

To access the usefulness of homoeopathic medicine Dulcamara for prevention of chikungunya during its epidemic in Delhi –NCR Region: A randomised controlled clinical Trial.

Abstract:Objective:

1) To access the usefulness of homeopathic medicine Dulcamara for prevention of *chikungunya* during its epidemic in Delhi –NCR Region : A randomised controlled clinical Trial.

Material and method:

A study was conducted in Delhi for prevention of chikungunya during the epidemic outbreak in August-September - October 2016. Healthy participants which have no complaints of fever and arthralgia¹, were eligible for our study. Follow-up was done for 60 days. Infection rate in the study groups was analysed and compared. 1050 healthy participants were recruited from the OPD and follow up for minimum 2 month during chikungunya epidemic in Delhi. Patients were examined by expert homoeopathic physician, clinical diagnosis were made FOR differentiated the chikungunya fever from other viral fever and dengue types. The study participant were randomised divided into two groups : Group A having 525 study participant was administered placebo, Group B : having 525 study participant given Dulcamara 30c.

Result: we found that medicine dulcamara is highly effective in prevention or cure of chikungunya fever maximum no of study participants in group B who took dulcamara were devoid from fever and other symptoms. Result showed that the relief is more in Group B as compare to Group A.

Conclusion: Homeopathic medicine have potential to prevent peoples from the viral diseases². Homeopathy have potential to Prevent Chikungunya fever. It is concluded that Dulcamara is useful in prevention of Chikungunya Fever.

Keywords: Chikungunya , Prevention , homoeopathy , Dulcamara,

Introduction:

Chikungunya is one of the viral disease for which no specific cure or vaccine is available .it is not new to India..An epidemic was first reported in 1963 -1965 in Kolkata³. Kolkata and kerala were the worst effected states in 2008 .No specific treatment or vaccine available at present for chikungunya ,so only method is prevention .chikungunya is a form of viral fever caused by an alphavirus that is caused by aedes aegypti bite .its name is derived from the “makonde” means that which bend up due to stopped posture developed as a result of arthritic symptoms⁴. Chikungunya is a form of viral fever caused by alpha virus .It is spread up by the bite of aedes aegypti mosquito . The incubation period of chikungunya is 2 – 3 days with a range of 1 to 12 days .It is an acute illness having symptoms fever, joint pain, headache, backache, arthralgia and rash.

Homeopathy medicine in epidemics:

According to sphered ,homeopathy medicines gives the best result⁵ .There is a significant effect of Homeopathy in the control and management of infectious epidemic disease .Dr .Hahnemann during a 1799 scarlet fever Outbreak in Germany observed that three children in the family contracted the disease ,but the fourth one is remained unaffected .The Fourth children had been treated with homeopathic medicine Belladonna due to joint problem⁶ .Dr .Hahnemann himself prevented many epidemics with homoeopathy

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.Homeopathy becomes popular in Europe due to its efficiency in many epidemics like cholera ,small pox,diphtheria ,meningitis and Polio⁷.

So many people became effected by epidemic of Chikungunya. Due to emergence of large number of cases of dengue and chikungunia, there was an acute shortage of beds. It has been proved in many surveys that homoeopathic medicines are very effective in treating all such cases of viral fevers⁸ and thereby restoring the health of patient. Recent well documented studies have shown how homeopathic medicines are helpful in preventing and treating Dengue in Brazil, Pakistan and India.

The medicine which is being used in epidemics in Homeopathy is called “GENUS EPIDEMICUS”.

Transmission⁹

Transmission of chikungunya virus occurred through the bites of infected mosquitoes mainly *aedesegypti* & *aedesalbopictus*. there are two host of chikungunya virus .during epidemics primary host are human beings¹⁰ .handling of infected blood & drawing blood from an infected patient ,the chances of blood borne transmission also occurs^{11, 12} .

When the mother was infected with chikungunya virus chances of intrapartum transmission occurs.

Possibility of infants infected from chikungunya virus through breast feeding is rare because no studies found chikungunya virus in breast milk¹³ .

The risk of a person transmitting the virus through a biting mosquito or through blood is maximum when the patient is viremic during the period of the first week of illness.

Clinical Signs & Symptoms¹⁴

The majority of people infected with chikungunya virus turn out to be symptomatic. The incubation period is typically 3–7 days (range, 1–12 days). This means the disease manifests 1 to 12 days after mosquito bite.

The symptoms of chikungunya include the following.

- Sudden onset of fever (> 40 C / 104 °F)
- Pain in Head, acute headache with nausea.
- Severe pain in joints (or arthralgia), Muscular pain
- Swelling of Joints, limbs, face anywhere on the body
- Rash anywhere on the body
- Stiffness in joints (wrists, ankles, inter-phalangeal joints)
- Loss of taste
- Mouth ulcers
- Sometimes there may be infection of the conjunctiva of the eye and some photophobia

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- Chills
- Nausea and vomiting
- Bleeding or haemorrhage (may occur rarely).

Recovery from chikungunya virus infection without any medication found in most of the patients. Improvement occurs within a few days but sometimes pain continue for a longer duration¹⁵. Over 12% of patients tend to develop chronic joint pains because this virus multiplies in muscles.

Diagnosis¹⁶

Detection of virus, viral nucleic acid and virus specific immunoglobulin in patients blood or plasma is confirmed laboratory diagnosis of chikungunya virus¹⁷

Rapid Chikungunya Viral culture may sense virus in the first 3 days of illness.

RT-PCR and ELISA is the research laboratory test for chikungunya¹⁸.

RT-PCR¹⁹

RT-PCR is useful for detection of viral RNA from the blood draw from the patients of infection during acute phase. Level of viremia is high during chikungunya infection which last for four to six days after onset of illness.

For confirm diagnosis of chikungunya virus infections, RT-PCR is usually been done within first seven days of illness^{20, 21}.

ELISA²²

ELISA is useful for detection of both anti –CHIK Virus IgM&IgG antibodies from acute or convalescent samples. It requires large amount of blood than other tests. Result of ELISA also requires two to three days²³.

Dulcamara

After carefully studying symptoms of various patients and bearing in mind the Humidity of various states of India like Delhi NCR, Bombay, UP, few south Indian and north Indian states where relative humidity is more than 60 % and its considered as best for breeding of mosquitoes and the treatment modalities which corresponds to the humid weathers like *Dulcamara*, *Arania-diadema*, *RhusTox*, *Bryonia-Alba*, *Arsenic-album*, *Natrum-sulph*, *Eupatorium perf*, *Rhododenderon*, *Gelsemium* etc.

GENUS EPIDEMICUS²⁴

Research groups in our Centre have found patient's symptoms and modalities correspond to *Dulcamara* as Genus Epidemicus.

Symptoms are brought after or aggravated by sudden changes in hot weather, rainy season, exposure to dump and cold condition^{25, 26}.

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Humidity level is high (in Delhi 64 % August-September-October).

From (July To September)2016 ,there was an outbreak of viral fever with arthralgia in epidemic form in Delhi – NCR .Many of the cases were diagnosed as chikungunya .So Our centre undertook the randomised control trial to assess the efficiency of Genus epidemicus (Dulcamara) in prevention of spread of chikungunya.

Material and METHOD:.

Study Design : this was a randomised control trial study conducted in Dr Naval's Homeo Clinic and research centre in Delhi during the period august – September 2016 ,the area where outbreak of chikungunya had occurred and no measures were taken either by the Government of NCT of Delhi or any private organisation.

Exclusion Criteria

1) Participant below 1 years & above 80 years of age. 2) Participant suffering from thyroid hormone imbalance. 3) Pregnant & lactating mothers. 4) Participant suffering from haemorrhoids. 5) Patients suffering from diabetes/AIDS/malignancies/tuberculosis & cardiac disorder.

Inclusion Criteria

1) All the participant except the exclusion criteria. 2) The participant who doesn't presenting the classical sign & symptoms of chikungunya. 3) Participant not taking any other medicine for the disease.

The selected patients were randomly placed & studied under following two groups:

Group A: Placebo was administered to control group but the globules were impregnated with non-medicated alcohol. . (525 study participant in the group)

Group B: Group A was give homeopathic medicine Dulcamara. The participant were instructed to take three doses per day for 3 days orally in empty stomach. (525 study participant in the group)

The participant who were under trial were allowed to repeat dulcamara after 15 days in the same dosage schedule provided the prevalence of epidemic continued in the area .follow up visits were made by the participant on 15 th ,28 nd ,29 and 35 day. Any Participant who suffered from fever and arthralgia during the follow up period was considered as a case of chikungunia .

Selection of genus epidemicus :

The homeopathic medicine Dulcamara was selected as a prophylactic dose for chikungunya during the epidemic as per the instruction given by Dr .Hahnemann in his Organon of medicine.

Why DULCAMARA? Its Suitability²⁷ ...

Various in vitro studies has proved that Homeopathy have an potential to cure viral diseases^{28, 29, 30}.

.It is administered in subjects with rheumatism³¹, pain and aches, sore and bruise all over, the joints were inflamed; red, swollen due to change in whether conditions.

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And its most effective during damp and rainy conditions.

Characteristic ^[32]

Given to subjects of phlegmatic, scrofulous constitutions, who are fidgety and restless, irritable, subject to catarrhal, rheumatic or skin infection brought or aggravated by cold³³, damp, rainy weather, or sudden changes in extremely hot weather (Bryonia)³⁴.

Fever symptoms of dulcamara: burning heat/dry all over, fever; and heat comes on during sleep, Chilliness towards evening, prominently on back. Icy coldness, with pains in joints and all over body. Dry heat and burning of skin. fever; no perspiration fever; stages of chill, heat and sweat; chill followed by heat; fever; stages of chill, heat and sweat; heat followed by chill, patient thirsty during chilliness stage along with fever, Chilliness along with thirst³⁵.

Delicate skin, prone to eruptions like urticaria. Every time patient takes cold or exposed to the cold³⁶.

Anasarca, after fever, rheumatism, scarlatina, measles.

Dropsy after suppressed perspiration or skin diseases from cold air or humid atmosphere³⁷

Urticaria over whole body, no fever.

Relations – Complementary: to Baryta carb., Kali sulph.

Sample size: Total sample size of 1050 (525 in each group)

Statistical Analysis : all the healthy participants were observed for a period of six week with a weekly follow up. Participants who are found infected during follow up were not considered for further observation in the study. The P value less than and equal to 0.05 was considered to be significant.

In the following study:

Null hypothesis is “Dulcamara homeopathic medicine is not useful in preventing chikungunya.

Rejecting the null hypothesis is Alternative hypothesis³⁸.

Null hypothesis is that proportion of probable case of chikungunya remains unchanged in both groups .i.e. $H_0: P_1 = P_2$

And the alternative hypothesis is that proportion of probable case of chikungunya decrease in group B. Level of significance is 5 per cent.

$H_a: p_1 > p_2$

$n_1 : 447, p_1 : 146/447$

$n_2 : 453, p_2 : 41/453$

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n_1 : No. Of study participant in Group A

n_2 : No. Of study participant in Group B

p_1 :Population proportion in Group A.

P_2 :Population proportion in Group B.

Best Estimate of Proportion p_0 : $n_1 p_1 + n_2 p_2/n_1+n_2$

: 0.2077

We apply Z test for difference in proportion of two samples and test estimate.

q_0 : $1 - p_0$

the test statistic z can be worked out as under : $z = 8.740$

As the H_a is one sided and determination of the rejection region after applied one tailed test ³⁹(in the right tail because H_a is of greater than type) at level of significance 5 per cent using the normal curve area table :

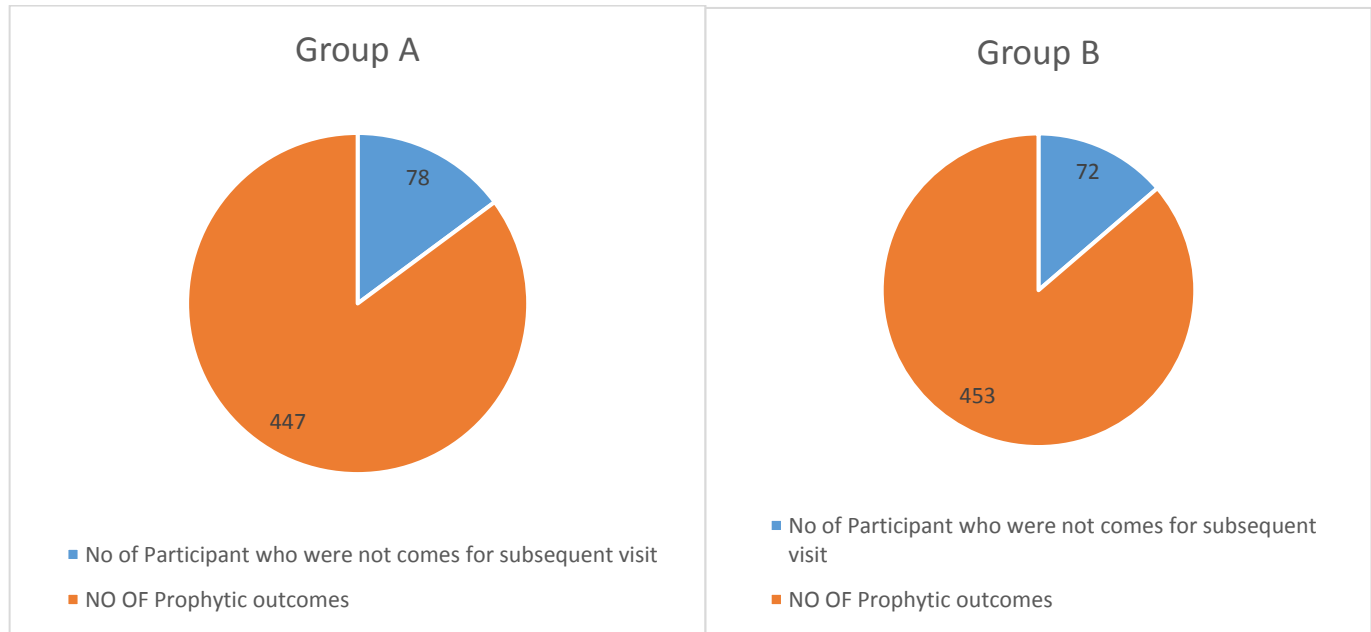
R : $z > 1.645$

The observed value of z is 8.740 which is in the rejection region and so we reject H_0 is In favour of H_a and conclude that the proportion of probable cases of chikungunya has decreased significantly in Group B.

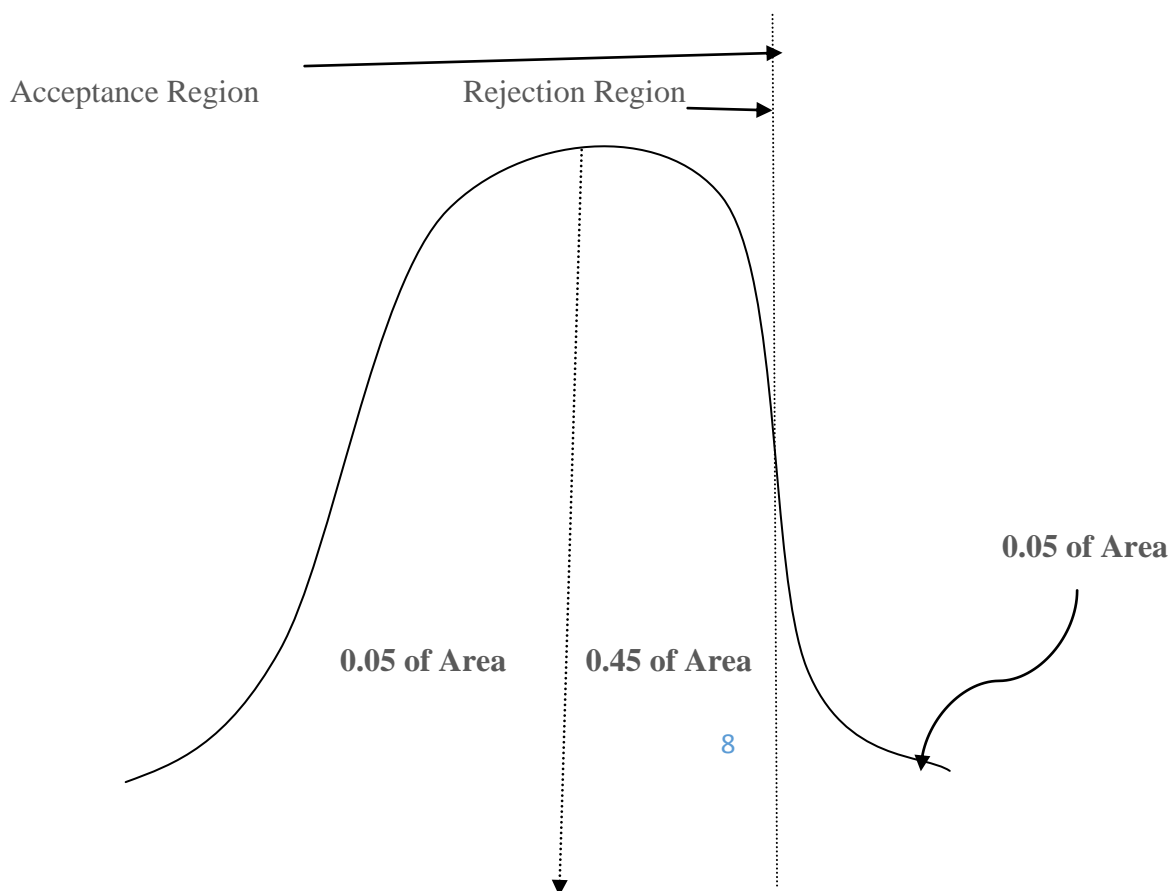
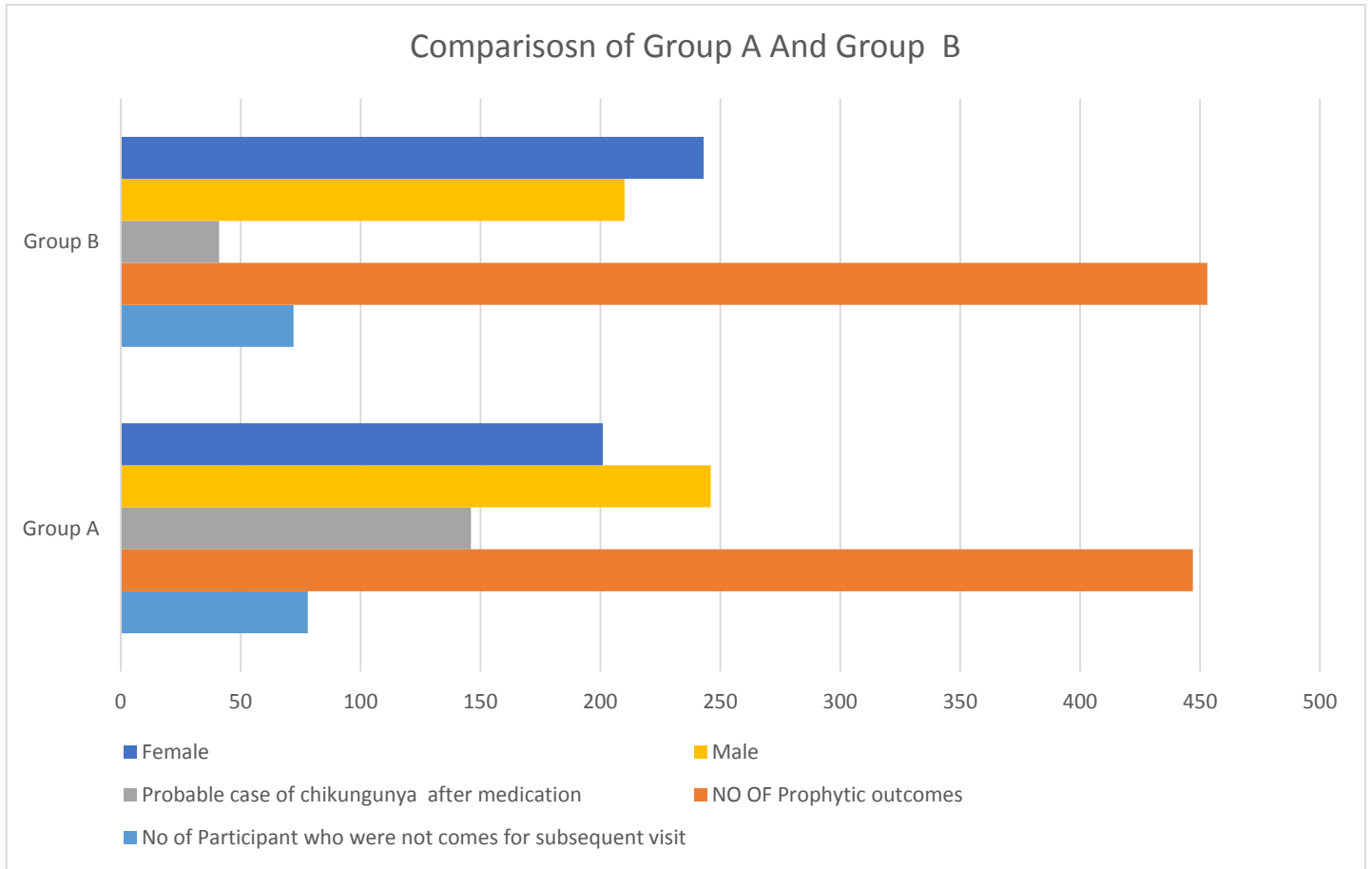
	Group A	Group B
No of study participant	525	525
No of Participant who were not comes for subsequent visit	78	72
NO OF Propyhtic outcomes	447	453
Probable case of chikungunya after medication	146	41
Mean age	29.8	32.7
Ratio of male :Female	246 :201	210:243

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Table 1: Comparison of both groups



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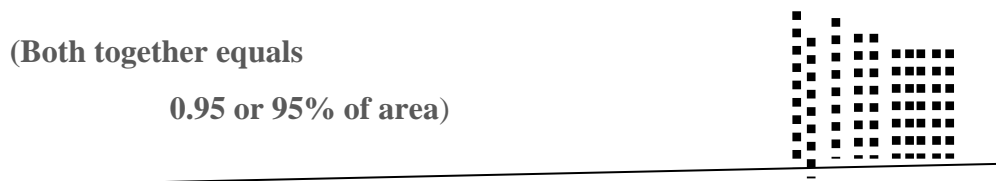


Fig 1:Acceptance and rejection regions in case of One tailed Test (Right Tail) with 5 % significance level

Mathematically we can state:

Acceptance region A: $Z \leq 1.645$

Rejection Region A: $Z > 1.645$

Result : The number of participant who were not come for subsequent visit was almost similar in both the group (14.8 % and 13.7 %) and not considered for analysis .Prophylactic outcome in group A (n = 447) and Group B (n =453) were analysed .

At the end of follow up it was observed that 9.17 % of healthy individual (41) administered with dulcamara, were presented diagnosed as probable case of chikungunya where as it was 32.7 % in the placebo group (146) .

We apply z test for comparison of two proportion and then we applied one tailed test .it showed that probable case of chikungunya is significantly less in Group B as compare to Group A.

We found that medicine dulcamara is highly effective in prevention or cure of chikungunya fever .max no of study participants in group B who were taken dulcamaraare devoid of fever. .Result showed that the relief is more in Group B as compare to Group A.level of significance between both groups is less than 0.05.

Discussion : The hypothesis that Thehomeopathic medicine Dulcamara is useful in prevention of Chikungunya proved true .the result of this trial suggests the efficiency of genus epidemicus i.e. Dulcamara in preventing chikungunya in the said epidemic ,when the epidemic is prevalent ,the value of clinical diagnosis of chikungunya is high during the epidemic ⁴⁰.WHO also diagnose all such clinical cases of chikungunya as probabale case during the epidemic ^{41, 42}.In the present study ,it was found that Dulcamara is effected in prevention of chikungunya .

With emergence of epidemic disease ,where availability of vaccine is costly and no known effective treatment are available .Homeopathic medicines as genus epidemicus (Dulcamara) is useful for prevention of incidence of chikungunya virus infection.disease .

CONCLUSION:

Dulcamara 30C as genus epidemicus was better than placebo for prevention of chikungunya in delhi .

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