seem to show a positive response to individualized homeopathic therapy in CF with complete recovery in 85% of patients. None of the remaining cases complained of residual pain/weakness at the conclusion study unlike the WHO findings. Positive response to individualized homeopathic therapy was also seen in PCCA with complete recovery in 90% cases. The patients were able to stop analgesics/antipyretics and change to homeopathic therapy without difficulty.

SUGGESTIVE INDICATIONS OF HOMOEOPATHIC MEDICINES FOR CHIKUNGUNYA FEVER

Some drugs which are frequently prescribed during the outbreak of Chikungunya fever by our homoeopathic doctors and these following remedies have shown their effectiveness in treating Chikungunya Fever cases from time to time. The remedies are as follows: ***Bryonia alba, Rhus toxicodendron, Lycopodium clavatum, Ipecac, Pulsatilla, Gelsemium sempervirens, Arsenic iodatum, Arsenic album, Belladonna, Arnica montana, Ignatia amara, Calcarea carbonica, Calcarea phosphorica, Lachesis muta, Natrum muriaticum, Phytolacca decandra,***

- 1. Eupatorium perfoliatum:** Intense aching limbs and back, as if bones were broken. Dare not move for pain. Aching in all bones, with soreness of flesh. Bones feel broken, dislocated, as if would break. Bursting Headache. Shivering; chills in back. Chill begin 7 to 9 a.m. Eyeballs sore. There may be vomiting of bile¹². Bone pains the more general and severe, the better adapted for this drug. Fever with bone pains, before and during chill. Instantiable thirst before and during chill and fever. Sweat scanty and pains make the patient restless¹³.
- 2. Bryonia alba:** White tongue; thirst for much cold fluid. Pains; from every movement, every noise, attacked with dry heat. Wants to lie quite still, and be let alone. Headaches and pain all better for pressure, and worse for movement¹². The anxiety, dreams and delirium of Bryonia, are of business; in delirium be "wants to go home. Irritable. Excessive dryness of Mucous membrane of entire body; tongue dry. Relief from absolute rest either physical or mental complaints. Stitching tearing pains worse at night and motion, amelioration from pressure and absolute rest¹³.
- 3. Arsenic album:** Always freezing, hovers round fire, cannot get enough clothes to keep warm. Ars.is chilly; with burnings, relieved by heat. Restless, anxious, morbidly fastidious. During rigors and chills feels as if blood flowing through vessels were ice-cold water. With fever; intensely hot; feeling of boiling water going through blood vessels¹².
- 4. Nux vomica:** Coldness of whole body, not better by warmth of fire, or by any amount of covering. Chills, back, limbs, or whole body, not relieved by warmth. Shivering after drinking, from slightest contact with open air, from slightest motion. Chill as soon as he moves the bed clothes. Chill alternating with heat. Heat with internal chilliness¹². Nux vomica is oversensitive, irritable, touchy, and sensitive to least draught. Great heat, whole body burning hot, face red and hot, yet patient cannot move or uncover without being chilly. Repugnance to cold air ; chilly on least movement; must be covered in every stage of fever-chill, heat or sweat. Pains are tingling, sticking, hard aching worse from motion and contact¹³.
- 5. Rhus toxicodendron:** Stiff, lame and bruised on first moving, passes off with motion, till he becomes weak and must rest; then restlessness and uneasiness drive him to move again. The worst sufferings when at rest and kept without motion.. Illness from cold, damp weather; from cold damp when perspiring. Anxiety, fear; worse at night. Restlessness, intense fever, thirst, great prostration. Weeps without knowing why. Severe aching in bones¹².

6. **Ipecacuanha** : Intermittent fever; in the beginning of regular cases; fever with nausea or from gastric disturbances. Oversensitive to heat and cold. Pain in the bones as if all torn to pieces. Thirstlessness with clean tongue¹³. Prostration more marked during vomiting.
7. **Belladonna** : complaints come in a violent and sudden manner. Pains usually in shorty attack, causes redness of face, fullness of head and throbbing of carotids. Head hot and painful, eyes wild staring, pupils dilated, pulse full globular bounding, mucous membrane of mouth dry, stool tardy, urine suppressed, sleepy but cannot sleep¹³.
8. **Gelsemium Sempervirens** : Great weakness and trembling of the entire body. Desire to be quiet, to be let alone; does not wish to speak or have any one near, even if the person be silent. Headache beginning in cervical spine, pain extends over head, causing a busting sensation in forehead and eye. Sensation of band around head above eyes. Scalp sore to touch. Heaviness of the eyelids cannot keep them open. Complete relaxation and prostration of the whole muscular system with motor paralysis. Chill without thirst, especially along the spine, running up and down in rapid wave like succession from sacrum to occiput¹³.
9. **Polyporus pinicola**: Great lassitude, congestion of head, with vertigo; restlessness at night from pain in in wrist and knee; rheumatic pains; profuse perspiration. Headache about 10am, with pain in back, ankles and legs increasing until 3 pm, then gradually better. Deep dull pain in the shin bones, preventing sleep¹².
10. **Arnica montana** : Sore lame bruised feeling. **Head hot with icy coldness of body**, mouth dry and increased thirst. Pain in back and limbs, as if beaten or bruised. Sprained and dislocated feeling. Fear of being touched or approached on account of soreness of affected parts. Aggravation from touch and motion; soreness is ameliorated from warmth¹² .

SUGGESTIVE INDICATIONS OF HOMOEOPATHIC MEDICINE IN POST CHIKUNGUNYA ARTHRALGIA

During the acute phase of chikungunya fever, patients manifest with symptoms like high fever associated with arthralgia, backache and headache which resolve in few days after fever subsides, but in some cases the arthralgia/arthritis persists for many days/months, in such conditions homoeopathic constitutional treatments come into play. Following are the symptoms of some homoeopathic medicines:

- 1. Medorrhinum:** Pain in back, with burning heat. Legs heavy; ache all night; *cannot keep them still*. Ankles easily turn when walking. Burning of hands feet. Finger-joints enlarged, puffy. Gouty concretions. *Heels and balls of feet tender*. Soreness of soles. Restless; better, clutching hands. Rheumatism of top of shoulder and arm; pains extend to fingers, < by¹². Lumber vertebrae painful and sensitive to touch. Pain in sacrum, coccyx, and back of hips running around and down limbs. *Trembling all over* (subjective), intense nervousness and profound exhaustion. *State of collapse*, want to be fanned all the time; craves fresh air; skin cold, yet throws off the covers; bold and bathed with cold perspiration. Weakness of memory; cannot remember names, words or initial letters; has to ask name of most intimate friend; even forgets his own name. Cannot spell correctly; wonders how a well-known name is spelled¹³.
- 2. Causticum:** Manifests its action mainly in chronic rheumatic, arthritic and paralytic affections, indicated by the tearing, drawing pains in the muscular and fibrous tissues, with deformities about the joints; progressive loss of muscular strength, tendinous contractures. Broken down senile. Restlessness at night, with tearing pains in joints and bones, and faint-like sinking of strength. This weakness progresses until we have gradually appearing paralysis. Dull, tearing pain in hands and arms. Heaviness and weakness. Tearing joints. Unsteadiness of *muscles of forearm* and hand. Numbness; loss of sensation in hands. *Contracted tendons*. Weak ankles. Cannot walk without suffering. *Rheumatic tearing in limbs; better by warmth, especially heat of bed*. Stiffness between shoulders¹². Aversion to sweets. Worse after eating fresh meat; desires for smoked meat and salt. Stool are hard, tough, covered with mucus; shines like grease; small-shaped; expelled with much straining, or only on standing up. **Rawness or soreness** in General¹³. Least thing makes it cry. Sad, hopeless. *Intensely sympathetic*. Ailments from long-lasting grief, sudden emotions¹².
- 3. Plumbum Met:** Pains in muscles of thighs; *come in paroxysms*. Cramps in calves. Stinging and tearing in limbs, also twitching and tingling, numbness, pain or tremor. Paralysis. Feet swollen. Pain in atrophied limbs alternates with colic. Loss of patellar reflex. Hands and feet cold. Pain in *right big toe* at night, very sensitive to touch. Lightning-like pains; temporarily better by pressure. Excessive colic, *radiating to all parts of body*. *Abdominal wall feels drawn by a string to spasm*. Constipation; *stools hard, lumpy, black with urging and spasm of anus*. Yellow, dark-brown liver spots. *Worse*, at night, motion. *Better*, rubbing, hard pressure, physical exertion¹². *Distinct blue line along margin of gums*; gums swollen, pale, show a lead-colored line. *Excessive and rapid emaciation*; general or partial paralysis; extreme, with anaemia and great weakness¹³.

4. **Lycopodium:** Numbness, also drawing and tearing in limbs, especially while at rest or at night. Heaviness of arms. Tearing in shoulder and elbow joints. Pain in heel on treading as from a pebble. These patients are intellectually keen but physically weak, their ailments gradually developing, functional power weakening, with desire warm food, drinks, and sweets¹². *Pains:* aching-pressure, drawing; chiefly right sided, < **four to eight P.M.**, *affects right side, or pain goes from right to left*¹³.
5. **Calcarea Carbonica:** Pain as if sprained; can scarcely rise; from over lifting. Pain between shoulder-blades, impeding breathing. Rheumatism in lumbar region; weakness in small of back. Rheumatoid pains, as after exposure to wet. Sharp sticking, as if parts were wrenched or sprained¹². *Cold, damp* feet; feel as if damp stockings were worn. Cold knees cramps in calves. Sour foot-sweat. Weakness of extremities. Swelling of joints, especially knee. Old sprains. Tearing in muscles. Patient is forgetful, confused, and low-spirited¹². Has anxiety with palpitation. Obstinacy; slight mental effort produces hot head. Averse to work or exertion¹². Calcarea patient is fat, fair, flabby and perspiring. Desires for boiled egg¹³.
6. **Natrum muriaticum:** Pain in back, *with desire for some firm support* Arms and legs, but especially knees, feel weak. *Numbness and tingling* in fingers and lower extremities. Ankles weak and turn easily. Painful contraction of hamstrings. Cracking in joints on motion¹². Chill between 9 and 11 am. Heat; violent thirst, increases with fever. Fever-blisters. *Coldness of the body*, and *continued chilliness* very marked. Hydraemia in chronic malarial states with weakness, constipation, loss of appetite, etc. Sweats on every exertion. Pains are better from perspiration¹³. Melancholy sadness, which induces a constant recurrence to unpleasant recollections, and much weeping; all attempts at consolation <. Psychic causes of disease; ill effects of grief, fright, anger, etc. Depressed, particularly in chronic diseases. Oversensitive to all sorts of influences. Desire for Salt, aversion for bread¹³.
7. **Lachesis:** Neuralgia of coccyx, *worse rising from sitting posture*; must sit perfectly still. Pain in neck, worse cervical region. Sensation of threads stretched from back to arms, legs, eyes, etc. *Pain in tibia* (may follow sore throat). Shortening of tendons¹². *Left side principally affected; diseases begin on the left and go the right side. Great sensitiveness to touch*; cannot bear bed-clothes or night-dress to touch throat or abdomen, no because sore or tender, but clothes *cause an uneasiness*. Fever annually returning; paroxysm every spring, after suppression by quinine the previous autumn. Fever: muttering delirium, sunken countenance, falling of lower jaw; tongue dry, black, *trembles*, is protruded with difficulty or *catches on the teeth* when protruding; conjunctiva yellow or orange color; perspiration cold, stains yellow, bloody sweat¹³.
8. **Phytolacca:** Aching, soreness, restlessness, prostration, are general symptoms guiding to Phytolacca. Has a powerful effect on fibrous and osseous tissues; fasciae and muscle sheaths. Syphilitic bone pains; chronic rheumatism. -Aching pains in lumbar region; pains streaking up and down spine into sacrum. Weakness and dull pain in region of kidneys. Back stiff, especially in morning on rising and during damp weather. Shooting pain in right shoulder, with stiffness and inability to raise arm. Rheumatism pains; worse in morning. *Pains fly like electric shocks*, shooting, lancinating, shifting rapidly. Pain in lower side of thighs. *Aching of heels*; relieved by elevating feet. Pains like shocks. Pain in legs, patient dreads to get up. Feet puffed; pain in ankles and feet. Neuralgia in toes. High fever, alternating with chilliness and great prostration¹².

REFERENCES

- ¹ Guidelines on Clinical Management of Chikungunya Fever; WHO, SEARO Guidelines.
- ² Lahariya. C & Pradhan. S.K. ;Emergence of chikungunya virus in Indian subcontinent after 32 years: A review; *Journal Vector Borne Disease* 43, December 2006, pp. 151–160
- ³ *Cecilia. D*; Current status of dengue and chikungunya in India; WHO South-East Asia Journal of Public Health |January-March 2014 | 3 (1).
- ⁴ National Vector Borne Disease Control Programme Annual Report 2014-15 Government of India National Vector Borne Disease Control Programme Directorate General Of Health Services Ministry Of Health & Family Welfare.
- ⁵ Singh.K. S; Overview on Chikungunya Virus pathology; Human emerging and re-emerging infections: viral and parasitic infections, Volume I, first edition. Edited by Sunit. K. Singh; Published by John Wiley & Sons, Inc.
- ⁶ Vaccine, WHO Product Development for Vaccines Advisory Committee (PDVAC) Pipeline Analyses for 25 Pathogens; Volume 34, Issue 26, 3 June 2016, Pages 2976–2981
- ⁷ Guidelines for clinical management of dengue fever, dengue haemorrhagic fever and dengue shock syndrome. 2008. Directorate of National Vector Borne Disease Control Programme , DGHS, Ministry of Health and Family Welfare, Govt. of India.
- ⁸ <http://wwwnc.cdc.gov/travel/yellowbook/2016/the-pre-travel-consultation/protection-against-mosquitoes-ticks-other-arthropods>
- ⁹ Guidelines for Homoeopathic Practitioners for Clinical management of Dengue fever; Central Council for Research in Homoeopathy.
- ¹⁰ Nair Janardanan KR, S Gopinadhan, TN Sreedhara Kurup, Kumar BJ, Aggarwal A, R Varanasi, et al. Homoeopathic Genus Epidemicus 'Bryonia alba' as a prophylactic during an outbreak of Chikungunya in India: A cluster -randomised, double -blind, placebo- controlled trial. *Indian J Res Homoeopathy* 2014; 8:160-5.
- ¹¹ Wadhvani Gyandas G; Homeopathic drug therapy Homeopathy in Chikungunya Fever and Post-Chikungunya Chronic Arthritis: an observational study: Vol. 102, issue 3, July 2013 Elsevier Journal.
- ¹² Boericke. W; Boericke's New Manual of Homoeopathic Materia Medica; 3rd Revised and augmented edition; B jain Publishers
- ¹³ Allen. H.C ; Allen' s Key notes rearranged and classified with leading remedies of the Materia Medica with Bowel nosodes; 10th edition
