

# Chikungunyadisease Spread in Maharashtra State, India and Globe.

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## ABSTRACT :-

Chickungunya is spread by the infected vector mosquitoes, like, *Aedes aegypti*, *A. albopictus*, through the virus *Togoviridae* family of genus Alpha virus. These mosquitoes are living in the fresh water bodies near by the house, in the ponds, ditches, rubber-tyres, tins, empty plastic-cans filled with water, or in watertank, on floors or top of houses without lids. All are breeding places of these mosquitoes, they may bite to man and monkey during day time at ankle or joints of foot or hands.

**Key-words :-** Chickungunya disease *Aedes aegypti*, *A. albopictus*, Maharashtra state, India, Globe.

spread through the Alphavirus, known as Urban cycle.

## Geographical Distribution at Global level :-

In 2005, an outbreak occurred in French islands of La Reunion, Mayotte, Mauritius, Seychelles. In the same year, 2005, CHIKV reappeared in India after nearly 30 years, of quiescence with 13 lacs suspected cases were reported in 12 states of India. It occurred in Africa, Asia, Europe, and America and reported about 60 countries of the World.

## Study Areas :-

As mosquitoes are prime importance in causing diseases spread like, Chickungunya, Malaria, dengue, elephantiasis, Japanese encephalitis, yellow fever etc. As the Maharashtra state is socioeconomically developed State in India. It consists of tropical monsoon temperatures between 25-27°C, average rainfall about 160-200 cm. It area consists of mainly, coastal plains, the Sahyadri ranges, and plateau region with river basins. Such climate change provide mosquito growing during monsoon causing mosquito borne diseases in Maharashtra state and all over globe. *Aedes*, *Culex*, *Mansonia* species can cause a heavy damage to global economy on medical grounds causing different diseases to man and his wildlife.

As India being hot temperate country, the insects are more or on large scale out of these mosquitoes are prime continuously give trouble to man and his belonging. If think seriously, a survey has been conducted all over from patients of Maharashtra State, India and Globe. Therefore it can give us ideas about how much expenditures have been done on medical of human and wildlife. Several reports of prevalence of different species of mosquito in humid and moist climatic conditions from different parts of the world. [\*Dale and Knight, 2008, Rajavel and Natarajan, 2008, Nagpal and Sharma 1983]. Only few information is available.

## I. INTRODUCTION :-

Chickungunya disease is spread by the infected mosquitoes hence it is "Makonde" disease means "bends up of posture" of our body. It was first recorded in Tanzania in 1952. In India, outbreak of Chickungunya disease occurred in 2005, in 121 district of India. It also occurred in various district of Maharashtra state like, Nasik, in Malegaon, talhsil affecting 221 people and more parts of other districts.

As Chickungunya disease is viral, insect borne disease spread due to the bite of infected *Aedes aegypti*, and *A. albopictus*, mosquitoes of *Togoviridae* virus, Family *Flaviviridae*. It spreads to man by infection through bite of mosquitoes, called as "Chikungunya Virus (CHIKV)" RNA virus of genus - Alphavirus. It is always self-limiting, but rarely fatal. Molecular characterization reports demonstrations gives 2 distinct strains lineages that cause epidemics in Africa and Asian countries, near about 60 countries have been affected by the Chickungunya virus.

The geographical genotypes differences in transmission cycles a salivary cycle in Africa is maintained between monkey and wild mosquitoes *A. albopictus*. While in Asia the cycle exists between man and mosquitoes species, *A.*

In recent years, there are several reports of occurrence of vector borne diseases in the world. It is necessary to review the distribution and species composition of vector mosquitoes in a particular area and state for adopting appropriate vector control measures. There are several reports and evidence from the fossil record that, the mosquitoes species cause malaria existed even about 30 years ago. Today malaria killed up to 2.7 million people and over 300-500 million sick annually causing economic losses to billions of dollars for the globe. Large number of areas of Central and South America, Hispaniola (Haiti and Dominican Republic), Africa, the Indian subcontinent, South East Asia, the middle East, and Oceania areas are known to be malaria risk of the globe. [8,\*9\*,10\*,11\*]

In endemic areas ,where transmission is high, the people are continuously infected by the mosquitoes species, so that they develop immunity against the disease. Until they have acquired with such immunity children remain highly vulnerable, 80% of the cases occur in the tropical Africa, where malaria reported 10-30% of hospital patients and is responsible for 15-25% of all the deaths of the

children under the age of 5. About 8000000 children under the age of 5 , died due to malaria every year, making this disease one of the main reason of infant and juvenile mortality rate. Inadequate health facilities and poor socio-economic conditions of the malaria endemic areas, are the main problems in these countries. Sci. Repo. (2004, Satvinder Singh Dhillon, et. al . \*

## II. MATERIALS AND METHODS :-

Survey were conducted in Maharashtra State, India and Globally from time to time during rainy season and through out the year. Outbreak in Maharashtra State, India and by different workers and scientists and researchers, from different sources and update on the Chikungunya virus in and around the Globe.

## III. OBSERVATION AND RESULTS:-

In India during years ( 2010-2016) there were many cases reported from different states and UTs of India and also Global level information from different sources is given below.

Table :-Clinically suspected CHIKV, virus cases during (2010-2016 )states and UTs ( 8\*).

Sr. No	State Name or UTS	2010	2011	2012	2013	2014	2015	2016
1	Andhra Pradesh	116	99	2827	4827	1359	817	403
2	Arunachal Pradesh	00	00	00	00	00	35	00
3	Assam	00	00	00	742	00	00	00
4	Bihar	00	91	34	00	00	03	00
5	Goa	1429	664	571	1049	1205	561	56
6	Gujrath	1709	1042	1317	2829	574	406	145
7	Harayana	26	215	09	01	03	01	00
8	Jharkhand	00	816	86	61	11	21	00
9	Karnataka	8740	1941	2382	5295	6962	2076 3	4574
10	Kerala	1708	183	66	273	272	175	55
11	Madhya Pradesh	113	280	20	139	161	67	04
12	Maharashtra	7431	5113	1544	1578	1572	391	253
13	Meghalaya	16	168	00	00	00	78	00
14	Orissa	544	236	129	35	10	81	01
15	Punjab	1	00	01	00	02	180	00
16	Rajasthan	1326	608	172	76	50	07	00
17	Tamil Nadu	4319	4194	5018	859	543	329	30
18	Telangana	00	00	00	00	1687	2067	312
19	Tripura	00	00	00	00	34	180	11
20	Uttar Pradesh	05	03	13	00	04	00	00
21	Uttarakhand	00	18	00	00	00	00	00
22	West Bengal	20503	4482	1381	646	1032	1013	301
23	Andaman and Nicobar Islands	59	96	256	202	161	68	00
24	Chandigarh	00	01	00	01	00	01	00

25	Deev and Daman	00	00	100	02	00	00	00
26	Delhi	120	110	06	18	08	64	00
27	Lakshadweep	00	00	00	00	00	00	00
28	Puducherry	11	42	45	146	399	245	90
Total		48176	20402	15977	18840	16049	27553	6235

Provisional till 30th April 2016,(available at) <http://www.nvbdc.gov.in/chik.cd.html>. cited on 19th, July 2016, [5\*Dellate,H. et.al]. We can have further discussion about the Globe as follows in the next paragraph on the next page in detail.

#### IV. DISCUSSION :-

There are more than 85,000 dipteran species of insects all over the world. It is one of the largest order of insects showing great diversity both morphologically and ecologically, and many are extremely specialised. One results of insects that, extensive diversity is spilt into a very large number of families, many of which are small number of families, and are very specialised, which makes generalization difficult. More than 3000 species were reported globally. Very slender flies, with long legs, long antennae, pilose in males and pilose in females. Mouth parts with piercing and sucking type, elongated proboscis, wings with fringing scales, posteriorly and along the veins, ocelli absent. [6\*] Larvae and pupae are aquatic and active, larvae distinctly metapneustic. A world widely group but with the greatest diversity in the tropics, although extremely abundant in Arctic region where the larvae are very important in freshwater in the food webs ;some euryhaline species are important in saline and brackish pools on both rocky shores and salt marshes or mangroves. Aedes are many species are conspicuously banded black and white; many urban areas species adapt to breed in tiny bodies of water like rain butts, tin cans, broken bottles, footprint in the mud, etc, in forest, it breed in tree holes, leaf axils ( pineapple, bananas etc.. [2\*]

#### Out break of Chikungunya in Global level after (2004-2017):-

In 2004, 5, lac cases were reported from Kenya and Indian Ocean up to 2006,two years period. La Reunion in 18 th century to Hawaii in 1895 to the Mediterranean Sea from 1979 to USA in 1985. Recent outbreaks in Greece and partiality to Cesena.

[4\* Grantzet.al],[5\* DDebrelle,M. et.al].

In 2007,197, cases were reported from Europe, according to, historical data record, Florida played a key role in introducing mosquito in South

America in 1986, and later in Central America, Mexico and Panama in 2002, and 2004, respectively. From it to Brazil, Argentina.

The first detection CHIKV in the America was recorded in Carribean in late 2013, followed by dramatically spread virus throughout the continent. It has been stated that, CHIKV arrived in Brazil through two genotype with A. aegypti , and A. albopictus, in2013, 72 cases were reported from France, U. K. and Germany. [4\*-Brady,C.J.et.al]

In Asia and America in 2014, local transmission of CHIKV-ASIA in Amazon region and also in Amazon region. In 2014,15,000 cases were reported from France and UK. In 2015, 624 cases were reported, America 37,480 confirmed cases of CHIKV.

In 2016,Vazeille and colleagues reported in Congo region. 25 mosquito populations were considered from different countries like Ancestral Asian Area and 22 samples across La Reunion to Indian Ocean, Mediterranean basin, Hawaii, in the Pacific Ocean, North, Central and South America and Central Africa, Southeast Asia, Japan, China, Thailand, La Reunion, Albama, Greece, Italy-1, Italy-2. [12\*],[14\*].

In 2017,548 cases were reported, in Europe, and 3 -lac cases were reported from Columbia and 146,914 confirmed cases of Chikungunya disease.

As previous years, Asia and the America reported that 8,387 cases, India reported 62,000 , America and Carribean were reported 185,000 cases from the survey.

Outbreak were also occurred in the Sudan (2018), Yemen (2019), and more recently Cambodia and Chad (2020) . Microsatellite analysis was done by author. [12-18]\*

#### V. CONCLUSION:-

As the above reports collected from internet, information from different countries showing the severe attack of A. aegypti, and A. albopictus dangerous spread out of the disease due to transportation, and adaptation of the both species in globe. It causes CHIKV-ASIA,, and other Chikungunya disease on large scale, at various locations in various countries. Therefore, mosquito bites causing large damage to human being and his belongings on medical, and economic grounds. Hence, it is necessary to control mosquito species.

By making awareness among social, schools, colleges and various levels of society, through NGO's etc. [6\*]

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