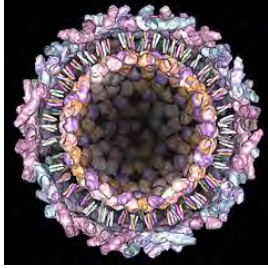


MANAGEMENT OF CHIKUNGUNYA THROUGH AYURVEDA AND SIDDHA

A Technical Report



CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA

Department of AYUSH

Ministry of Health and Family Welfare

Government of India

www.ccras.nic.in

MANAGEMENT OF CHIKUNGUNYA THROUGH AYURVEDA AND SIDDHA

A Technical Report



CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA

Department of AYUSH

Ministry of Health and Family Welfare

Government of India

New Delhi

www.ccras.nic.in

2009

Publisher

Central Council for Research in Ayurveda and Siddha

Department of AYUSH, Ministry of Health and Family Welfare, Government of India

J.L.N.B.C.A.H.Anusandhan Bhavan, 61-65, Institutional Area,

Opp. D-Block, Janakpuri, New Delhi – 110 058

E-mail: ccras_dir1@nic.in, Website: www.ccras.nic.in

© Central Council for Research in Ayurveda and Siddha, New Delhi, 2009

Cover Page

Chikungunya Virus

Guduchi (Tinospora cordifolia Willd. Miers)

Ardraka (Zingiber officinale Rosc.)

Illinkam (Red Sulphide of Mercury)

EDITORIAL BOARD

CHIEF EDITOR

Prof. G. S. Lavekar

Director

Central Council for Research in Ayurveda and Siddha, New Delhi

EDITOR

Dr. M. M. Padhi

Deputy Director (Technical)

Central Council for Research in Ayurveda and Siddha

CO-EDITORS

Dr. M. M. Rao
Assistant Director(Ayurveda)
CCRAS, New Delhi

Dr. Ganapathiraman
Director,
Central Research Institute (Siddha),
Chennai

REVIEW BOARD

Dr. Lalitkanth

Scientist-G & Head ECD

Indain Council of Medical Research, New Delhi

Dr. S. K. Mishra
Ex - Advisor, Dept. of ISM & H
Ministry of Health and Family Welfare,
New Delhi

Dr.A.C. Mishra
Director
National Institute of Virology,
ICMR, Pune

CONTRIBUTORS

Dr. N. Srikanth

Assistant Director (Ayurveda)

Central Council for Research in Ayurveda and Siddha, New Delhi

Dr. T. Anandan

Assistant Director (Siddha)

Central Research Institute (Siddha), CCRAS, Chennai

Dr.V.Srivedi

Research Officer (Ayurveda)
CSMDRIA & S, Chennai

Dr. S. Selvarajan

Research Officer (Siddha)

Central Research Institute (Siddha), CCRAS,Chennai

Dr. B. Venkateshwarlu

Research Officer (Ayurveda)

Central Council for Research in Ayurveda and Siddha, New Delhi

EDITORIAL SUPPORT

Dr. M. M. Sharma
Research Officer (Ay.)
CCRAS, New Delhi

Dr. G. C. Bhuyan
Research Officer (Ay.)
CCRAS, New Delhi

Dr. B. Das
Research Officer (Ay.)
CCRAS, New Delhi

Dr. Senthelvel
Research Officer (siddha)
CCRAS, New Delhi

Dr. Sarada Ota
Research Officer(Ay.)
CCRAS, New Delhi

Dr. S.Singh
Research Officer (Ay.)
CCRAS, New Delhi

Dr. B. S. Sharma
Research Officer (Ay.)
CCRAS, New Delhi

Dr. K. Prameela Devi
Research Officer (Ay.)
CCRAS, New Delhi

Dr. Sulochana
Research Officer (Ay.)
CCRAS, New Delhi

Dr. S. K. VEDI
Research Officer (Ay.)
CCRAS, New Delhi

Dr. S. Gaidhani
Assistant Director (Pharmacology)
CCRAS, New Delhi

Dr. S. K. Meher
Research Officer (Ay.)
CCRAS, New Delhi

PREFACE

Ayurveda - the science of life is a comprehensive system of health care of great antiquity, based on experiential knowledge and grown with perpetual additions. Original dimensions of Ayurveda are in built in the ancient compendia of Indian wisdom called *Vedas*, which are believed to be documented around 6000 years back.

Siddha system is one of the oldest systems of medicine in India. The term Siddha means achievements and Siddhars were saintly persons who achieved results in medicine. Siddha system of medicine which has got greater antiquity and very popular in southern peninsular of India is considered as one of the twin systems of India.

About 65% of population in India is reported to use *Ayurveda* and medicinal plants to help meet their primary health care needs and the safety of this vibrant tradition is attributed to time tested use and textual reference.

The recent out break of Chikungunya has caused considerable discomfort and morbidity to certain extent among the affected population. The current treatment measures help to certain extent during acute pyrexial phase while no satisfactory treatment regimen is available for managing sequelae of acute phase. The post pyrexial phase / post Chikungunya status where there is a severe debilitating arthritis associated with fatigue needs clinically safe and effective long term therapy to improve the quality of life. Ayurveda and Siddha offers number of single drugs, compound herbal and herbomineral combinations, may be rationally used to combat such conditions. Besides, several physical measures for vector control and environmental sanitation like fumigation (Dhoopana) with antimicrobial agents (Rakshoghna dravyas) which can be traceable from codified Ayurveda and Siddha literature.

The Council extends its gratitude for continuous support rendered by Dr. S. K. Sharma, Adviser (Ayurveda), Dr. Madhavan, Former Adviser (Ayurveda), Dr. D. C. Katoch, Former Deputy Adviser (Ayurveda), Department of AYUSH, New Delhi.

The Council places the record of appreciation to Dr. A. P. Singh, Former Director, Indain Medicine & Homoeopathy, Government of Gujarat, Dr. G. A. Raj Kumar, Special Commissioner of Indain Medicine and Homoeopathy, Government of Tamil Nadu, Dr. V. Arunachalam, Former Director, National Institute of Siddha, Research Officers/ Medical Officers/ Physicians working in Government Research Department, Hyderabad, Government Ayurvedic dispensaries/ Hospitals of Karnataka, staff of Government Siddha Medical College, Palayamkottai and Government Hospital, Trichencode for providing health care services during the Chikungunya out break.

I appreciate the support rendered by officers and staff of CCRAS Headquarters, New Delhi for their support.

I also appreciate Mr. Narender, Mr. Upendra from Publication section for their tireless efforts in bringing out this publication.

I hope, this document would immensely help the scientists, academicians, practitioners, research scholars, Public health administrators and students for sustainable utilization of merits of Ayurveda and Siddha and delivering safe, better health care services.

(Prof. G.S.Lavekar)
Director
CCRAS

Date: 20th January 2009

Place: New Delhi

CONTENTS

PREFACE

PAGE NO.

I. CORE GROUP

II. PARTICIPANT INSTITUTES

III. EXECUTIVE SUMMARY

SECTION -1 INTRODUCTION

SECTION-2 CONCEPT OF CHIKUNGUNYA IN AYURVEDA AND SIDDHA

SECTION-3 PREVENTION AND MANAGEMENT

SECTION-4 STRATEGY FOR RESEARCH IN CHIKUNGUNYA

ANNEXURES

Annexure-1 : Chikungunya Case Report Form

Annexure-2 : Algorithm to ascertain suspected case of Chikungunya

Annexure-3 : Case Definition for Chikungunya

Annexure-4 : Format for Preventive and Treatment Claims

Annexure-5 : Preclinical evaluation of Linga Chenduram and Nilavembu Kudineer

Annexure-6 : Standard Operating Procedures for commonly used Ayurveda and Siddha Formulations

Annexure-7: Report and Recommendations of National seminar on Management of Chikungunya through Ayurveda and Siddha

Annexure-8 : Organizations working on Chikungunya

REFERENCES

CORE GROUP

Dr. G. S. Lavekar

Director,
CCRAS,
New Delhi.

Dr. S. K. Sharma

Advisor (Ayurveda), Department of AYUSH,
Ministry of Health and Family Welfare,
Government of India.

Shri. G. A. Rajkumar

Special Commissioner,
Indain Medicine and Homoeopathy Department,
Government of Tamil Nadu.

Dr. Arunachalam

Former Director,
National Institute of Siddha,
Chennai.

Dr. A. Narayana

Director,
Indian Institute of History of Medicine,
Hyderabad.

Dr. M. M. Padhi

Deputy Director (Technical),
CCRAS Head Quarters,
New Delhi.

Dr. M. M. Sharma

Research Officer (Ayurveda),
CCRAS Head Quarters,
New Delhi.

Dr. Bhupati Raj

Director,
National Institute of Siddha,
Chennai.

Dr. N. Jaya

Assistant Director Incharge,
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. L. K. Sharma

Former Director,
Central Research Institute (Ayurveda), Gwalior.

Dr. B. K. Rravindran Pillai

Former Assistant Director,
Regional Research Institute (Ayurveda),
Trivandrum.

Dr.K. Manicavasagam

Professor & Head of the Department,
National Institute of Siddha,
Chennai.

Dr. P. K. S. Nair

Research Officer (Ayurveda),

Dr. Madhavan

Ex-Advisor (Ayurveda), Department of AYUSH,
Ministry of Health and Family Welfare,
Government of India.

Dr. A. P. Singh

Director,
Directorate of Indian Medicine & Homoeopathy,
Government of Gujarat.

Director

Department of ISM&H,
Government of Karnataka,
Bangalore, Karnataka.

Dr. Veluchamy

Former Director,
Central Research Institute (Siddha),
Chennai.

Dr. N. Srikanth

Assistant Director (Ayurveda),
CCRAS Head Quarters,
New Delhi.

Dr.M.M.Rao

Ex-Assistant Director In-charge,
Indian Institute of History of Medicine, Hyderabad,
Presently at CCRAS Head Quarters, New Delhi.

Dr.Galib

Ex. Research Officer (Ayurveda),
CCRAS Head Quarters, New Delhi,
Presently at IPGT&RA, Gujarat Ayurved University,
Jamnagar, Gujarat.

Dr. Gopakumar

Assistant Director (Ayurveda),
Regional Research Institute (Ayurveda), Bangalore ,
Presently at RRI (A), Trivandrum

Dr. V. Prabhakaran

Assistant Director (Ayurveda),
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. S. Gaidani

Assistant director (Pharmacology),
CCRAS, Head Quarters, New Delhi.

Dr. G. K. Swamy

Assistant Director Incharge,
Regional Research Institute (Ayurveda),
Vijayawada.

Dr. T. Anandan

Assistant Director (Siddha),
Central Research Institute (Siddha),
Chennai.

Dr. B. N. Sridhar

Research Officer (Ayurveda),

Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. Madhavi Kutty

Research Officer (Ayurveda),
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. R. P. Sharma

Retired Research Officer (Ayurveda),
Central Research Institute (Ayurveda),
Gwalior.

Dr. Om Prakash

Research Officer (Ayurveda),
Central Research Institute (Ayurveda),
Gwalior.

Dr. H. Pushpalatha

Research Officer (Ayurveda),
Regional Research Institute (Ayurveda),
Bangalore.

Dr. B. Venkateshwarlu

Research Officer (Ayurveda),
Central Research Institute (Ayurveda), Gwalior,
Presently at CCRAS, Head Quarters, New Delhi.

Dr. U.R. Sekhar Namburi

Research Officer (Ayurveda),
Central Research Institute (Ayurveda),
Gwalior.

Mr. Manish Wanjari

Research Officer (Pharmacology),
Central Research Institute (Ayurveda),
Gwalior.

Principal

Taranath Governemnt Ayurvedic Medical College,
Bellary, Karnataka

Dr. G. Babu

Assistant Director Incharge,
Central Research Institute (Ayurveda),
Gwalior.

Dr. Ganapathiraman

Director,
Central Research Institute (Siddha), Chennai

Regional Research Institute (Ayurveda),
Bangalore.

Dr. P. Radha Krishnan

Research Officer (Ayurveda),
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. (Smt.) M. D. Gupta

Research Officer (Ayurveda),
Central Research Institute (Ayurveda),
Gwalior.

Dr. G. Venkateshwarlu

Research Officer (Ayurveda),
Regional Research Institute (Ayurveda), Bangalore,
Presently at CRI(P), Cheruthuruthy.

Dr. V. C. Deep

Research Officer (Ayurveda),
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. G. Kusuma

Research Officer (Ayurveda),
Central Research Institute (Panchakarma),
Cheruthuruthy.

Dr. S. Selvarajan

Research Officer (Siddha),
CCRAS Head Quarters, New Delhi,
Presently at Central Research Institute (Siddha),
Chennai.

Mr. N. K. Pandey

Assistant Research Officer (Botany),
Central Research Institute (Ayurveda),
Gwalior.

Principal

Government Siddha Medical College,
Palayamkottai, Tamilnadu.

Mr. Vasanthakumar K.G,

Assistant Director (Chemistry),
Central Research Institute (Ayurveda), Gwalior,
Presently at CCRAS Head Quarters, New Delhi.

PARTICIPANT INSTITUTES

PARTICIPANT INSTITUTES

Central Council for Research in Ayurveda and Siddha (CCRAS) Institutions

1. CCCRAS Head Quaters, New Delhi.
2. Central Research Institute (Panchakarma), Cheruthuruthy.
3. Central Research Institute (Ayurveda), Gwalior.
4. Central Research Institute (Siddha), Chennai.
5. Regional Research Institute (Ayurveda), Banaglore.
6. Regional Reseach Institute (Ayurveda), Trivandrum.

National Institute

1. National Institute of Siddha, Chennai.

State Government AYUSH Departments

1. Directorate of Indian Medicine & Homoeopathy, Government of Gujarat.
2. Government Ayurvedic Dispensaries and Hospitals functioning under Department of AYUSH, Karnataka.
3. Indain Medicine and Homoeopathy Department, Chennai.

State Government Colleges/ Hospitals

1. Government Ayurvedic Hospital, Government Research Department, Hyderabad.
2. Government Hospital (Siddha wing), Thiruchengodu
3. Government Taranath Ayurvedic College and Hospital, Bellary.
4. Government Siddha Medical College, Palayamkottai.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The concept of epidemics is very well defined and established in *Ayurveda* and *Siddha*. Acharya *Charaka* (1500BC - 400AD), the great physician of *Ayurveda* had mentioned epidemic conditions under the head '*Janapadodwamsa*'. Numerous methods of prevention and controls of epidemics, measures for environmental sanitation finds an important place in Ayurvedic and Siddha literatures. It has also been mentioned that the natural course of disease and its treatment may vary according to the period, geographical extent, ecoclimatic conditions, psychosomatic constitution of an individual and so on.

Certain new disease entities may also appear in the course of time that has no identity and they may be managed through suitable drugs and procedures based on the symptom profile, taking leads from authentic literatures. This provides us basic ideology of creating an evidence on safety and efficacy through Reverse pharmacology.

Chikungunya being one such entity, emerged as epidemic out break across the country causing discomfort and morbidity to certain extent to the affected. There is no specific allopathic management for Chikungunya and vaccine is under investigation. The contemporary modalities of management encompass the use of medication for symptom relief by antipyretics, analgesics, antiinflammatory agents. Though, these measures help to certain extent during acute pyrexial phase, no satisfactory treatment regimen is available for managing sequelae of acute phase. The post pyrexial phase/ post Chikungunya status where there is a severe incapacitating arthritis associated with fatigue needs clinically safe and effective long term therapy to improve the quality of life.

Ayurveda and Siddha offers a number of single drugs, compound herbal and herbo mineral combinations, may be rationally used to combat such conditions. Besides, several physical measures for vector control and environmental sanitation like fumigation (*Dhoopana*) with antimicrobial agents (*Rakshoghna dravyas*) which can be traceable from codified Ayurveda and Siddha literature.

During the recent outbreak of Chikungunya in certain regions across the country, the Central Council for Research in Ayurveda and Siddha, AYUSH department of certain states, Government Ayurvedic and Siddha Colleges, Hospitals and dispensaries have provided health care services of affected for the management of Chikungunya through medical relief camps and out patient services. The Central Research Institute (Panchakarma), Cheruthurthy, Central Research Institute (Ayurveda) Gwalior, Central Research Institute (Siddha) Chennai, Regional Research Institute (Ayurveda), Trivandrum, Regional Research Institute (Ayurveda), Bangalore; State Government AYUSH Departments of Gujarat, Hyderabad, Karnataka, Chennai; National Institute of Siddha, Chennai; Government Siddha Medical College, Palayamkottai and Government Hospital, Trichenchodu have significantly contributed during the outbreak. Scientific observations and case reports have been recorded for furtherance of research and evaluation of the treatment episodes.

To appraise the role of Ayurveda and Siddha in the management of Chikungunya, the Council has organized a two day National Seminar on “Management of Chikungunya through Ayurveda and Siddha” during 9th & 10th March 2007 at National Institute of Mental Health and Neurosciences, Bangalore. The main objective of the workshop was to make a platform for the Ayurvedic and Siddha physicians with Modern scientists to discuss and formulate a National strategy, Protocols and therapies for Chikungunya, which would be highly useful for the provision of Health care facilities and Research strategies for future endeavors.

A special format is evolved to record the effective treatment episodes and claims from academicians, physicians and widely circulated across the country before the conduct of the national seminar, and were later compiled systematically. The observations drawn from medical camps and documented reports collected from various parts of the country revealed that the Ayurveda and Siddha regimens certainly has a role in the symptom management of post Chikungunya sequela like persistent, incapacitating arthritis, fatigue, etc.

The data embodied in this document would immensely help for taking forward the leads from Ayurveda and Siddha for further scientific validation on safety and efficacy through systematic experimental and clinical studies.

1.1 Introduction

Chikungunya is a viral disease transmitted to humans by the bite of infected mosquitoes. The disease was first observed during the outbreak in 1952 on the Markonde Plateau, along the border between Tanganyika and Mozambique. Marion Robinson and W.H.R. Lumsden first described in 1955, according to Lumsden, the term “Chikungunya” is derived from the Makonde root verb “Kungunyala” which means “to become contorted” or more specifically to say “which bends up” which reflects the posture of patient suffering from the arthritic symptoms. This disease is almost always self limited and rarely fatal.

Chikungunya usually starts with sudden onset of fever, chills, headache, nausea, vomiting, joint pain with or without joint swelling and rash which is very similar to that of Dengue fever. Unlike dengue there is no haemorrhagic or shock syndrome.

1.2 Etiology

Chikungunya virus (CHIKV) belongs to the family *Togaviridae*, is member of genus *Alphavirus*. The vector of this disease is *Aedes mosquito* (Sps. *aegypti.*), which was the same vector for Dengue and Yellow fever. Recently the Pasteur Institute in Paris claimed that the virus has suffered a mutation that enables it to be transmitted by *Aedes albopictus* (Tiger Mosquito) also.

1.3 Epidemiology

Chikungunya was first described in Tanzania, Africa in 1952. An out break of Chikungunya was seen in Malaysia 1999.

In India a major epidemic of Chikungunya fever was reported during the last millennium viz.; 1963 (Kolkata), 1965 (Pondicherry and Chennai in Tamil Nadu, Rajahmundry, Vishakapatnam and Kakinada in Andhra Pradesh; Sagar in Madhya Pradesh; and Nagpur in Maharashtra) and 1973 (Barsi in Maharashtra). Thereafter, sporadic cases also continued to be recorded especially in Maharashtra state during 1983 and 2000.

In the year 2005 and 2006, there has been a huge outbreak of Chikungunya in India. There is no case reported from the Northern states like Haryana, Punjab etc., The states affected by the Chikungunya are Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Kerala, Goa, Pondicherry, Madhya Pradesh, Gujarat, Rajasthan, Andaman & Nicobar, GNCT of Delhi, etc. The number of suspected cases in these states as on 30/10/2006 is given in the Table no.1.

Analysis of the recent out breaks has suggested that the increased severity of the disease may be due to a change in genetic sequence, altering the virus coat protein which potentially allows multiplying more easily in mosquito cells. (<http://medicine.plosjournals.org>.)

Table- 1 showing the number of suspected cases in India as on date 30/10/2006.

S. No.	Name of the State	No. of districts affected	Total fever cases/ Chikungunya cases suspected	No. of Confirmed cases
1.	Andhra Pradesh	23	77533	248
2.	Karnataka	27	760513	294
3.	Maharashtra	31	263268	679
4.	Tamil Nadu	35	64155	116
5.	Madhya Pradesh	21	60098	70
6.	Gujarat	25	72589	170
7.	Kerala	8	65434	38
8.	Andaman & Nicobar	2	4469	0
9.	GNCT of New Delhi	12	356	32
10.	Rajasthan	1	102	24
11.	Pondicherry	1	542	9
12.	Goa	2	260	2
TOTAL		188	1369319	1682

(http://www.nvbdc.gov.in/Chikungunya_status.html)

1.4 Clinical features

The incubation period of Chikungunya can be 2-12 days, but usually 3-7 days. After an incubation period there is a sudden onset of fever (>40° C or 104° F), chills, arthralgia or arthritis, rash, nausea, vomiting, headache, conjunctival suffusion, mild photophobia. The joints of the extremities are swollen and tender. Some patients may have incapacitating arthralgia or arthritis, which may last for weeks to months.

Acute Chikungunya fever lasts for few days to a couple of weeks but as Dengue fever, West Nile fever and other arboviral fevers, some patients may complain prolonged fatigue which lasts for several weeks. In the recent outbreak in Andhra Pradesh, the fever and crippling joint pain is the prevalent complaint. Fever lasted for 2 days but joint pains, intense headache, insomnia and an extreme degree of prostrations lasts for variable period, usually for 5-7 days.

1.5 Diagnosis

Diagnosis of Chikungunya is mainly made when the epidemic disease occurs with the triad of fever, rash and rheumatic manifestations. Viraemia present in most of the patients during the first 48 hours and in some cases it may be detected after 4 days also. Virus specific IgM antigens are readily detected by capture ELISA in patients recovering from Chikungunya fever and they persist in excess for 6 months.

Haemagglutination inhibition (HI) antibodies appear with cessation of viremia. All the patients will be positive by day 5-7 of illness. IgM capture ELISA is the main diagnostic tool to distinguish from Chikungunya.

Table No 2 - State-wise Status of Chikungunya Fever in India, 2006

State	2006					2007				2008				
	No. of Districts affected	Total fever cases /suspected Chikungunya cases	No. of samples sent to NIV/NICD	No. of Confirmed cases	No. of Deaths	Total fever cases /suspected cases	No. of samples sent to NIV/NICD	No. of Confirmed cases	No. of Deaths	Total fever cases /suspected cases	No. of samples sent to NIV/NICD	No. of Confirmed cases	No. of Deaths	
	1	II	2	3	4	5	6	7	8	9	10	11	12	13
Andhra Pradesh	23	77535	1224	248	0	39	39	11	0	0	0	0	0	0
Karnataka	27	762026	5000	298	0	1705	641	133	0	1104	203	17	0	0
Maharashtra	34	270116	5901	804	0	1762	297	135	0	1	1	1	0	0
Tamil Nadu	35	64802	648	116	0	45	13	10	0	0	0	0	0	0
Madhya Pradesh	21	60132	892	106	0	0	0	0	0	0	0	0	0	0
Gujarat	25	75419	1155	225	0	3223	238	122	0	49	23	12	0	0
Kerala	14	70731	235	43	0	24052	4732	909	0	68	35	14	0	0
Andaman & Nicobar	2	1549	0	0	0	0	0	0	0	0	0	0	0	0
GNCT of Delhi	12	560	560	67	0	203	203	22	0	0	0	0	0	0
Rajasthan	1	102	44	24	0	2	2	2	0	0	0	0	0	0
Pondicherry	1	542	52	9	0	0	0	0	0	0	0	0	0	0
Goa	2	287	75	2	0	93	93	18	0	0	0	0	0	0
Orissa	13	6461	171	34	0	4065	423	90	0	0	0	0	0	0
West Bengal	1	21	0	21	0	19138	1135	347	0	0	0	0	0	0
Lakshadweep	1	35	0	0	0	5184	10	10	0	0	0	0	0	0
Uttara Pradesh	4	4	4	4	0	4	4	4	0	0	0	0	0	0
Haryana		0	0	0	0	20	7	13	0	0	0	0	0	0
Total	216	1390322	15961	2001	0	59535	7837	1826	0	1222	262	44	0	0

(http://www.nvbdcp.gov.in/Chikungunya_status.html)

1.6 Treatment

There is no specific management for Chikungunya. Vaccine is under investigation and not available. Symptomatic treatment is recommended. The line of management usually the rest, Intravenous fluids, anti pyretic, anti inflammatory, analgesic agents.

Chloroquine Phosphate (250 mg) once daily has been tried in the patients with fever and arthritis which has demonstrated promising results. Aspirin to be avoided.

1.7 Prevention and Control

The prevention of Chikungunya can be done through preventing the mosquito bites and preventing the mosquito breeding.

(a).To prevent mosquito bites:

Use mosquito repellents containing DEET on exposed skin

When indoors, stay in well-screened areas. Use bed nets if sleeping in areas that are not screened or air-conditioned.

When working outdoors during day times, wear long-sleeved shirts and long pants to avoid mosquito bite.

(b). To Prevent Mosquito breeding

The prevention of mosquito breeding can be done by three methods such as Source reduction, use of larvicide and biological controls.

- 1). Source reduction can be done by elimination of all potential vector breeding places near the domestic or peri-domestic areas. Not allowing the storage of water for more than a week. Straining of the stored water by using a clean cloth once a week to remove the mosquito larvae from the water and the water can be reused. The sieved cloth should be dried in the sun to kill immature stages of mosquitoes.
- 2). Pyrethrum extract (0.1% ready-to-use emulsion) can be sprayed in rooms (not outside) to kill the adult mosquitoes hiding in the house. Temephos can be used at the dose of 1ppm/ once a week in place where water cannot be removed such as water for cattles and other purposes.
- 3). Biological controls such as introduction of larvivorous fish, namely *Gambusia* and Guppy in water tanks and other water sources.

Section-2

CONCEPT OF CHIKUNGUNYA IN

AYURVEDA AND SIDDHA

2.CONCEPT OF CHIKUNGUNYA IN AYURVEDA AND SIDDHA

2.1 Historical Perspective

The concept of communicable diseases is well defined and established in *Ayurveda*. *Charaka* (1500BC - 400AD) the great physician of *Ayurveda* has mentioned epidemic conditions under the head '*Janapadodhwamsa*' (Ch.S.Vimana Sthana-2) and dedicated a separate chapter on epidemic disorders named as *Janapadodhwamsa Vimanam*. The factors are— *Jala* (water), *Vayu* (air), *Desha* (place) and *Kala* (season), vitiation of these factors are considered to be responsible for the production of communicable diseases which can be well correlated with modern science. When contamination and vitiation of these factors takes place epidemics follow. Today water borne diseases, environmental diseases, epidemiological disorders and seasonal disorders due to infections can be correlated with *Janapadodhwamsa Vyadhis*. Such conditions are attributed to vitiation of air, water, soil etc.,

Susruta (1500BC-500AD) has very clearly defined such diseases under *Oupasargika roga* i.e., communicable diseases (S. S. N. 5/32-33);

प्रसंगाद् गात्रसंस्पर्शान्निश्वात्सहभोजनात् ।
सहशय्याऽऽसनाच्चापि वस्त्रमाल्यानुलेपनाद् ॥
कुष्ठं ज्वरश्च शोषश्च नेत्राभिष्यन्द एव च ।
औपसर्गिकरोगाश्च संक्रामन्ति नरान्तरम् ॥

सुश्रुत. निदान. ५/३२-३३

Acharya Charaka has described three main objectives of *Bhuta-Visa rati* (Reproduction); *himsa* (Production of disease) and *abhyarchanam* (worship by mankind). *Susrutha* has emphasized that, in case of children *Grahas* affect them if the mother or *Dhatri* does not have adequate hygiene and does not offer prayers. It is evident from above description that the *Ayurveda* has a enormous knowledge of mode of spread, nature of microorganism and how to combat the disease long back. The *krimis*, *bhutas*, *grahas*, *rakshas* and their *agantuka nidana* are all micro organisms may be virus, bacteria and fungal organisms.

Charaka has given three main processes for treating the *krimi rogas*. These are *nidana parivarjana* (to avoid the factors responsible for the production of disease), *apakarshana* (removal of krimi from the affected site) and *Prakriti Vighata* (changing the environment, which favourable for the growth of microbes). The concept seems to be very similar to modern microbiology and practice of medicine.

The overall literary survey on *Krimi* reveals that wherever the symptomatology consists of *jvara*, *atisara*, *puya*, *sotha*, *sula* etc., the presence of invasion by *krimis* (microbes), should be considered and the line of treatment should be planned accordingly .

Though there is no direct reference of Chikungunya, but it can be equated with the condition when Jvara is associated with arthritis. In Ayurvedic literature, we can find such references where fever is associated with arthralgia/ arthritis. The symptoms of **Vata Pitta Jvara** and **Vata Kapha Jvara** are similar to the symptoms of Chikungunya fever to some extent. (Table-3) The description of **Sandhigata Sannipata Jvara** mentioned by Bhava Prakkasha (1550AD) can be equated with Chikungunya fever. Sandhigata Sannipata Jvara is characterised by fever, joint pains and swelling, sleeplessness, cough etc., Bhela Samhita (Sutra Sthana, 13) has mentioned Sharada jvara – a seasonal fever that occurs preceding the rainy season, usually attributable to viral fevers.

Table-3 Symptoms of Chikungunya which can be correlated with Jvara lakshanas mentioned in different Ayurvedic texts.

Name of the Text	Type of Jvara/ Roga	CHIKUNGUNYA SYMPTOMS									
		Fever	Chills	Arthritis/ Arthralgias	Head ache	Nausea	Vomit -ing	Fatigue	Sleep Less-ness	Constitutional symptoms	
										Loss of appetite	Heavi-ness
Ch.S.Ch.	VP	+	-	+	+	-	+	+	+	-	-
	VK	+	+	+	+	-	-	-	-	-	-
Su. S.U.	VP	+	-	+	+	-	+	+	+	+	-
	VK	+	+	+	+	-	-	-	-	-	+
As. H. Ni	VP	+	-	+	+	-	+	+	+	-	-
	VK	-	-	+	+	-	-	-	-	+	-
As.S.Ni.	VP	+	-	+	+	-	-	-	-	-	-
	VK	-	-	+	+	-	-	-	-	-	-
Ma.Ni.	VP	+	-	+	+	-	+	-	+	+	-
	VK	+	+	+	+	-	-	-	-	-	+
Bh.Pr. Ma.	Sandhigata-Sannipata Jvara	+	-	+	-	-	-	-	+	-	-

[VP- Vata Pitta Jvara; VK- Vata Kapha Jvara; + Present ; - Absent]

[Ch.S.Ch. - Charaka Samhita Chikitsa sthana 3/85-87; S.S.U. - Susruta Samhita Uttara Tantra 39/47-49

As.H.Ni. -Astanga Hridaya, Nidana sthana 2/24-25 ; As. S. Ni. -Astanga Samgraha Nidana Sthana 2/21-22 ;

Ma.Ni.-Madhava Nidana 2/14-16 ; Bh.Pr.Ma- Bhava Prakkasha Madhyama Khanda, Prathama Bhaga, 500.]

शिरोरुक् पर्वणां भेदो दाहो रोम्णां प्रहर्षणम् ।
कण्ठास्यशोषो वमथुस्तृष्णा मूर्च्छा भ्रमोऽरुचिः ॥८५॥
स्वपन्नाशोऽतिवाग्जृम्भा वातपित्तज्वराकृतिः ।
शीतको गौरवं तन्द्रा स्तैमित्यं पर्वणां च रुक् ॥८६॥
शिरोग्रहः प्रतिश्यायः कासः स्वेदाप्रवर्तनम् ।
सन्तापो मध्यवेगश्च वातश्लेष्मज्वराकृतिः ॥८७॥

(चरक संहिता चिकित्सा स्थान, ३/८५ - ८७)

तृष्णा मुच्छा भ्रमो दाहः स्वप्ननाशः शिरोरुजा ।
कण्ठास्यशोषो वमथू रोमहर्षोऽरुचिस्तथा ॥८७॥
पर्वभेदश्च जम्भा च वातपित्तज्वराकृतिः ।
तैमित्यं पर्वणां भेदो निद्रा गौरवमेव च ॥८८॥
शिरोग्रहः प्रतिश्यायः कासः स्वेदप्रवर्तनम् ।
सन्तापो मध्यवेगश्च वातश्लेष्मज्वराकृतिः ॥८९॥

(सुश्रुत संहिता, उत्तर तंत्र, ३९/४७-४९)

(माधव निदान, २/१४-१६)

शिरोर्तिमूर्च्छायमिदाहमोहकण्ठास्यशोषारतिपर्वभेदाः ।
उन्निद्रतातृड्भ्रमरोमहर्षा जृम्भातिवाक्त्वं च चलात्सपित्तात् ॥२४॥
तापहान्यरुचिपर्वशिरोरुक् पीनसश्वसनकासविबन्धाः ।
शीतजाड्यतिमिरभ्रमतन्द्राः श्लेष्मवातजनितज्वरलिङ्गम् ॥२५॥

(अष्टांग हृदय निदान स्थान, २/२४-२५)

शिरोऽर्तिमूर्च्छावमिदाहमोहकण्ठास्यशोषारतिपर्वभेदाः ।
उन्निद्रतातृड्भ्रमरोमहर्षा जृम्भातिवाक्त्वं च चलात् सपित्तात् ॥२१॥
तापहान्यरुचिपर्वशिरोरुक् पीनसश्वसनकासविबन्धाः
शीतजाड्यतिमिरभ्रमतन्द्राः श्लेष्मवातजनितज्वरलिङ्गम् ॥२२॥

(अष्टांग संग्रह, निदान स्थान, २/२१-२२)

व्यथाऽतिशयिता भवेच्छ्वयथुसंयुता सिन्धुषु, प्रभूतकफता मुखे विगतनिद्रता कासरुक् ॥
समस्तमिति कीर्तितं भवति लक्ष्म यत्र ज्वरे, त्रिदोषजनिते बुधैः स हि निगद्यते सन्धिगः ॥

(भावप्रकाशः, मध्यखंड, ज्वराधिकार, १/५००)

According to Charaka (Charaka Samhita, Chikitsa Sthana 3/114-116) “*Bhutabhishanga vatolbana vishama Sannipata Jvara*” can also be understood as Chikungunya.

कामशोकभयक्रोधैरभिषक्तस्य यो ज्वरः ॥११४॥
सोऽभिषंगाज्ज्वरो ज्ञेयो यश्च भूताभिषंगजः ।
कामशोकभयाद्वायुः, क्रोधात् पित्तं, त्रयो मलाः ॥११५॥
भूताभिषंगात् कुप्यन्ति भूतसामान्यलक्षणाः ।
भूताधिकारे व्याख्यातं तदष्टविधलक्षणम् ॥११६॥
(चरक संहिता चिकित्सा स्थान, ३/११४-११६)

In Siddha system, the signs and symptoms of Vatha suram is similar to “Chikungunya”.

“குடந்தன்னில் சீதமலாது சுரமும் வராது
அசீரணமின்றி சுரம் வராது”.

(தேரையர்)

Anar pitham is the one of the types of Pitham. It is located in stomach and intestine, which separates the nutrition from the food. If, Kapham increased in stomach and intestine, which will decrease the function of anar Pitham, which will leads to indigestion and fever.

2.2. Symptoms in Siddha System of Medicine:

“வாத சுரத்தின் குணங்கேளாய்
மயிர்க் கூச்செறிவோடு டல் குளிரும்
போத நடுக்குங் கை கால்கள்
பொருத்து தோறு முளைவாகும்
பேத முக மினுமினுக்கும்
புறந் தானதைத்து வெளுத்திருக்கும்
ஊதை மிகுந்து மலம் வரளு
முடனே நீருஞ் சிறுத்துடுமே”.
“தோன்று முடலந் தனை நறுக்கித்
துவைத்தாற் போல நடுக்க முற்றிப்
சான்ற வுணவு வேண்டா நஞ்
சது போற் சக்தி யருவருப்புற்
நேற்ற விரவும் பகலுந்தா

னில்லை யறக்க முன்றோ வாய்
நான்ற கைகால் கடுத்துழற்றி
நலஞ்சேர் சந்து முளைந்திடுமே.
(ஆதாரம்: சித்த மருத்துவம்)
“செப்புகிறேன் வாதசுரத் தின்கு ணத்தைத்
திருமுகமு முதடுமே கறுத்துக் காணல்
தப்புகிறேன் சரீரமெல்லாந் தடித்து நோதல்
தாகந்தான் மிகக்காணல் மெய்ந டுக்கல்
திப்புகிறே னுடம்புதிமி ரெடுக்க முட்ணம்
தேகம்பா ரித்திருக்கல் மலபே தத்தால்
குப்புகிறே குளிர்ந்துமயிர்க்கூச் செறித லிந்தக்
குணமெல்லாம் வாதசுரக் கூறுமாமே”

-யூகி வைத்திய சிந்தாமணி 800
-பக்கம் 52 பாடல் 139

1. Rigor with fever
2. Pain in the major joints associated with swelling especially knee, elbow shoulder and ankle joints, small joints may also be affected
3. Stiffness of joints
4. Restricted movements
5. Flatulence
6. Vomiting
7. Anorexia
8. Lacrimation in the eyes, heaviness of head.
9. Sleeplessness
10. Restlessness
11. Blackness of the face and lips

2.4 Comparision of Vadha Suram and Chikungunya

In Siddha system of medicine disease classifications are based on the symptoms, vitiation of humours and line of treatment. In this clinical entity fever and arthritis are the most important and predominant symptoms and it has to taken up for the correlation with Chikunguniya. Thus,

in Siddha system of medicine the symptom fever has been classified in to several clinical entities.

It has been classified in to sixty four types and in to two categories is called as thanvali suram (fever due to the constitutional pathology) and piravali suram (diseases caused by the extrinsic factors) under first category 12 types and second category 52 types are found to be described. The signs and symptoms manifested in the disease can be correlated with Vatha suram. The symptoms were described in Vatha suram is resembles like Chikunguniya symptoms.

2. 4. Management of Chikungunya in Ayurveda and Siddha

Chikungunya is not a life threatening infection. The treatment modalities of Chikungunya can be categorised into symptom modifiers and general health promoters; more specifically to say the drugs which improve the Quality of Life (QOL) and Vector control measures/ agents are beneficial in the management of Chikungunya.

(a.) Symptom modifiers:

The agents that alleviate symptoms are categorised under symptom modifiers such as-

1. *Jvara hara* (anti pyretics)
2. *Sotha hara* (anti inflammatory)
3. *Vedanaa hara* (analgesics)
4. *Kushtghna* (Skin diseases)
5. *Kandughna* (anti pruritic)
6. *Kasa hara* (anti tussive)
7. *Swasa hara* (anti dyspnoeic)
8. *Atisara hara* (anti diarrhoeal) etc.,

(b.) General Health Promoting agents

The agents that improve Quality Of Life (QOL), provides strength or resistance against the disease and also facilitate early recovery are classified under General Health Promoters such as

1. *Balya* (Tonic)
2. *Rasayana* (Immunomodulator)

(c). Vector control measures/agents

Vector control measures are mostly physical measures for environmental cleanliness.

1. *Dhoopana (for Fumigation)*
2. *Bhuthaghna & Rakshoghna (Anti microbial agents)*

(I) List of some single drugs can be used in Chikungunya fever -

(a). Symptom Modifiers

S. No.	Sankrit Name	Botanical Name
1.	Guduchi	<i>Tinospora cordifolia</i> Willd. Miers
2.	Sunti	<i>Zingiber officinale</i> Rosc.
3.	Bhunimba	<i>Andrographis paniculata</i> Linn.
4.	Patha	<i>Cissampelos pariera</i> Linn.
5.	Tulasi	<i>Ocimum sanctum</i> Linn.
6.	Nimba	<i>Azadirachta indica</i> A.Juss
7.	Haritaki	<i>Terminalia chebula</i> Retz.
8.	Vibhitaki	<i>Terminalia belerica</i> Roxb.
9.	Amalaki	<i>Emblca officinalis</i> Geartn.
10.	Manjishta	<i>Rubia cordifolia</i> Linn.
11.	Musta	<i>Cyperus rotundus</i> Linn.
12.	Katuki	<i>Picrorrhiza Kurroa</i> Royle ex. Benth
13.	Rasna	<i>Pluchea lanceolata</i> Oliver&Hiern
14.	Guggulu	<i>Commiphora wightii</i> (Arn.) Bhandari
15.	Haridra	<i>Curcuma longa</i> Linn.
16.	Sallaki	<i>Boswellia serrata</i> Roxb.
17.	Nirgundi	<i>Vitex negundo</i> Linn.

(b). General health Promoters

1. Aswagandha *Withania somnifera* Dunal
2. Amalaki *Emblca officinalis* Gaertn.

- | | | |
|----|------------|--|
| 3. | Guduchi | <i>Tinospora cordifolia</i> Willd. Miers |
| 4. | Yastimadhu | <i>Glycyrrhiza glabra</i> Linn. |

(c). Vector control measures

- | | | |
|----|-----------|---|
| 1. | Tulasi | <i>Ocimum sanctum</i> Linn. |
| 2. | Nimba | <i>Azadirachta indica</i> A. Juss |
| 3. | Aparajita | <i>Clitorea terneta</i> Linn. |
| 4. | Vacha | <i>Acorus calamus</i> Linn. |
| 5. | Jatamansi | <i>Nardostachys jatamansi</i> DC. |
| 6. | Guggulu | <i>Commiphora wightii</i> (Arn.) Bhandari |
| 7. | Salaparni | <i>Desmodium gangeticum</i> DC. |
| 8. | Sala | <i>Shorea robusta</i> Linn. |

(II). A. The commonly used Ayurvedic poly herbal/ herbo-mineral/ metallic formulations in the management of Chikungunya symptoms viz., fever, arthritis/ arthralgia, etc.,

S. No.	Indication	Name of the Formulation	Reference
1.	<i>Jeerna Jvara, Sannipata Jvara</i>	<i>Amritottara Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana,30</i>
2.	<i>Vata roga</i>	<i>Gandharvahastadi Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana 394</i>
3.	<i>Sannipata Jvara</i>	<i>Chinnodbhavadi Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana;38</i>
4.	<i>Parsva sula, Jvara</i>	<i>Dasamula Kvatha Curna</i>	<i>Bhaisajya Ratnavali Kasarogadhikara;13</i>
5.	<i>Jvara, Sannipata Jvara</i>	<i>Darunagaradi Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana;34</i>
6.	<i>Kapha Jvara</i>	<i>Nimbadi Kvatha Curna</i>	<i>Cakradatta, Jvara Chikitsa;101</i>
7.	<i>Jvara</i>	<i>Patoladi Kvatha Curna</i>	<i>Astangahridaya, Sutrasthana,15:15</i>

8.	<i>Jvara</i>	<i>Panchatikta Kvatha Curna</i>	<i>Cakradatta, Jvara Chikitsa;132</i>
9.	<i>Vata roga, Amavata</i>	<i>Rasnadi Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana;396</i>
10.	<i>Parva sophā,</i>	<i>Rasna erandadi Kvatha Curna</i>	<i>Sahasrayoga, Kashaya Prakarana;428</i>
11.	<i>Sandhi vedana</i>	<i>Maharasnadi Kvatha Curna</i>	<i>Sarangadhara Samhita, Madhyama Khanda Adhyaya- 2,89-91 ½</i>
12.	<i>Jvara</i>	<i>Sadanga kvatha Curna</i>	<i>Astangahridaya, Chikitsa Sthana 1:15 ½</i>
13.	<i>Sandhi sotha, Vata roga</i>	<i>Maha Yogaraj Guggulu</i>	<i>Sarangadhara Samhita, Madhyama Khanda Adhyaya- 7, 56-60</i>
14.	<i>Sandhi sotha, Vata roga</i>	<i>Yogaraj Guggulu</i>	<i>Bhaishajya Ratnavali Amavatadhikara 90-93</i>
15.	<i>Jvara</i>	<i>Sudarshan Curna</i>	<i>Bhaishajya Ratnavali Jvaradhikara 308-312 ½</i>
16.	<i>Jvara</i>	<i>Ananda bhirava Rasa</i>	<i>Rasendra Sara Samgraha Jvaradhikara, Adhyaya 2;103</i>
17.	<i>Jirna Jvara</i>	<i>Arogyavardhani Gutika</i>	<i>Rasaratna Samuccahaya Visarpadi Chikitsa Adhyaya 20;106-108</i>

(II).B Jvara hara Dhuma churnas described in Bhaishajya Ratnavali

1. Astanga Dhuma (Bhaishajya Ratnavali, Jvaradhikara, 254).

Guggulu, Nimba Patra, Vacha, Kushta, Haritaki, Yava, Sarsapa and Ghrita all mixed together and burnt.

2. Aparajitha Dhooma Curna (Bhaishajya Ratnavali, Jvaradhikara, 255)

Guggulu, Gandha trina, Vacha, Sarja, Nimba, Arka, Agaru, Devadaru mixed together and burnt.

(III). Commonly used Siddha formulations in the management of Chikungunya symptoms

(1). Fever:

1. Bramanandha Bairava Mathirai - Twice daily after meals
2. Linga Chenduram 100mg + Thrikadugu chooranam 1gm - Twice daily with honey after meals.

(2). Fever with Arthritis:

1. Vishnu Chakkara Mathirai - Twice daily after meals
2. Amukkara tablet - 1-3 times with hot water
3. Sivappu Kukkil Thylam - External Use
4. Karpoorathi thylam - External Use
5. Vatha sura Kudineer - 60 ml twice daily before Meals
(Equal quantity of 4 & 5, mix well and apply externally over the affected area)

6. Vatha Sura Kudineer

(3). Other Formulations

1. Nilavembu Kudineer - 60 ml twice daily before meals
2. Amukkara Chooranam - 1gm thrice daily with honey
3. Arumuga Chenduram - 100 mg thrice daily with honey

(4). Post Arthralgia condition

- | | | | |
|----|---|----------------------------------|-------------------------------|
| 1. | Arumuga Chenduram
Pavala Parpam
Naga Parpam
Amukkara Chooranam | 100 mg
50 mg
50 mg
1 gm | 2 times with honey after food |
| 2. | Gowri Chinthamani
Vasantha Kusumakara Maathirai
Thali sathi Chooranam | 100 mg
1 pill
1 gm | 2 times with honey after food |
| 3. | Chanda Maarutha Chenduram
Thrikaduku Coornam | 50 mg
1 gm | 2 times with honey after food |
| 4. | Ayaveera Chenduram
Sangu Parpam
Amukkara Chooranam | 50 gm
100 mg
1 gm | 2 times with honey after food |

External applications

1. Visha Musti Thailam
2. Vatha Kesari Thailam

2.6.Diet and Life style adoption

Ahara (Diet):

1. Always have home made fresh food, plenty of lukewarm liquids, light and warm diet, liberally use ginger and turmeric in foods
2. Always avoid food prepared under unhygienic conditions, contaminated and stale food, Cold drinks, beverage etc.,

Vihara (Life style):

1. Avoid visiting the disease prevalent areas
2. Proper sanitation measures to be followed.

Section-3

Prevention and Management

3. Prevention and Management

Treatment and Health care services provided by CCRAS Institutes, State Government AYUSH Departments and Central and State Siddha Institutes during Chikungunya out break

1. Central Research Institute (Panchakarma), Cheruthuruthy
2. Central Research Institute (Ayurveda), Gwalior
3. Regional Research Institute (Ayurveda), Bangalore
4. Regional Research Institute (Drug Research), Trivandrum
5. Directorate of Indian Medicine and Homoeopathy, Government of Gujarat
6. Government Research Department, Hyderabad
7. Department of AYUSH, Government of Karnataka
8. Indian Medicine and Homoeopathy Department, Chennai
9. National Institute of Siddha, Chennai
10. Governement Hospital Siddha Wing, Thiruchengodu
11. Government Siddha Medical College, Palaymkottai
12. Central Research Institute (Siddha), Chennai

3.1 Central Research Institute (Panchakarma), Cheruthuruthy

During the out break of Chikungunya in Lakshadweep, a tour was carried out by Dr. P. K. S. Nair, Research Officer (Ayurveda), Central Research Institute (Panchakarma), Cheruthuruthy, CCRAS, Dr. C. S. Aggrawal, Joint Director, National Vector Borne Disease Control Program, Dr.G.Gopinathan, Research Officer (Homoeopathy), Central Research Institute (Homoeopathy), Kottayam, Kerala, Dr. P. Philip Samuel, Research Scientist and Mr. R. Krishnamoorthi, Research Assistant, Centre for Research in Medical Entomology (CRME), ICMR to conduct medical camp in Lakshadweep during 12th to 16th December 2006.

The Centre for Research in Medical Entomology (CRME), a premier laboratory of the Indian Council of Medical Research (ICMR), Madurai has detected an unusual virus that caused Chikungunya in the Lakshadweep islands during 2006-07. The CRME has alerted the Lakshadweep health authorities to take steps to protect the people there from getting affected and also prevent mosquitoes from proliferating further. The team of scientists that conducted detailed investigation on mosquito samples collected from Lakshadweep concluded that the virus had "R 20; deviant" genetic profile compared to the Central East African virus that spread chikungunya in Tamil Nadu last year. (The HINDU 22 August 2007)

Total 353 patients were screened and treated in various parts of the Island, and the breakup of the same is given below:

Name of the Place	Anthroth	Chemmachery	Kalpeni
No. of Patients treated	181	99	73

Table- 4 - The details of the cases attended Anthroth medical camp 12/12/2007

S.No	Clinical condition	Adult		Children		Total Male	Total Female	Total
		Male	Female	Male	Female			
1.	Jvara (Fever)	11	6	4	6	15	12	27
2.	Sandhi sula (Tenderness in Joints)	104	127	3	3	107	130	237
3.	Sandhi sophia (Sweeling in Joints)	1	8	0	1	1	9	10
4.	Visarpam (Skin rash)	4	6	0	0	4	6	10
5.	Kasa and Swasa (Cough and Dysponea)	0	4	0	1	0	5	5
6.	Daurbalya (Weakness)	2	4	1	0	3	4	7
7.	Sira sula (Headache)	4	4	0	0	4	4	8
8.	Other	17	22	0	2	17	24	41
TOTAL		143	181	8	13	151	194	345

Table -5 Details of the patients attended Kalpeni medical camp on 15/12/2006

S. No.	Clinical condition	Adult		Children		Total Male	Total Female	Total
		Male	Female	Male	Female			
1.	Jvara(Fever)	2	1	1	1	3	2	5
2.	Sandhi sula (Tenderness in Joints)	27	13	1	0	28	13	41
3.	Visarpam (Skin rash)	2	0	0	0	2	0	2
4.	Other	15	10	0	0	15	10	25
TOTAL		46	24	2	1	48	25	73

The patients were given treatment based on clinical symptoms such as fever, arthralgia/ arthritis, skin rashes, fatigue, head ache and respiratory symptoms like cough and dyspnoea. They were also provided “**Aparajita Dhuma Churna**” - a mosquito repellent for fumigation, manufactured by Oushadhi Pharmaceuticals, Government of Kerala.

List of Ayurvedic medicines given to the Chikungunya patients based on symptoms during the camp at Lakshadweep:

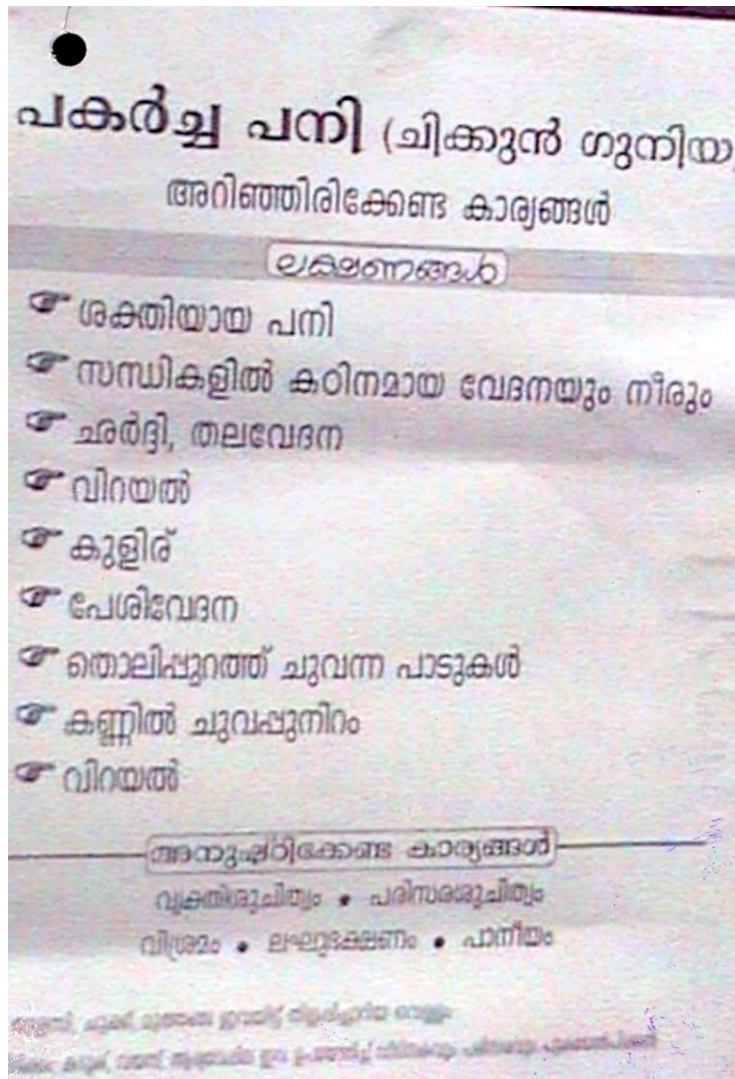
S.No.	Symptom/Sign	Medicines Prescribed
1.	Jvara (Fever)	1. Amruthottara Kwatha Curna 2. Indukantha Kwatha Curna 3. Vettumaran gutika 4. Sudharshana gutika
2.	Sandhi sula/ Sandhi Sotha (arthralgia/ arthritis)	1. Rasna Saptaka Kwatha Curna 2. Punarnavadi Kwatha 3. Vettumaran gutika 4. Jadamayadi Lepam (External application)
3.	Visarpam (Skin rash)	1. Guduchyadi Kwatha Curna 2. Bilwadi Gutika 3. Haridra Khanda Curna
4.	Daubarya (Weakness)	1. Indukantha Kwatha Curna 2. Vettumaran gutika
5.	Sirasula (Headache)	1. Indukantha Kwatha Curna 2. Amruthottara Kwatha Curna 3. Sudharshana gutika
6.	Kasa, Swasa (Cough and Dyspnoea)	1. Indukantha Kwatha Curna 2. Haridra Khanda Curna 3. Vettumaran gutika



Government Hospital, Kalpeni, Lakshadweep, Medical camp arranged on 15/12/2006



Consultation services at Community Health Centre, Anthroth on 12/12/2006



Wall poster pasted in public places to create awareness on Chikungunya

Central Research Institute for Panchakarma, Cheruthuruthy has conducted a OPD based study in Chikungunya patients. Patients complaining fever, head ache, general weakness, abdominal colic, pain and swelling in joints and skin rashes were administered with one of the following drug regimen for 15 days.

Group I:

1. Amrutotharam Kwatha Churna 150 gm. (to prepare kwatha 60 ml. thrice daily)
2. Tribhuvanakeerthi rasa - 21 Nos. 1 tablet thrice daily
3. Vilwadi gutika- 21 Nos. 1 tablet thrice daily
4. Sudarsana - 21 Nos. 1 tablet thrice daily

Group II:

1. Rasna Saptakam kwatha Churna- 150 gm. (To prepare kwatha 60 ml. thrice daily)
2. Sudarsanam Tab.- 21 Nos. 1 tablet thrice daily
3. Vettumaran gutika- 21 Nos. 1 tablet thrice daily
4. Arogyavardhini Vati-21 Nos. 1 tablet thrice daily
5. Kottamchukkadi lepa Churna-100 gm. for external application, where swelling dwells)

Patient were treated with Group I during pyrexial state and with group-II drug regimen during post pyrexial phase.

Table 6 Details of the patients treated with the two drug regimens

Age (yrs)	Group I	Group II
10-19	2	7
20-29	3	8
30-39	2	38
40-49	4	46
50-59	5	32
60-69	0	33
70-79	0	10
80-89	0	4
Total	16	178

Total patients treated with group-I and group-II were 16 (male 6 and female 10) and 178 male-57 and female 121) respectively.

Results were assessed based on the improvement in signs and symptoms. 75% or more is considered as good response; 50-74 % relief is fair response ;25-49% relief is poor response and 24% and below is no response.

Out of 16 patients treated with Group-I, one patient showed good response, 2 patients showed fair response, 1 patient showed poor response and remaining 12 patients were dropped out. Patients treated with Group-II (n=178), 22 showed good response, 59 showed fair response, 34 showed poor response, 11 showed no response and 52 patients were dropped out.

Arogya vardahni Vati is also administered as an adjuvant to prevent the complications like pancreatitis, liver disease and diabetes.

3.2 Central Research Institute (Ayurveda), Gwalior:

The patients attending the Out Patient Department (OPD) of Central Research Institute (Ayurveda), Gwalior were screened for Chikungunya fever based on signs and symptoms and appropriate treatment was advised. Patients presenting with fever, chills and rigors, etc. are screened to rule out malaria by testing the presence malarial parasite in their blood smear.

Central Research Institute (Ayurveda), Gwalior has organized free medical camps during 25th, 26th September 2006 at City Campus, Gwalior and during 16th, 18th and 19th October 2006 at Nakachandravadani, Thatipur and Gandhi Nagar respectively. 154 Patients were provided with free medicines during camp in September whereas 854 patients in October 2006.

Total 478 new cases and 255 old cases have attended Out Patient Department of Central Research Institute (Ayurveda), Gwalior.

Table-7 Details of the probable Chikungunya patients attended Out Patient Department of CRI (A), Gwalior,

CATEGORY	MONTH	Male	Female	Male child	Female child	Total
OLD PATIENTS	September 2006	52	49	02	04	107
	October 2006	72	71	01	04	148
	TOTAL	124	120	03	08	255
NEW PATIENTS	September 2006	110	69	10	07	196
	October 2006	155	117	05	05	282
	TOTAL	265	186	15	12	478

The following Ayurvedic formulations administered to the probable cases of Chikungunya patients based on their clinical presentation.

S. No.	Name of the formulation	Major Therapeutic usage
1.	Tribhvana Keerthi Rasa	All types of fevers and Sannipata Jvara
2.	Sanjeevani Vati	Vishahara, Amajeerna
3.	Sudarshana Curna	Tridosha hara, all types of fevers, knee pain, pain in small joints and backache and lumbago.
4.	Sudarshana Ghana Vati	Jvara
5.	Guduchi Satwa	Jvara
6.	Amritarishta	Jvara and Vishama Jvara
7.	Rasna Curna	Kaphavata hara, ama pachana, vatahara, shula hara
8.	Nimbadi Curna	Amavata, Vata rakta, Kushta
9.	Yogaraja Guggulu	Tridosha hara, Rasayana, all types of Vata roga, mandagni and in aruchi.
10.	Simhanada Guggulu	Khanja, Pangu, Amavata, Vatarakta, Kushta
11.	AYUSH BL taila	Vatarogadhikara
12.	AYUSH 64 tablet	Vishamajvara and Jvara
13.	Vishamushti Vati	Vata Jvara
14.	Agnitundi Vati	Agnimandya and Amajvara

Apart from medical camps, Central Research Institute (Ayurveda), Gwalior has also carried out OPD based study to evaluate the efficacy of above formulations (S. No. 1-14) in probable cases of Chikungunya fever. Patients satisfying the inclusion criteria viz., multiple joint pains, fever, skin rash, headache and anorexia were enrolled in the study and received medication; however, patients presented with malaria, dengue and typhoid fever were excluded from the study.

Total number of patients received treatment was 636 and patients were advised to follow up at every week upto 4 weeks. Results were assessed based on severity of pain in joints and fever. Pain and other signs and symptoms were graded as +++ for severe, ++ for moderate, + for mild, 0 for absent.

The following observations were made:

The incidence of Chikungunya was more in the age group between 46-60 years (n=233) and less in the age group between 0-15 years (n=40). Whereas 161 patients were seen in age group between 16-30 years and 202 patients were seen in age group between 31-45 years. It was also observed that female patients were lesser than male.

The maximum number of patients (n=282) visited OPD in the month of October 2006 and minimum number of patients (n=26) in the month of December 2006. However 196 visited in September 2006 and 132 in November 2006.

The presence of signs and symptoms in these patients are given below.

Table – 8a. The presence of signs and symptoms

S. No.	Signs and symptoms	Presence of signs and symptoms				
		Before Treatment				
		+++	++	+	0	Total
1.	<i>Jwara</i>	156	200	154	-	410
2.	<i>Sandhi Shoola</i>	254	316	45	-	615
3.	<i>Sandhi Shotha</i>	-	-	272	-	272
4.	<i>Kandu</i>	-	-	53	-	53
5.	<i>Arochaka</i>	-	-	120	-	120
6.	<i>Shirah Shoola</i>	-	-	154	-	154

Out of 636 patients, 162 patients reported for follow up and the details are mentioned below.

The results indicated that 47% of patients reported relief from the *Sandhishoola* (joint pain), 85% patients reported relief from the *Jwara*, 93% of patients reported relief from the *Sandhishotha* (joint swelling) during their follow up.

Table – 8b. Improvement in signs and symptoms before and after treatment.

S. No.	Signs and symptoms	Assessment of symptoms									
		Before Treatment					After Treatment				
		+++	++	+	0	Total	+++	++	+	0	Total
1.	<i>Jwara</i>	18	47	44	-	109	00	02	14	93	109
2.	<i>Sandhi Shoola</i>	73	77	12	-	162	03	14	69	76	162
3.	<i>Sandhi Shotha</i>	-	-	81	-	81	-	-	06	75	81
4.	<i>Kandu</i>	-	-	18	-	18	-	-	-	18	18
5.	<i>Arochaka</i>	-	-	34	-	34	-	-	-	34	34
6.	<i>Shira Shoola</i>	-	-	37	-	37	-	-	-	37	37

3.3 Regional Research Institute (Ayurveda), Bangalore and Advance Research Unit, Bangalore

Regional Research Institute (Ayurveda), Bangalore and Advanced Research Unit Bangalore had treated about 488 probable cases of Chikungunya patients during 04/07/2008 to 18/07/2008 . Patients were selected on the basis of presence of fever, pain and swelling in joints, skin rash and cough. Out of 488, patients were treated with Group-I (n=385) and Group-II (n=103) drug regimens. The details of the drug regimens were given below:

Group-I Drug Regimen

1. Sanjeevini Vati 100mg twice daily
2. Sudarshana Ghana Vati 500mg thrice daily
3. Amrutharishta 30 ml twice daily

Group-II Drug Regimen

1. Sanjeevini Vati 100mg twice daily
2. Trayodashanga Guggulu 500 mg thrice daily
3. Maha Rasnadi Kvatha 45 ml twice daily.

Both the drug regimens were administered with hot water for 15 days. Results showed, patients treated with Drug Regimen-I (n=385), 176 patients were cured, 96 showed marked improvement, 58 showed moderate improvement, 27 showed no improvement and 18 were withdrawn the therapy. Rest of the patients data is not available. Patient treated with Drug Regimen-II (n=103), 51 patients were cured, 21 showed marked improvement, 11 showed moderate improvement, 8 showed no improvement and 12 were withdrawn the therapy.

Two patients reported vomiting in Group-I and one reported dizziness in Group-II. None severe adverse reactions observed during the therapy and follow up period.

3.4 Regional Research Institute (Drug Research), Trivandrum

Probable cases of Chikungunya patients attending Out patient Department of Regional Research Institute (Ay), Trivandrum were administered a combination of **Amritarishta** (30 ml), **Vettumaran Gutika** (1 tablet), **Amruthotharam Kashayam** (60 ml), **Sudarshana Vati** (1 tablet) thrice daily. Patients were put on rice gruel diet and Shandangapaneeyam for drinking. In some cases, where cough was reported, patients were advised **Talisa Patra Curna** and **Dhanwandaram Gutika** thrice daily.

With above therapy fever has come down within 5-7 days, however in the presence of persistent pain and swelling in joints patients were administered with a drug regimen consists

of **Punarnavadi Kashaya** (60 ml), **Yogaraja Guggulu** (1 tablet), **Cheriya Rasnadi Kashaya** (60 ml) thrice daily and **Nagaradi lepa** for external use. Treating Physicians reported that with the above treatment 90% of the cases got complete relief.

3.5 Directorate of Indian Medicine & Homoeopathy, Government of Gujarat

During the Chikungunya out break, the Directorate of Indian System of Medicine and Homoeopathy, Department of Health and Family welfare, Government of Gujarat has organized several curative and preventive medical camps which covered 25 districts across the state. The details of the camps organized from 27/08/2006 to 14/11/2006 are given below.

Nature of Camp	Total Number of Camps Conducted	Total Number of beneficiaries
Preventive Camps	1403	48,88,103
Curative camps	181	2,81,000
Total	1584	51,69, 103

During Preventive camps, patients were advised "**Swasthya Raksha Amruta Peya**" prepared by using the decoction of **Guduchi** (*Tinospora cordifolia*), **Nadod** (*Vitex negundo*) **Nimba** (*Azadirachta indica*), **Tulasi** (*Ocimum sanctum*), **Sunthi** (*Zingiber officinale*), **Kariyatu** (*Andrographis paniculata*), **Nagarmoth** (*Cyperus rotundus*), **Pathyadhi Kvatha**, **Guduchyadi Kvatha** and **Maha Sudarshana Curna**. The dose of the **Swasthya Raksha Amrut Peya** is 50 ml twice daily for 7 days.

During Curative camps, the probable cases of Chikungunya patients were advised **Mahasudarsana Ghana Vati**, **Samshamani Vati**, **AYU - 64**, **Kanchanara Guggulu** and **Pathyadi Guggulu** for 7 days with **Swasthya Raksha Amruta Peya**.

A very good response was observed in both curative and preventive cases. The details of the districts and number of the people benefited with **Swasthya Raksha Amrut Peya** during the preventive and curative camps are listed in Table-6.

Table - 9 Number of beneficiary received Swasthya Raksha Amrut Peya in districts of Gujarat State.

S. No.	Name of the District	Name of the Organization	Number of the Centre	Total number of beneficiaries
1.	Ahmedabad	District Ayurved Officer, Ahmedabad Smt. Maniben Ayurved Hospital, Ahmedabad.	37 13	265053 131350

		Akhandanad Ayurved Hospital, Ahmedabad.	35	16227
2.	Amreli	District Ayurved Officer, Amreli Government Ayurved Hospital, Amreli	12 05	23840 3090
3.	Anand	District Ayurved Officer, Anand Government Ayurved Hospital, Ankalav Government Ayurved Hospital, Khambholaj	271 03 17	773396 131202 148040
4.	Banaskantha	District Ayurved Officer, Banaskantha Government Ayurved Hospital, Vadagam	47 06	328818 6424
5.	Bharuch	District Ayurved Officer, Bharuch	38	57311
6.	Bhavanagar	District Ayurved Officer, Bhavanagar Government Ayurved Hospital, Bhavnagar Government Ayurved Hospital, Talaja	26 11 10	52251 50121 30219
7.	Panchmahal	District Ayurved Officer, Panchmahal Government Ayurved Hospital, Popatpura	136 105	28780 118303
8.	Jamnagar	District Ayurved Officer, Jamnagar Gulabkuvarba Ayurved Hospital, Jamnagar. Government Ayurved Hospital, Jodiya	05 04 05	24972 8394 10906
9.	Junagadh	District Ayurved Officer, Junagadh Government Ayurved Hospital, Junagadh	30 28	38918 23458
10.	Kachchh	District Ayurved Officer, Kachchh Government Ayurved Hospital, Bhuj	34 03	141190 71189
11.	Kheda	District Ayurved Officer, Kheda J.S. Mabavidhyalaya. Nadiyad Government Ayurved Hospital, Pipalata Government Ayurved Hospital, kapadvanj	27 03 03 07	424303 29847 65957 7899
12.	Mahesana	District Ayurved Officer, Mahesana Government Ayurved Hospital, Unja	27 27	40147 46840
13.	Narmada	District Ayurved Officer, Narmada	14	68543
14.	Patan	District Ayurved Officer, Patan Government Ayurved Hospital, Patan Government Ayurved Hospital, Siddapura	32 10 03	51511 92366 35238

15.	Porbandar	District Ayurved Officer, Porbandar	07	40342
16.	Rajkot	District Ayurved Officer, Rajkot	23	70212
		Government Ayurved Hospital, Rajkot	04	13588
		Government Ayurved Hospital, Morbi	40	90388
17.	Sabarkantha	District Ayurved Officer, Sabarkantha	28	107347
		Government Ayurved Hospital, Himmatnagar	25	838749
18.	Surat	District Ayurved Officer, Surat	46	68252
19.	Vadodara	District Ayurved Officer, Vadodara	160	294101
		Government Ayurved Hospital, Vadodara	06	48639
20.	Valsad	District Ayurved Officer, Valsad	17	42145
		Government Ayurved Hospital, Bilimora	09	37590
21.	Dahod	District Ayurved Officer, Dahod	20	36624
		Government Ayurved Hospital, Devagadhbariya	03	8590
		Government Ayurved Hospital, Limdi	33	90971
22.	Navasari	District Ayurved Officer, Navasari	04	5860
		Government Ayurved Hospital, Vijalpor	04	7743
23.	Gandhinagar	Government Ayurved Hospital, Gandhinagar	07	24664
		Government Ayurved Hospital, Lodara	01	392
24.	Ahwa	Government Ayurved Hospital, Ahwa	20	23585
25.	Surendra Nagar	Government Ayurved Hospital, Surendranagar	25	80395
TOTAL			1516	52,49,280

3.6 Government Research Department, Hyderabad.

During April to December 2006, The Government Research Department of Dr. B. R. K. R. Government Ayurvedic Medical College, Hyderabad has treated about 3400 probable cases of Chikungunya patients with a combination of *Jvara hara Kashaya, Mruthyunjaya rasa* and *Kanchanara Guggulu*. The Above combination showed a very good response in the cases treated. The department has also prepared a formulation called *Chintamani* and supplied in capsule form to the patients with Post Chikungunya status. The composition, preparation, dose and mode of administration of the *Jvara hara Kashaya* and *Chintamani* capsule are mentioned below.

(i). **Jvara Hara Kashaya**

(a). **Ingredients**

1. Kirathatikta (*Andrographis paniculata*)
2. Musta (*Cyperus rotundus*)
3. Parpataka (*Fumaria parviflora*)
4. Guduchi (*Tinospora cordifolia*)

(b). **Method of preparation:** The above ingredients are coarsely powdered taken in equal quantities and Kwath Curna is prepared. 10 g of Kvatha Curna is boiled in 4 glasses of water and reduced to one fourth.

(c). **Dose** : 150 ml twice daily.

(ii). **Chintamani capsule** (for Post Chikungunya status)

(a). **Ingredients**

1. Jvara Hara Kashaya - 5 Parts
2. Trikatu (*Sunthi+Marica+Pippali*) -1 Part
3. Katuki (*Picrorrhiza kurroa*) -1 Part
4. Shodita Vishamushti (*Strychnos nuxvomica*) -1 Part

(b). **Method of preparation:** The above ingredients are powdered and filled in 500 mg. capsule.

(c). **Dose:** 1 capsule twice or thrice daily.

Table-11 Details of patients treated with *Jvara hara Kashaya* and *Chintamani* Capsule during April 2006 to December 2006.

S. No.	Month	Male	Female	Old Cases	Total Number of Patients
1.	April '06	240	205	17	462
2.	May '06	182	217	122	521
3.	June '06	381	273	62	716
4.	July '06	303	354	28	585
5.	August'06	241	184	11	436
6.	September '06	175	153	57	385
7.	October '06	75	64	28	167
8.	November'06	56	42	16	114
9.	December'06	06	05	0	11
TOTAL		1659	1497	341	3497

3.7 Department of AYUSH, Government of Karnataka:

The State Government AYUSH Department of Karnataka has extensively worked during the Chikungunya outbreak. About 35 Government Ayurvedic dispensaries/ hospitals working under Department of AYUSH has actively engaged in patient care, patient education, community education which includes vector control measures, disease prevention and protection from the disease, organizing various preventive and curative medical camps. Common Public and Patients visiting the Government Ayurvedic dispensaries / hospitals were provided with suitable prophylactic and curative measures. Many number of patients were benefited with Ayurvedic formulations (for both internal and external use) and dietary specifications. They were also provided with herbal mosquito repellents.

The details of the Ayurvedic formulations administered as preventive and curative treatment during the outbreak of Chikungunya in different Government Ayurvedic dispensaries/ hospitals in Karnataka are given below.

1. *Amrita Guggulu and Rasnadi Curna*

Amrita Guggulu and *Rasnadi Curna* with *Ardra Swarasa* was administered to the people and the probable cases of Chikungunya patients attending Government Ayurvedic Dispensaries at Srinivasa Puram, Shivarpatna, Seesandra, Chintamani, Ambukkai of Kolar district of Karnataka as prophylactic and curative treatment.

Total 365 people administered *Amrita Guggulu* and *Rasnadi Curna* as prophylaxis and 302 are served as controls. Out of 365, 61 have developed disease after prophylaxis and all 302 controls developed the disease.

Total 365 Chikungunya patients were received *Amrita Guggulu* and *Rasnadi Curna* with *Ardra Swarasa* as anupana for 5 - 42 days and followed up for 3-6 months. Out of 365, 244 patients are cured, 13 showed marked improvement, 38 showed moderate improvement, 18 showed no response and 1 reported worsening of the condition. The details of the other cases are not available. The treating physicians opined that the above treatment has improved the immunity (Table-12).

2. *Amrita Guggulu, Sudarshana Curna and Amritarishta*

Probable cases of Chikungunya patients attending Government Ayurvedic Hospital, Chintamani were administered *Amrita Guggulu* (2 tablets twice daily), *Sudarshana Curna* (2 g twice daily) and *Amritarishta* (30 ml twice daily). Total 100 patients were administered above treatment for a period of 7-40 days. Out of 100, 90 patients were cured, 5 showed moderate improvement and 5 were referred to other hospitals. None reported adverse reaction to the above medication.

3. Amritarishta and Yogaraj Guguulu

The common public and patients attending the Government Ayurvedic Dispensaries at Timmana (Dist.Hosur), Gunadal, Kanabur, Kerutagi, Hebbal and Balabitti of Bijapur district of Karnataka were administered **Amritarishta** and **Yogaraj guggulu** (2 tablets thrice daily) with milk as both prophylactic and curative measure. Total population covered was 5100, Prophylaxis received by 680 and 648 were served as controls. Total 245 probable cases of Chikungunya patients received the treatment, of which 110 cured, 5 showed marked response whereas 60 showed moderate response. The data regarding response of other patients is not available. **Amavatari vati** (2 tablets thrice daily), **Rasna erandadi kvatha**, **Arogya vardhani vati** were also co-administered in dispensaries of Hebbal, Kanaboor and Timmania villages respectively. The treating physicians admitted that the above treatment has significantly reduced the fever and body pains as well as improved the resistance towards to the disease. The joint pains and joint swelling persisted for 2 months. However 20 patients at the Kerutagii dispensary and 18 at Balabitti had complained hyperacidity with above treatment. (Table-13).

4. Amrita Sattva, Godanti Misrana and Guggulu

Twenty probable cases of Chikungunya patients were treated with **Amrita Sattva**, **Godanti Misrana** and **Guggulu** with honey twice daily for 5 days and Kanaka taila (for external application) at Government Ayurvedic hospital, Niduvalli, Chikmagalur district. The patients were followed up for 1 month. Out of 20, 5 patients were cured, 8 showed marked improvement, 3 showed moderate improvement. Absolutely no improvement was seen in 3 patients and whereas 1 was withdrawn. No adverse events were reported.

5. Sanjivani Vati and Guduchi

Extensive work has been carried out by Government Taranath Ayurvedic College & Hospital, Bellary during Chikungunya out break. They have covered 5 lakhs population including from the borders of Andhra Pradesh also. **Sanjivani Vati** (2 tablets twice daily) was administered as preventive and curative measure.

Total 600 people were administered **Sanjivani Vati** (2 tablets twice daily) for 4 weeks and **Amrutha Swarasa** 15 ml once daily in the morning for 12 weeks as prevention (till the epidemic subsides). 5 out of 600 developed disease after taking prophylaxis. 55 served as controls and 30 developed disease later. **Sanjevani Vati** at the dose of 2 tablets twice daily for a period of 2-8 weeks was employed as curative treatment in the probable cases of Chikungunya patients. Patients and people were also advised some dietary specifications such as intake of hot water, **Sunti** and **Lasuna swarasa** 10 ml with 20ml of honey, and to avoid cool drinks, curd, oil and spicy foods and these patients were also advised to practice regular Pranayama and Yogasana. Physician opines that the effect of Pindataila in pain and stiffness of joints were better when compared to NSAIDS.

Apart from **Sanjivani Vati**, physicians also prescribed other drugs like **Tribhuvana Keerthi rasa**, **Hinguleshwar Ras**, **Samshamani Vati**, **Bhallataka Vati**, **Nityananda Ras**, **Jayamangala Ras**,

Mahamrithyunjaya Rasa, Amritadi Guggulu along with some formulations as *anupana* such as **Amrottara Kashaya, Maha Rasnadi Kashaya, Rasna erandadi Kashaya, Rasna Dashamoola Kashaya, Maha Sudarshana Kadha** etc. The dose of above mentioned Vati is being 1 tablet thrice daily and dose of decoction is 20 ml thrice daily for period of 2-8 weeks. The treating physicians commented that the intake of **Guduchii Swarasa** everyday was followed by many people and **Sanjivani Vati** (2 tablets Twice daily with hot water) was taken by all the people who are involved in the study/project such as hospital staff.

6. Amritarishta, Vasakasava, Anadabhairavi Ras, Arogya vardhani Vati

During June 2006 to May 2007, the Government Ayurvedic Hospital, Hassan has covered 8 talukas and 26-27 thousands population. Total 10,431 people received **Amritarishta** (10ml), **Vasakasava** (10 ml), **Anadabhairavi Ras** (2 tablets thrice daily), **Arogya vardhani Vati** (2 tablets thrice daily) for 3 days as preventive measure. Duration of follow up was 5-7 days and the total cases followed up were 5100. Physicians opined that the Ayurvedic medicines were highly effective in the prevention of Chikungunya. The same combination was also administered as curative treatment, the number of cases treated were not mentioned, but details regarding the improvement were 23% showed marked improvement, 30% showed moderate, 18% showed no improvement, 3% showed worsening of the disease.

7. Amritha and Sunthi Kashaya

Amritha (*Tinospora cordifolia*) stem 6-8" and **Sunthi** (*Zingiber officinalis*) rhizome 20g were boiled with water and reduced to one fourth. This decoction at the dose of 30ml thrice daily for one week is administered as preventive measure for Chikungunya at Government Ayurvedic Dispensaries (15 villages of Mandya districts). Around 7100-7350 people received above treatment as prophylaxis; out of them, around 535-625 developed the disease. The treating physicians opined that the intake of *Guduchi* and *Shunti* decoction thrice daily has improved the immunity and people who were already on medication were able to withstand the joint pains if they are affected with Chikungunya later (Table-14).

8. Yogaraja guggulu, Jvarakesari Pills, Guducgyadi Kashaya

Yogaraja Guggulu (2 tablets thrice daily) and **Jvarakesari** pills (2 tablets thrice daily) with **Guduchyadi Kashaya** (as *anupana*) before food is administered as curative treatment to the probable cases of Chikungunya patients attending the Government Ayurvedic Dispensaries of Mandya district. Patients are provided with **Aswagandha Bala Lakshadi Taila** for external application. Patients were diagnosed on the basis of clinical presentation. The duration of treatment is 7 to 10 days. Around 3477-3569 patients were treated with above drug regimen and about 605-700 were followed up; Improvement was assessed based on subjective parameters. Out of above patients around 985-1015 cured, 1090-1152 showed marked improvement, 569 to 615 showed moderate improvement and 205-260 had no improvement. Physicians reported that the patients treated with above drug regimen have shown early recovery. Fever and body pains improved within 2 to 3 days of treatment but joint pains persisted for 2 to 3 months. None reported adverse events (Table-15).

Table- 12 showing the details of the cases received Amrita Guggulu and Rasnadi Curna

S.No.	Name of the Government Ayurvedic Dispensary /Hospital Kolar District	Total population covered	No. of Cases treated as Prophylaxis	No. of Cases developed disease after Prophylaxis	No. of cases treated as controls	No. of controls developed disease	No. of cases treated	Results			
								Cured	Marked Improvement	Moderate Improvement	No Improvement
1.	Srinivasa Puram	550	30	6	22	22	30	24	*	2	4
2.	Shivarpatna	860	40	8	32	32	40	32	*	2	6
3.	Seesandra	2000	70	10	60	60	70	50	3	9	8
4.	Chintamani	1-2 Lakhs	165	33	132	132	165	132	8	25	*
5.	Ambukkai	1580	60	4	56	56	60	56	02	*	*
TOTAL		104990-204990	365	61	302	302	365	244	13	38	18

Table-13 showing the details of the cases received Amritarishta and Yogaraj Guggulu

S.No.	Name of the Government Ayurvedic Dispensary/Hospital District	Total population covered	No. of Cases treated as Prophylaxis	No. of Cases developed disease after Prophylaxis	No. of cases treated as controls	No. of controls developed disease	No. of cases treated	Results			
								Cured	Marked Improve	Moderate Improve	No Improve
1.	Timmanna	1600	60	*	40	*	*	*	*	*	*
2.	Gunadal	3500	105	*	100	*	*	*	*	*	*
3.	Kanaboor	*	290	*	280	*	*	*	*	*	*
4.	Kerutagi	*	115	*	120	*	115	50	*	30	*
5.	Hebbal	*	*	*	*	*	20	15	5	*	*
6.	Balabitti	*	110	*	108	*	110	45	*	30	*
TOTAL		5100	680	*	648	*	245	110	5	60	*

{* Information Not Available }

Table- 14 showing the details of cases received Amrita and Sunthi Kashaya as Prophylaxis

S.No.	Name of the Government Ayurvedic Dispensary/ Hospital District	Duration Of Follow up	Total population covered	No. of Cases treated as Prophylaxis	No. of Cases developed disease After Prophylaxis	No. of cases treated as controls	No. of controls developed disease
1.	K.K.Pet	*	6000	100	*	*	*
2.	Mandya	Sept-Nov'06	2 lakhs	130	65	*	*
3.	Dudda Dist	June-Sept.'06	10000	150	75	*	*
4.	Muttegere	June-Oct '06	6000	100-200	30-50	*	*
5.	Dudda	June-Oct'06	2000-2500	100-150	40-50	*	*
6.	Kannali	June-Sept'06	-	100	50	*	*
7.	Taggali	June-Dec '06	-	120	-	80	*
8.	K.R.Pet	June-Oct'06	-	150-200	40-50	*	*
9.	Hosgiri	June-Oct'06	5000	120		*	*
10.	K.R.Pet	June-Oct'06	4,700	250-300	45	*	*
11.	Doddpalya	June-Oct'06	5500	160	40	*	*
12.	Hosaholalu K.R.Pet	June-Oct'06	7,000	300	50	*	*
13.	Adichoanagiri Mandya Dist.	Aug-Dec'06	-	5000	*	*	*
14.	Maddur	June-Oct'06	70,000	220	*	*	*
15.	Yadagahalli	Aug-Nov'06	2500	100-150	100-150	60-70	*
TOTAL		-	~ 318700 to 319200	~7100 to 7350	~ 535 to 625	~ 140 to 150	*

[* information not available ; ~ Approximately]

Table: 15 showing the details of cases received *Yogaraj Guggulu, JvaraKesari* and *Guduchyadi Kashaya* as Curative treatment.

S.No.	Name of the Government Ayurvedic Dispensary/ Hospital District	Duration of Treatment	No. of cases treated	No. of cases followed up	Results			
					Cured	Marked Improvement	Moderate Improvement	No Improvement
1.	K.K.Pet, Madya District	June-Sept'06	100	*	*	97	*	*
2.	Mandya District	Sept-Nov'06	272	60-80	-	50-60	80-90	50-60
3.	Dudda	June-Sept'06	132	55	25-30	35-40	*	*
4.	Muttegere	June-Oct '06	200-210	80-100	20-25	20-22	10-12	*
5.	Dudda	June-Oct'06	150-152	40-45	*	20-25	20-25	10-15
6.	Kannali	June-Sept'06	50	50	*	20-25	20-28	30-50
7.	Taggali	June-Dec'06	80	-	30	20	10	
8.	K.R.Pet	-	350-400	100-150	50	25-30	100-150	-
9.	K.R.Pet	June-Oct'06	70-100	*	*	20-25	20-25	10-15
10.	Hosgiri	June-Sept.'06	120	*	*	*	60-80	30-40
11.	Mandagiri	June-Oct'06	300	*	180	50	60	10
12.	Doddapalya	June-Oct'06	300	*	160	80	45	15
13.	Hosaholalu	June-Oct'06	500	*	340	90	60	10
14.	K.R.Pet	June-Oct'06	483	*	*	483	*	*
15.	Maddur	June-Sept.'06	220	220	180-200	70-85	*	*
16.	Yadaganahalli	Aug-Nov'06	150	*	*	10-20	20-30	40-45
TOTAL			~3477 to 3569	~605 to 700	~985 to 1015	~1090 to 1152	~595 to 615	~205 to 260

[* Information Not available ; ~ Approximately]

3. 8 Indain Medicine and Homoeopathy Department, Chennai

Indain Medicine and Homoeopathy Department, Chennai conducted special camps for the treatment of Chikungunya from 25/09/2006 to 09/10/2006 in participation and under overall supervision of Directorate of Public Health and Preventive Medicine, Chennai. Camps were conducted at all levels of Districts, Taluka and Primary Health Centers and patients were provided with Siddha and Ayurvedic combinations of medicine, prepared by Government Pharmacay and supplied through by TAMPCOL, Chennai. There are 2 types of drug regimens administered based on the course of the disease i.e., pyrexial state (3 to 5 days) and post pyrexial state.

The drug regimen administered to patients in pyrexial state

1. Thridosa Mathirai 1-2 pills twice daily with honey
2. Sudarshana Churna 1 g twice daily with honey
3. Nilavembu Kundineer 15-30 ml twice daily
4. Pinda tailam and Karpooradi tailam For external use

The drug regimen administered to patients in post-pyrexial state

1. Ayaveera Chenduram 100 mg
2. Sudarshana Churna 1 g twice daily with honey
3. Nilavembu Kundineer 15-30 ml twice daily
4. Pinda tailam and Karpooradi tailam For external use

Total number of probable cases of Chikungunya patients treated with above drug regimen were 95,968 as on 21st November 2006 and 24,397 on subsequent period.

3. 9 National Institute of Siddha, Chennai

Probable cases of Chikungunya patients visiting Out Patient Department of National Institute of Siddha, Chennai during 30/09/2006 to 26/12/2006 were administered with the following drug regimen mentioned below. Total 5538 patients received the treatment

1. Brammananda Bairavam Mathirai 100-200 mg tablet thrice daily with honey / hot water
2. Ammukkara Chooram 500mg-1 g tablet thrice daily with honey / hot water
3. Nilavembu kudineer 5 g twice daily
4. Pain Balm External use
5. Vatakesari thailam and Laghu Vishamushti thailam External use

Total cases received the treatment were 5538 of which new cases were 3584 (male - 1547, Female - 2027, Children - 10) and follow up cases were 1954 (male - 841, female - 1103 and Children - 10).

3. 10 Government Hospital (Siddha wing), Thiruchengodu

Common people visting Government Hospital Siddha wing, Thiruchengodu were provided with leaflets containing information on preventive aspect of the disease.

Probable cases of Chikungunya patients presented with fever were admistered **Bramanandha bairana Mathirai, Linga chenduram** 100 mg, Trikaduga Chooram 1g twice daily with honey after food. Patients presented with fever and arthritis were put on following drug regimen.

1. Vishnu Chakkara Mathirai - Twice daily after meals
2. Amukkara tablet - 1-3 timeswith hot water
3. Vatha sura Kudineer - 60 ml twice daily before meals
4. Sivappu Kukkil Thylam - External use
5. Karpoorathi thylam - External use

(Equal quantity of 4 and 5 are mixed and applied externally over the affected area)

Table: 16 Number of Chikungunya cases studied in Government Hospital Thiruchengodu

Date	New Patients			Old Patients			Total			Total
	Male	Female	Children	Male	Female	Children	Male	Female	Children	
25/7/06	164	117	27	239	189	21	403	306	48	767
26/07/06	198	101	18	175	189	5	373	290	23	686
27/07/06	172	126	33	165	131	-	337	259	33	627
28/07/06	196	152	17	228	220	6	424	372	23	819
29/07/06	163	134	39	211	197	11	374	331	50	755
30/07/06	-	-1	-	119	108	3	119	108	3	230
Total										3884

Seventy four patients were taken up for a clinical study in probable cases of Chikungunya patients. Results of the therapy was detailed in table

Table- 17 Details of the patients, duration of the therapy and improvement

S. No.	Sign and Symptom	Total number of Patients	No. of Days treated	No. of patients Showed complete relief	No. of patients Showed Moderate relief
1.	Fever with rigor	37	3	31	6
2.	Pain and swelling				
	Knee	55	6	38	17
	Ankle	40	6	29	11
	MTP joints	16	5	12	4
	Hip	6	5	5	1
	Shoulder	8	5	6	2
	Cervical	4	5	3	1
	Elbow	22	6	19	3
	Wrist	18	7	15	3
	IP and MCP joints	12	5	8	4
3.	Fatigue	12	5	7	5
4.	Nausea	4	2	4	0
5.	Headache	12	3	11	1
6.	Giddines	11	3	9	2
7.	Itching	2	6	1	1
8.	Anorexia	4	4	4	0
9.	Insomnia	32	5	28	4
10.	Constipation	50	4	42	8
11.	Irritation in the eye	70	3	69	1
12.	Lymphadenopathy	13	5	10	3

11. Government Siddha Medical College, Palayamkottai

About 1063 patients visiting Noi Naadal Department of Government Siddha Medical College, Palayamkottai during 22nd September 2006 to 2nd January 2007 were administered with following drug regimen during pyrexial state.

- 1 Nilavembu Kudineer, 60ml 2 times before meals with honey
- 2 Amukkara Chooram, 1gm thrice daily with honey
- 3 Arumuga Chenduram, 100 mg, thrice daily with honey
4. Vedi Annabethi Chenduram, 100 mg, thrice daily with honey
5. Pavala parpam, 50mg, thrice daily with honey
6. Pindathailam for external use
7. Karpoorathy thailam for external use

During post Chikungunya arthralgia patients were administered with one of the following drug regimen.

1.	Arumuga Chenduram Pavala Parpam Naga Parpam Amukkua Chooranam	100 mg 50 mg 50 mg 1 gm	2 times with honey after food
2.	Gowri Chinthaamani Vasantha Kusumakara Maathirai Thali sathi Chooranam	100 mg 1 pill 1 gm	2 times with honey after food
3.	Chanda Maarutha Chenduram Thrikaduku Coornam	50 mg 1 gm	2 times with honey after food
4.	Ayaveera Chenduram Sangu Parpam Amukkura Chooranam	50 gm 100 mg 1 gm	2 times with honey after food

NOTE: Visha mushti thailam and Vatha Keasari Thailam for external application

Table- 18 Details of the patients, duration of the therapy and improvement

S. No.	Sign and Symptoms	Total number of Patients	No. of Days	No. f patients Showed complete relief	No. f patients Showed Moderate relief
1.	Fever with rigor	334	3	295	39
2.	Pain and swelling				
	Knee	838	10	762	76
	Ankle	902	8	806	96
	MTP joints	603	10	522	81
	Hip	496	6	411	85
	Shoulder	378	8	302	76
	Cervical	207	10	191	16
	Elbow	764	8	683	81
	Wrist	932	10	814	118
	IP and MCP joints	701	10	623	78
3.	Fatigue	632	4	591	41
4.	Nausea	263	4	204	59
5.	Headache	198	3	173	25
6.	Giddiness	411	4	384	27
7.	Itching	34	10	29	5
8.	Anorexia	372	5	331	41

9.	Insomnia	631	6	572	59
10.	Constipation	802	4	771	31
11.	Irritation in the eye	192	3	169	23
12.	Lymphadenopathy	48	6	37	11

3. 12 Central Research Institute for Siddha, Chennai (Multi center clinical observation)

A multi center open clinical observation was conducted to evaluate the effect of Nilavembu Kudineer in combination with three drug regimens (1 to 3) in probable cases of Chikungunya patients. Nilavembu Kudineer at the dose of 15 to 60 ml twice daily in combination with above drug regimen are administered to the patients visiting Out Patient Departments (OPD) of the four reputed Siddha institutes in Tamil Nadu.

The study drug was administered to the patients in following Centers :

1. National Institute of Siddha, Chennai.
2. Central Research Institute for Siddha, Chennai
3. Government Siddha College, Palayamkottai, District Trinelveli
4. Primary Health Center, Trichencode, District Namakkal.

Materials and Methods

The diagnosis of Chikungunya was made on the basis of clinical presentation. The patients presenting with following symptoms were considered as major symptoms for the diagnosis of Chikungunya, they are-

1. Fever with rigor
2. Pain and swelling in
 - i. Shoulder joint
 - ii. Elbow Joint
 - iii. Wrist joint
 - iv. Interphalangeal and Metacarpal Joints
 - v. Hip joint
 - vi. Knee joint
 - vii. Ankle Joint
 - viii. Metatarsal Joints
 - ix. Cervical
3. Irritation in the eye
4. Constitutional Symptoms :
 - i. Fatigue
 - ii. Nausea
 - iii. Headache

- iv. Giddiness
- v. Itching
- vi. Anorexia
- vii. Insomnia
- viii. Constipation

The Patients attending the Out Patient Department and all age groups of either sex presented with above symptoms were administered with the study drug. All the baseline symptoms were recoded at first visit.

Treatment arms

The study drug was categorized into 4 drug regimens

1. Drug Regimen-1 (during Pyrexial state)
2. Drug regimen -2 (during post pyrexial state)
3. Drug regimen -3
4. Drug Regimen-4

The Drug regimens 1 to 3 were administered with Nilavembu kudineer and the Drug regimen 4 was administered with Vatasura kudineer. Patients were asked to come for review everyday and they were administered with fresh decoction of Nilavembu kudinir.

Nilavembu Kudineer and Linga chenduram were subjected to preclinical evaluation (Annexure - 5) which includes acute and sub acute toxicity for Linga chenduram and anti pyretic activity. The dose, frequency, anupana and mode of administration of above drug regimens were illustrated in Table 19.1 - 19.4.

Duration of the therapy

The treatment for pyrexial state was for 3 days and post pyrexial state was 2 weeks.

Follow up

The patients were followed up once in every week. The symptoms were recoded at each visit and results were analyzed after 3 weeks.

Assessment of results:

The results were assessed based on the improvement in symptoms. The following criteria was used to assess the improvement-

- Complete relief - Total relief in all symptoms
- Marked relief - Patients are comfortable and relieved from all the symptoms
- Moderate relief - Patient still suffering with mild symptoms
- Mild relief - 25-50% relief in symptoms
- No relief - Absolutely no relief in symptoms
- LAMA - Patients discontinued or information not available.

Observations:

The total number of patients received treatment for probable Chikungunya patients were 13773, of which the 4225 cases treated at National Institute for Siddha, Chennai, 1364 cases at Central Research Institute for Siddha, Chennai, 4300 cases at Government Siddha College, Palayamkottai and 3884 cases at Primary Health Center, Thiruchencode (Table 20.1).

The incidence of the disease observed more in females (56.8%) than males (43.2%). The majority of the age group affected were 30-40 years (31.2%) and rarely seen in children below 10 years (Table: 20.2 - 20.5).

Apart from fever, the most predominant symptoms were observed are pain and swelling in large joints (50.7%), fatigue (32.1%) and stiffness in the joints (23.8%) (Table -21.5).

The four drug regimens were administered to the probable cases of Chikungunya patients based on the clinical presentation. At the end of the therapy, 18.6% showed complete relief, 30.6% showed marked improvement, 32.1% moderate improvement, 10.1% showed mild improvement and 4.45% showed no relief. However 4.05% cases were probably discontinued therapy or withdrawn (Table-22).

Results showed that Nilavembu Kudineer and Bramanada Bairavam in pyrexia state and in post pyrexia state Amukkara chooranam, Linga chenduram and Gowri chinthamani chenduram have shown better therapeutic effect. The fever comes to normal within three days and in the case of post pyrexia states the symptoms like pain and swelling in joints, abdominal disturbances responded quickly within one week in majority of the cases. Within a few weeks these drugs have shown better effect in controlling the pain and swelling of the large joints.

As a preventive measure, use of Nilavembu kudineer daily has prevented the incidence of Chikungunya and effective in all age groups, which was observed by the physicians at Primary health centre, Trichencode.

Bramananda Bairavam was a proven drug in the management of fever even in delirium with fever, which showed better response in controlling the pyrexia. Nilavembu kudineer though it has been indicated in the treatment of fever, on pharmacological screening, which showed better anti inflammatory and analgesic effect than anti pyrexia effect (Ghosh *et. al*, 1981).

Linga chenduram, Amukkura chooranam and Gowri chindamani chenduram are the drugs of choice to produce the antipyretic, analgesic and anti-inflammatory effect, which was confirmed and evidenced in the pharmacological screenings (Ghosh *et. al*, 1977& 1981).

Among all the drug regimens, these drugs mentioned above only has produced the better therapeutic effect.

Table 19.1 - Drug Regimen – I (Pyrexia state)

S. No	Name of the medicine	Dose	Vehicle	Remarks
1	Bramanadha bairavam	One to two pills twice a day	Honey	Internal use
2	Thirikadugu chooranam	One gm twice a day	Honey	Internal use
3	Nilavembu Kudineer	15 to 30 ml twice a day		Internal use
4.	Pinda thylam with Karpoorathy thailam	--	--	External use

Table 19.2 Drug Regimen – II (Post Pyrexia state)

1	Linga Chenduram	100mg twice a day	Honey	Internal use
2.	Gowri chinthamani chenduram	100 mg twice a day	Honey	Internal use
2	Amukkara chooranam	One gm twice a day	Honey	Internal use
3	Nilavembu Kudineer	15 to 30 ml twice a day	-	Internal use
4.	Pinda thylam with Karpoorathy thailam	-	-	External use

Table 19.3 Drug Regimen – III

1	Nilavembu Kudineer	60ml 2 times before meals	Honey	Internal use
2	Amukkara Choornam	1gm 3 times	Honey	Internal use
3	Arumuga Chenduram	100 mgm 3 times	Honey	Internal use
4.	Vedi Annabethi Chenduram	100 mgm 3 times	Honey	Internal use
8.	Pavala parpam	50mgm 3 times	Honey	External use
9.	Pindathailam	--	--	External use
10.	Karpoorathy thailam	--	--	External use

Table 19.4 Drug Regimen – IV

1	Chandamarutha Chenduram	100mg twice a day	Honey	Internal use
2	Ayaveera Chenduram	100 mg twice a day	Honey	Internal use
3	Vathasura Kudineer	15 to 30 ml twice a day	-	Internal use

OBSERVATIONS

Table 20.1 Total number of population covered in all 4 centers

S.No.	Name of the Institute	Total Patients received Study drugs
1.	National Institute for Siddha, Chennai	4225
2.	Central Research Institute for Siddha, Chennai	1378
3.	Government Siddha College, Palayamkottai	4300
4.	Primary Health Center, Trichencode	3884
TOTAL		13787

Age and Sex wise distribution of cases treated in Centers

Table 20.2 National Institute of Siddha, Chennai

S.No.	Age (in Years)	Male	Female	Male child	Female child	Total
1	0 – 10	-	-	6	9	15
2	10 – 20	128	182	-	-	310
3	20 – 30	251	335	-	-	586
4	30 – 40	586	679	-	-	1265
5	40 – 50	354	503	-	-	857
6	50 - 60	292	408	-	-	700
7	60 >	223	269	-	-	492
Total		1834	2376	6	9	4225

Table 20.3 Central Research Institute for Siddha, Chennai.

Sl.no	Age (in Years)	Male	Female	Male child	Female child	Total
1	0 – 10	-	-	5	9	14
2	10 – 20	52	65	-	-	117
3	20 – 30	61	133	-	-	194
4	30 – 40	232	363	-	-	595
5	40 – 50	143	169	-	-	312
6	50 - 60	36	56	-	-	92
7	> 60	23	31	-	-	54
Total		547	817	5	9	1378

Table 20.4 Government Siddha Medical College, Trinevelli

S.No.	Age (in Years)	Male	Female	Male child	Female child	Total
1	0 – 10	-	-	3	6	9
2	10 – 20	135	189	-	-	324
3	20 – 30	259	347	-	-	606
4	30 – 40	596	693	-	-	1289
5	40 – 50	357	508	-	-	865
6	50 - 60	294	411	-	-	705
7	>60	230	272	-	-	502
Total		1871	2420	3	6	4300

Table 20.5 Primary Health Centre, Trichencode

Sl.no	Age (in Years)	Male	Female	Male child	Female child	Total
1	0 – 10	-	-	3	3	6
2	10 – 20	103	144	-	-	247
3	20 – 30	225	302	-	-	527
4	30 – 40	541	622	-	-	1163
5	40 – 50	338	485	-	-	823
6	50 - 60	268	378	-	-	646
7	>60	213	259	-	-	472
Total		1688	2190	3	3	3884

Distribution of symptoms among the the probable Chikungunya patients received trail drug in Out Patient Departments of 4 centers

Table 21.1 - National Institute of Siddha, Chennai

S.No.	Symptoms	Number of cases
1	Fever	2723
2	Pain and swelling (small joints)	318
3	Pain and swelling (large joints)	2453
4	Stiffness / Restricted movements	1052
5	Gastrointestinal symptoms (nausea / anorexia/ flatulence)	273
6	Abdominal pain	145
7	Headache	414
8	Skin rashes	172
9	Fatigue	1613

Table 21.2 - National Institute of Siddha, Chennai

S.No	Symptoms	Number of cases
1	Fever	735
2	Pain and swelling (small joints)	118
3	Pain and swelling (large joints)	653
4	Stiffness / Restricted movements	451
5	Gastrointestinal symptoms (nausea / anorexia/ flatulence)	132
6	Abdominal pain	57
7	Headache	109
8	Skin rashes	33
9	Fatigue	112

Table 21.3 - Government Siddha Medical College, Trinevelli

S.No.	Symptoms	Number of cases
1	Fever	2581
2	Pain and swelling (small joints)	287
3	Pain and swelling (large joints)	2137
4	Stiffness / Restricted movements	916
5	Gastrointestinal symptoms (nausea / anorexia /flatulence)	263
6	Abdominal pain	154
7	Headache	317
8	Skin rashes	212
9	Fatigue	1345

Table 21.4 - Primary Health Centre, Trichencode

S.No.	Symptoms	Number of cases
1	Fever	2101
2	Pain and swelling (small joints)	189
3	Pain and swelling (large joints)	1740
4	Stiffness / Restricted movements	871
5	Gastrointestinal symptoms (nausea / anorexia/ flatulence)	204
6	Abdominal pain	112
7	Headache	362
8	Skin rashes	89
9	Fatigue	1357

Table 21.5 Distribution of symptoms among the patients received the study drug

S.No.	Symptoms	Name of the Center				Total no. of Cases presented with Symptom
		National institute of Siddha, Chennai	Central Research Institute for Siddha, Chennai	Government Siddha College, Tiruneevelli	Primary Health Center, Trichencod e	
1.	Fever	2723	735	2581	2101	8140
2.	Pain and swelling (Small joints)	318	118	287	189	912
3.	Pain and swelling (Major joints)	2453	653	2137	1740	6983
4.	Stiffness / Restricted movements	1052	451	916	871	3290
5.	Gastrointestinal symptoms – nausea, anorexia flatulence)	273	132	263	204	872
6.	Abdominal pain	145	57	154	112	468
7.	Headache	414	109	317	362	1202
8.	Skin rashes	172	33	212	89	506
9.	Fatigue	1613	112	1345	1357	4427

Table – 22 Overall improvement in probable Chikungunya cases after the therapy in 4 centers

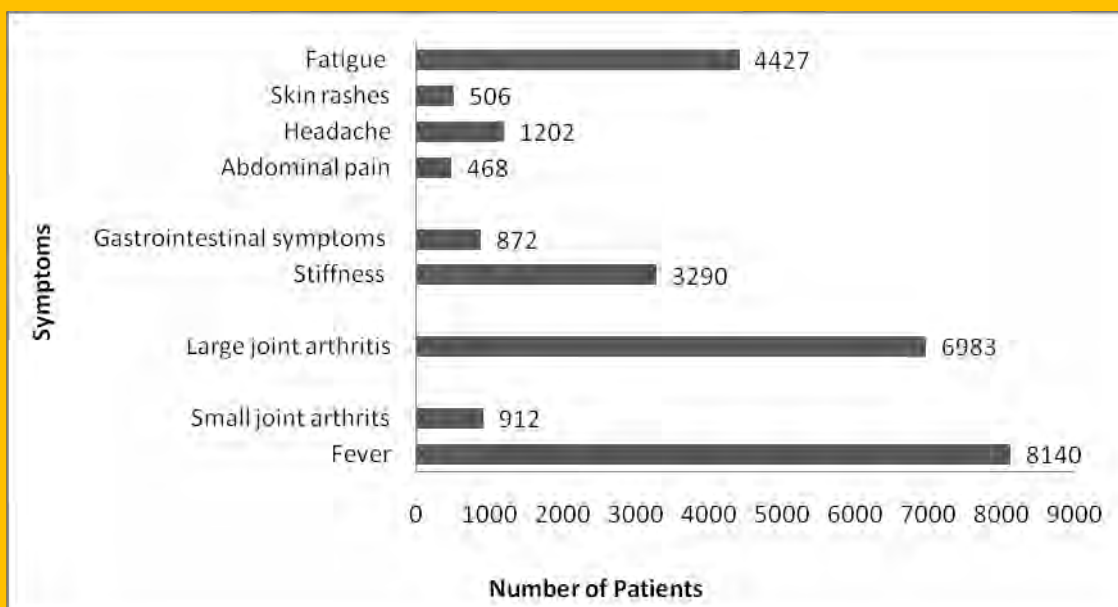
S.No.	RESULTS*	Name of the Center				No. of cases improved
		National institute of Siddha, Chennai	Central Research Institute, Siddha, Chennai	Government Siddha College, Tiruneevelli	Primary Health Center, Trichencod e	
1.	Complete Relief	792	195	815	761	2563 (18.6%)
2.	Marked Relief	1279	281	1426	1235	4221 (30.6%)
3.	Moderate Relief	1404	397	1309	1312	4422 (32.0%)
4.	Mild Relief	402	295	386	309	1392 (10.1%)

5.	No Relief	187	108	176	142	613 (4.45%)
6.	LAMA	161	87	187	124	559 (4.05%)
Total number of cases treated		4225	1363	4299	3883	13770

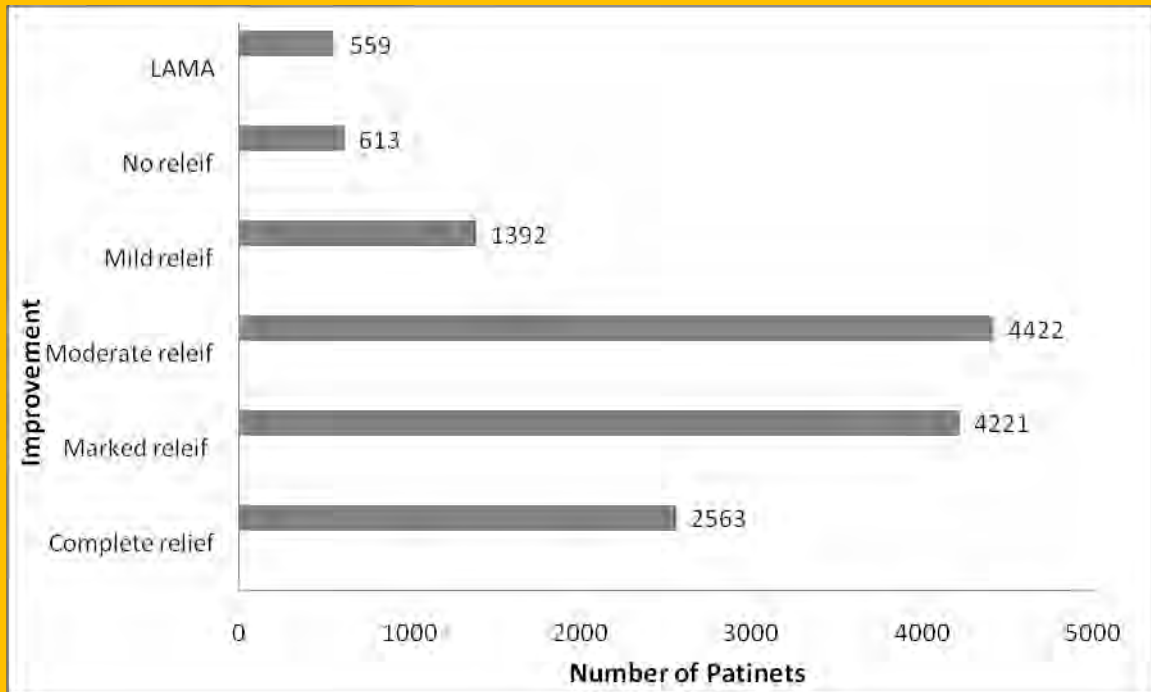
ASSESSMENT CRITERIA

- Complete relief** - Total relief in all symptoms
- Marked relief** - Patients are comfortable and relieved from all the symptoms
- Moderate relief** - Patient still suffering with mild symptoms
- Mild relief** - 25-50% relief in symptoms
- No relief** - Absolutely no relief in symptoms
- LAMA** - Patients discontinued or information not available.

Graph-1 Distribution of symptoms among Chikungunya patients



Graph-2 Overall improvement in Chikungunya cases after the therapy.



STRATEGY FOR RESEARCH IN CHIKUNGUNYA

4. STRATEGY FOR RESEARCH IN CHIKUNGUNYA

Chikungunya is an epidemic disorder, there should be continuous upgrading of the knowledge is required about the Chikungunya infection, transmission, control, virus, vector and epidemiology.

As this disease mainly related to public health, the research has to be focussed on the geographical extent and spread of the infection, risk assessment if it is reintroduced.

The formulations used by units of CCRAS and other State Government AYUSH Departments during the out break are classical and prepared form various herbs and herbo-mineral components – which are time tested and clinically being prescribed. Further research is needed to standardize these formulations by developing Standard Operating Procedures (SOPs), pharmacopoeial standards, stability studies and establishing the safety data of these formulations. The formulations can be revalidated through reverse pharmacological approach there by creating the scientific evidence.

Research team containing multi disciplinary personnel are to be engaged in designing a clinical protocol to evaluate the safety, efficacy and tolerability of Ayurveda and Siddha drugs in Chikungunya, with a proper diagnostic criteria that include clinical, laboratory and epidemiological criteria, Case Record Form (CRF) and well defined assessment criteria in terms of Primary and secondary outcomes preferably objective measures.

Research is also needed for the treatment of Chikungunya during out breaks, in severe cases, in post Chikungunya sequel, and the long term effect of Chikungunya in terms of improving the Quality of Life (QOL) of a patient.

Without use of proper vector control measures, the prevention and management of Chikungunya was almost incomplete. Therefore, more research has to be carried out to explore potential medicinal plants in Ayurveda and Siddha for vector control.

Through Collaborative research more knowledge can be acquired regarding virus characterization and interaction, the vector responsible for the out break, host and mosquito interaction etc., which information will be very valuable during the out breaks

The Appropriate documentation of the information on current out break of Chikungunya in terms of epidemiological data, risk assessment, management in general and management in severe cases will be useful in future out break.

ANNEXURES

Chikungunya Case Report Form

CENTRAL COUNCIL FOR RESEARCH IN AYURVEDA AND SIDDHA
Department of AYUSH, Ministry of Health & Family Welfare, Government of India
No.61-65, Institutional Area, Opposite to D Block, Janak Puri, New Delhi. 110 058

CASE RECORD FORM

Name of the Institute:

OPD / IPD No. :

Date of Visit:

Name of the Patient : Age: Sex: Male Female

Residential Address :

Contact Phone No. :

History of residing in the Epidemic area : YES No

Anyone in the family affected by same illness : YES No

Occupation:

Symptoms of Chikungunya

- Fever
- Joint pains (Specify the joints).....
- Joint swelling (Specify the joints).....
- Headache
- Skin rashes
- Respiratory symptoms like Cough and Dyspnea
- Any other.....
- Pathological/ Immunological findings (carried out if any) specify

Duration of illness :

Phase of the Disease : Active Relapse Post Chikungunya Status

Treatment Details:

Previous medication if any: Allopathy Ayurveda Siddha Homoeopathy Unani

S. No.	Name of the Medicine	Dose & Frequency	Anupana	Start Date	End Date

Treatment Prescribed

S. No.	Name of the Medicine	Dose & Frequency	Anupana	Duration

ASSESSMENT FORM

Visit Number:

Date of Visit:

S. No.	Symptoms	Status of symptoms						Remarks
		7 th Day (Visit-1)			15 th day (Visit-2)			
		Complete relief	Partial relief	No relief	Complete relief	Partial relief	No relief	
1	Fever							
2	Joint pains							
3	Joint swelling							
4	Headache							
5	Skin rashes							
6	Respiratory symptoms Cough/ Dyspnea If any others (Specify)							
7	If any other (Specify)							
8	Laboratory Criteria (carried out if any) Pathological/ Immunological findings							

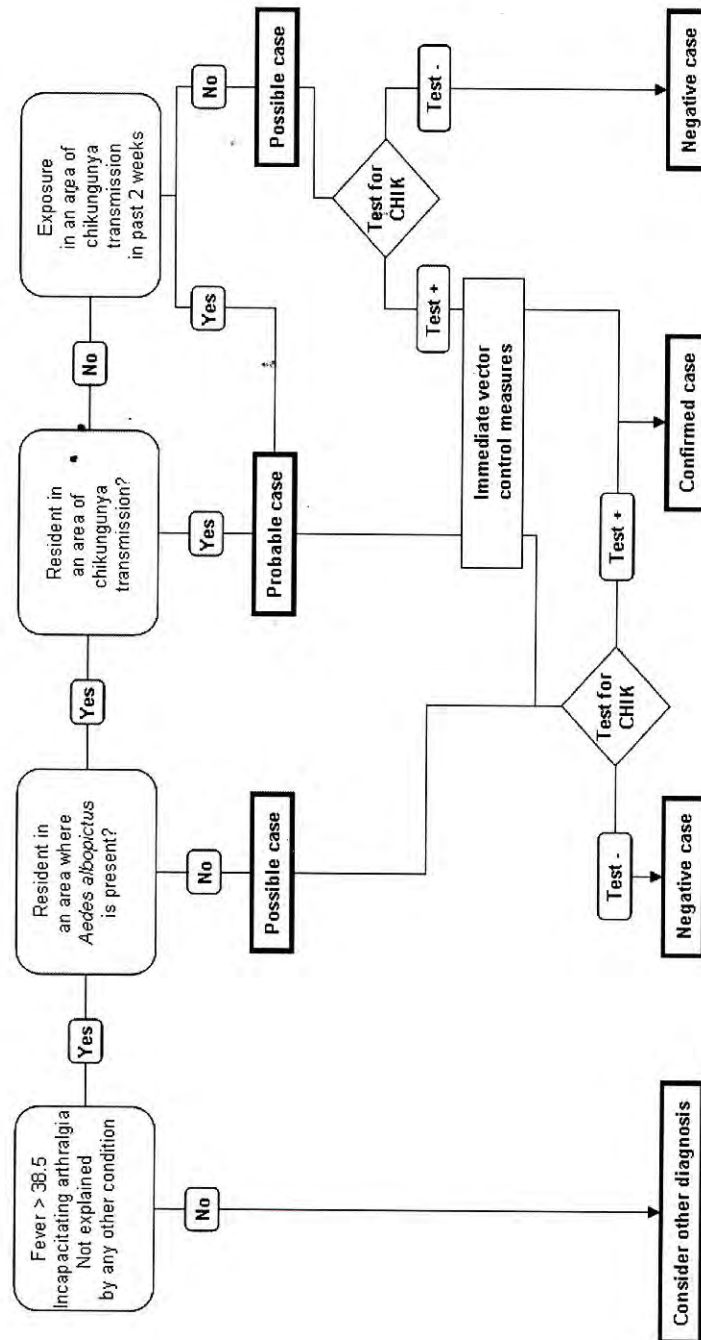
[Complete Relief-Totally asymptomatic; Partial Improvement: 50% improvement in Symptom; No Relief: Absolutely no improvement in symptom.]

If any Adverse Drug Reactions Reported:

.....

Signature of the Physician

Algorithm for Ascertainment of Suspected Chikungunya case



[Developed by European Centre for Disease Prevention and Control; A mission Report Chikungunya in Italy, Joint ECCD/WHO visit for a European risk assessment, 17-21, September 2007, Page No.22]

CHIKUNGUNYA CASE DEFINITION FOR SURVEILLANCE

[Developed by European Centre for Disease Prevention and Control; A mission Report Chikungunya in Italy, Joint ECCD/WHO visit for a European risk assessment, 17-21, September 2007, Page No.22]

- **Clinical criteria** Acute onset of fever $> 38.5^{\circ}$ C and severe arthralgia not explained by other medical conditions.
- **Epidemiological criteria** Residing or having visited epidemic areas having reported transmission within 15 days prior to the onset of symptoms.
- **Laboratory Criteria** At least one of the following tests in acute phase
 - Virus isolation;
 - Presence of Viral RNA by RT-PCR;
 - Presence of Virus specific IgM antibodies in single serum sample collected;
 - Seroconversion to virus specific antibodies in samples collected at least one to three weeks apart.

On the basis, the following categories of cases are reported.

- **Possible case** : A patient meeting clinical criteria
- **Probable case** : A patient meeting both the clinical and epidemiological criteria
- **Confirmed cases** : A patient meeting the laboratory criteria, irrespective of the clinical presentation.

Format for Documentation of Medical Practices and Claims on Prevention and Treatment of Vector Borne and other Communicable Diseases by AYUSH System (s) of Medicine made by Individuals and Organizations in Public and Private Sectors**Claimant's Profile**

Individual's/ Organization's Name	
Complete Postal Address	
Phone Number (s)	
Mobile Number (s)	
E Mail ID	
Name of the Disease/ Condition for prophylaxis/ treatment <ul style="list-style-type: none">• Duration• Place	

Documentation on Medical Practices and Claims on Prevention of Vector Borne and other Communicable Diseases by AYUSH System(s) of Medicine made by Individuals and Organizations in Public and Private Sectors

Claims of Successes in Prevention of Epidemic Disease

{If details do not fit in the given space, please enclose separate sheet (s)}

1.	Claimant's Name & Address		
2.	Particulars of Disease <ul style="list-style-type: none"> • Name of disease • Place(s) • Duration 		From To
3.	Period during which Preventive Medicine was distributed		From To
4.	Personnel involved (Indicate their names and qualifications) <ul style="list-style-type: none"> • Individual • Organization (Government/NGO) • Other Associates 		
5.	Methodology		
	5.1	Preventive	
	5.1.1	Basis for the selection of drug(s) / medicine(s)	
	5.1.2	Name (s) of drug (s) / Medicine (s) prescribed <ul style="list-style-type: none"> • Single drug (s) (indicate common name in Hindi and regional language, Botanical / Sanskrit / Arabic / Persian or name used in Homoeopathy) • Compound drug (s) (indicate ingredients, whether traditional or classical or self-made with method of preparation) • If procured from the market, indicate the source • Anupana / Badarqa (i.e. vehicle in case of Ayurveda, Siddha / Unani) • Dosage and Duration of administration • Potencies (in case of Homoeopathy) • Mode of administration 	

		5.1.3	Total no. of people administered prophylaxis	
		5.1.4	Prophylaxis administered by whom a) By Individual / Organization b) Other Associates	
		5.1.5	Total no. of people maintained as control	
		5.1.6	Control maintained by whom a) By Individual / Organization b) Other Associates	
		5.1.6	Other measures adopted by: a) Individual b) Organization c) Others (Give details)	
		5.1.7	Names/ No. of Villages/ Locality/ Houses covered	
		5.1.8	Total Population covered (with reference to 5.1.7)	
6.	Follow up			
	6.1	Methodology Adopted		
		6.1.1	Followed by whom • Self • Community/ health workers/ other agencies	
		6.1.2	Means of follow-up • Door to door • In the hospital • Through camps • Any other means	
	6.2		Duration of follow up	From To
	6.3		Number of cases followed by: • Individual • Organization • Other agency	
7	Results			
	7.1		a. Number of cases that contacted/ developed disease after taking prophylaxis b. Number of Controls that developed disease	
	7.2		Treatment taken after development of disease	
	7.3		Approximate Expenditure incurred on medicine per patient	
	7.4		Source of funding	
8.	Any constraints / difficulties faced (including man power and financial) for conducting/undertaking the program.			

9.	Salient achievements of the study
10.	If you would have opportunity to work in this direction in future, how would like to proceed:

UNDERTAKING

- 1) I/We do hereby affirm that the above information is based on facts and is based on the work of the undersigned.
- 2) I/We would have no objection if this information is documented in public interest.

Place:
Date:

Name of the Individual/ Organization
Seal

Documentation on Claims of Treatment of Vector Borne and other Communicable Diseases by AYUSH System (s) of Medicine made by Individuals and Organizations in Public and Private Sectors

Treatment Claims of Epidemic and other Diseases

{If details do not fit in the given space, please enclose separate sheet (s)}

1.	Claimant's Name and address		
2.	Particulars of Disease/Condition Treated		
	<ul style="list-style-type: none"> • Name of the disease • Place (s) of occurrence 		
3.	Duration of treatment	From	To
4.	Personnel involved (Indicate their names and qualifications)		
	<ul style="list-style-type: none"> • Individual • Organization (Government/NGO) • Other Associates 		
5.	Methodology		
	5.1	Therapeutic	
	5.1.1	Number of cases treated	
	5.1.2	Criteria for Diagnosis	
		<ul style="list-style-type: none"> • Clinical presentations alone or Laboratory and other Investigations OR • Both 	
	5.1.3	Basis for selection of drug (s)/ medicine s)	
	5.1.3	Name of Drug (s)/Medicine (s) prescribed	
		<ul style="list-style-type: none"> • Single drug(s) (indicate common name in Hindi and regional language, Botanical / Sanskrit / Arabic / Persian or name used in Homoeopathy) • Compound drug (s) (indicate ingredients, whether traditional or classical or self-made with method of preparation) • If procured from market, indicate the source • Anupana / Badarqa (i.e. vehicle in case of Ayurveda, Siddha and Unani) • Dosage and Duration of administration • Potencies in case of Homoeopathy • Mode of administration 	
6.	Follow up		
	6.1	Methodology adopted	
	6.1.1	Followed by whom	
		<ul style="list-style-type: none"> • Self • Community/health workers/ other agencies 	

	6.1.2	Means of follow-up					
		<ul style="list-style-type: none"> • Door to door • In the hospital • Through camps • Any other means 					
	6.2	Duration and interval of Follow up					
	6.3	Number of cases followed up					
	6.4	Outcome Assessment criteria					
		<ul style="list-style-type: none"> • Subjective parameters (Clinical presentation) OR • Objective parameters (Laboratory and other Investigations) OR • Both 					
7.	Results						
		Total Number of Cases					
		a. Cured*					
		b. Marked Improvement**					
		c. Moderate Improvement***					
		d. No Improvement					
		e. Worse					
		f. Dropouts					
		g. Deaths					
		h. Cases referred to other Hospitals					
8.	Any adverse drug reaction/side effect(s) observed? If yes, what were the side effects/drug reactions observed?	Yes/ No					
		<table border="1"> <thead> <tr> <th>Name (s) of side effects/ drug reactions</th> <th>No. of cases</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Name (s) of side effects/ drug reactions	No. of cases			
Name (s) of side effects/ drug reactions	No. of cases						
9.	Approximate Expenditure incurred on medicine per patient						
10.	Any constraints / difficulties faced, including man power and financial, during the study						
11.	Salient achievements of the study						
12.	If you would have opportunity to work in this direction in future, how would like to proceed:						

*Cured-Complete remission of signs and symptoms and normalization of Laboratory findings.

** Marked Improvement- Complete remission of signs and symptoms.

*** Moderate Improvement – Partial remission of sign and symptoms.

UNDERTAKING

- 1) I/ We do hereby affirm that the above information is based on facts and is based on the work of the undersigned.
- 2) I/ We would have no objection if this information is documented in public interest.

Place:

Date:

Name of the Individual/Organization

Seal

PRECLINICAL EVALUATION (PHARMACOLOGY) OF LINGA CHENDURAM AND NILAVEMBU KUDINEER

1. Linga Chenduram was studied in acute and sub-acute toxicity models. The drug did not show any toxicity within 7 days after single exposure, but showed sub acute toxic affects in the doses of 200 and 500 mg/ kg body weight with presence of mercury in vital tissue and histopathological studies.
2. Linga chenduram was evaluated for its probable antipyretic, hypothermic, anti inflammatory and analgesic effect in various experimental models using albino rats and mice. The drug showed significant antipyretic activity comparable to that of Acetyl Salicylic Acid and Paracetamol. The drug also showed significant analgesic activity in mice by hot plate method.
3. Nilavembu kudineer, a mixture of nine herbal materials in equal parts have long since been used as febrifuge in Siddha medicine. The drug was screened for antipyretic, analgesic and anti-inflammatory activities in different experimental models. The drug showed significant anti-inflammatory effects in the doses of 20 and 30 ml /Kg, orally. The drug also showed the analgesic activity for 50 and 30 ml / kg, which showed 53.36% and 37.31% effect respectively.

Standard Operating Procedures for Commonly Used Ayurveda and Siddha Formulations In Chikungunya

(A).AYURVEDIC FORMULATIONS

I. Category : ASAVA & ARISHTA

(1). AMRITARISHTA

Reference : Bhaishajya Ratnavali, Jvaradhikara ; 690-692

Definition : Amritarishta is a fermented liquid preparation with self generated alcohol prepared by using following ingredients.

Ingredients :

S.No.	Sanskrit Name	Botanical Name	Part	Quantity
1.	Amrita(Guduci)	<i>Tinospora cordifolia</i> (Willd.)Miers	Stem	4.800Kg
2.	Bilva	<i>Aegle marmelos</i> Corr.	Root/stem bark	480 g
3.	Syonaka	<i>Oroxylum indicum</i> Vent.	Root/stem bark	480 g
4.	Gambhari	<i>Gmelina arborea</i> Linn.	Root/stem bark	480 g
5.	Patala	<i>Stereospermum suaveolens</i> DC.	Root/stem bark	480 g
6.	Agnimantha	<i>Premna integrifolia</i> Linn.	Root/stem bark	480 g
7.	Salaparni	<i>Desmodium gangeticum</i> DC	Plant	480 g
8.	Prisniparni	<i>Uraria picta</i> Desv.	Plant	480 g
9.	Brihati	<i>Solanum indicum</i> Linn.	Plant	480 g
10.	Kantakari	<i>Solanum xanthocarpum</i> Schard & Wendle.	Plant	480 g
11.	Goksura	<i>Tribulus terrestris</i> Linn.	Plant	480 g
12.	Water for decoction reduced to			49.152Lit. 12.288 Lit.
13.	Guda Praksepa dravyas			14.400Kg
14.	Ajaji (sveta jiraka)	<i>Cuminum cyminum</i> Linn.	Fruit	768 g
15.	Raktapuspa (Parpata)	<i>Fumaria parviflora</i> Linn.	Plant	96g
16.	Saptacchada (Saptaparna)	<i>Alstonia scholaris</i> R.Br.	Stem bark	48g

17. Sunthi	<i>Zingiber officinale</i> Rosc.	Rhizome	48g
18. Marica	<i>Piper nigrum</i> Linn.	Fruit	48g
19. Pippali	<i>Piper longum</i> Linn.	Fruit	48g
20. Nagakesara	<i>Mesua ferrea</i> Linn.	Stamen	48g
21. Abda (Musta)	<i>Cyperus rotundus</i> Linn.	Rhizome	48g
22. Katvi (Katuka)	<i>Picrorrhiza kurroa</i> Royle ex. Benth.	Rhizome	48g
23. Prativisa (Ativisa)	<i>Aconitum heterophyllum</i> Wall ex. Royle	Root	48g
24. Vatsabija (Indrayava)	<i>Holorrhena antidysentrica</i> Wall.	Seed	48g

Method of Preparation:

1. Take the raw materials of Pharmacopoeial quality.
2. Coarsely powder the ingredients 1-11, add water and soak for over night.
3. Boil the mixture till it is reduced to one fourth. Filter through an unbleached muslin cloth.
4. Crush jaggery and add to above decoction, stir it well till the jaggery dissolves completely.
5. Powder the ingredients 14-24 individually and pass through BSS Sieve No.60 and add to above kashaya.
6. Transfer the above preparation to the old earthen pot which is previously, ghee smeared and fumigated with Pippali churna.
7. Seal the lid with 7 layers of clay smeared cloth and keep the pot in a heap of grains for 4-7 weeks without disturbing.
8. After 30 days, check whether fermentation process is completed by lighting a match stick near the lid, if it does not extinguish fermentation is completed.
9. Filter the solution through unbleached muslin cloth 2-3 times.
10. Store in air tight, amber coloured, glass container.

Dosage : 12-24 ml

Anupana : Water

Important Therapeutic Use: All types of Jvara

Commonly, majority of formulations are advised to take after food.

II. Category : KVATHA CURNA

(1). AMRTOTTARA KVATHA CURNA (Synonym: Nagaradi Kvatha Curna)

Reference : Sahasrayoga, Kasayaprakarana ; 30

Definition : Amrotottara Kvatha Curna is a coarse powder prepared by using following ingredients.

Ingredients :

S.NO.	Sanskrit Name	Botanical Name	Part used	Quantity
1.	Nagara (Sunthi)	<i>Zingiber officinale</i> Rosc.	Rhizome	2 parts
2.	Amrita (Guduci)	<i>Tinospora cordifolia</i> (Willd.) Miers	Stem	6 parts
3.	Haritaki	<i>Terminalia chebula</i> Retz.	Pericarp	4 parts

Method of Preparation:

1. Take the raw materials of Pharmacopoeial quality.
2. Coarsely powder the ingredients individually and pass through sieve No.10.
3. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
4. Store in air tight container.

Dosage : 48 g (in decoction form*)

Important therapeutic use : Jirna jvara, sannipatra jvara

* Decoction is to be made from Kvathacurnas and then be consumed.

(2). CHINNODBHAVADI KVATHA CURNA

Reference : Sahasrayoga, Kashaya Prakarana; 38

Definition : Chinnodbhava Kvatha Curna is a coarse powder prepared by using following ingredients.

Ingredients :

S.No.	Sanskrit Name	Botanical Name	Part used	Quantity
1.	Chinnodbhava (Guduci)	<i>Tinospora cordifolia</i> (Willd.) Miers	Stem	1 Part
2.	Vrisa (Vasa)	<i>Adhatoda vasica</i> Nees.	Root	1 Part

3.	Kiratika(Kiratatikta)	<i>Swertia chirayata</i> (Roxb. ex. Flem.)Karst	Plant	1 Part
4.	Parpata	<i>Fumaria parviflora</i> Linn.	Plant	1 Part
5.	Sunthi	<i>Zingiber officinale</i> Rosc.	Rhizome	2 Parts
6.	Valahaka (Musta)	<i>Cyperus rotundus</i> Linn.	Rhizome	3 Parts
7.	Yavasaka	<i>Alhagi pseudalhagi</i> (Beib)Desv	Plant	3 Parts

Method of Preparation:

1. Take the raw materials of pharmacopoeial quality.
2. Coarsely powder the ingredients individually and pass through sieve No.10.
3. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
4. Store in air tight container.

Dosage : 48 g (in decoction form*)

Therapeutic Uses : Sannipata Jvara

(3) RASNADI KVATHA CURNA

Reference : Sahasra Yoga, Kashaya Prakaran:396

Definition : Rasnadi Kvatha Curna is a coarse powder prepared by using following ingredients.

Ingredients

S.No.	Sanskrit Name	Botanical Name	Part used	Quantity
1.	Rasna	<i>Pluchea lanceolata</i> Oliver & Hiern.	Plant	1 Part
2.	Tamalaki	<i>Phyllanthus niruri</i> Linn.	Plant	1 Part
3.	Vrisa	<i>Adhatoda vasica</i> Nees.	Root	1 Part
4.	Agaru	<i>Aquilaria agallocha</i> Roxb.	Heart wood	1 Part
5.	Sathi	<i>Hedychium spicatum</i> Ham ex. Smith	Rhizome	1 Part
6.	Citra	<i>Ricinus communis</i> Linn.	Root	1 Part
7.	Abda	<i>Cyperus rotundus</i> Linn.	Rhizome	1 Part
8.	Cavya	<i>Piper chaba</i> Hunter	Root	1 Part
9.	Asmabhit	<i>Berginea ligulata</i> (Wall.)Engl.	Rhizome	1 Part
10.	Dhatri	<i>Emblica officinalis</i> Gaertn.	Pericarp	1 Part
11.	Bharangi	<i>Clerodendron serratum</i> (Linn.)Moon	Root	1 Part
12.	Patola	<i>Trichosanthes dioica</i> Roxb.	Plant	1 Part
13.	Pushkara	<i>Inula racemosa</i> Hook.f.	Root	1 Part
14.	Nisa	<i>Curcuma longa</i> Linn.	Rhizome	1 Part
15.	Sairiya	<i>Barleria prionitis</i> Linn.	Plant	1 Part
16.	Visva	<i>Zingiber officinale</i> Rosc.	Rhizome	1 Part

17.	Agni	<i>Plumbago zeylanica</i> Linn.	Root	1 Part
18.	Bilva	<i>Aegle marmelos</i> Corr.	Stem bark	1 Part
19.	Syonaka	<i>Oroxylum indicum</i> Vent.	Stem bark	1 Part
20.	Gambhari	<i>Gmelina arborea</i> Linn.	Stem bark	1 Part
21.	Patala	<i>Sterospermum suaveolens</i> DC.	Stem bark	1 Part
22.	Agnimantha	<i>Premna integrifolia</i> Linn.	Stem bark	1 Part
23.	Salaparni	<i>Desmodium gangeticum</i> DC.	Plant	1 Part
24.	Prisniparni	<i>Uraria picta</i> Desv.	Plant	1 Part
25.	Brihati	<i>Solanum indicum</i> Linn.	Plant	1 Part
26.	Kantakari	<i>Solanum xanthocarpum</i> Schard.& Wall.	Plant	1 Part
27.	Gokshura	<i>Tribulus terrestris</i> Linn.	Plant	1 Part
28.	Daru	<i>Cedrus deodara</i> (Roxb.)Loud	Heartwood	1 Part

Method of Preparation:

1. Take the raw materials of pharmacopoeial quality.
2. Coarsely powder the ingredients individually and pass through Sieve No.10.
3. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
4. Store in air tight container.

Dosage : 48 g (in decoction form*)

Prakshepa Dravya : Saindhava lavana, Khanda, Pippali

Important therapeutic Uses : Amavata, Vata roga etc.,

(4). MAHA RASNADI KVATHA CURNA

Reference : Sarangdhara Samhita, Madhyama Khanda, Adhaya 2: 89-91 ½

Definition : Maha Rasnadi Kvatha Curna is a coarse powder prepared by using following ingredients.

S.No.	Sanskrit Name	Botanical Name	Part used	Quantity
1.	Rasna	<i>Pluchea lanceolate</i> Oliver & Hiern.	Plant	1 Part
2.	Dhanvayasa	<i>Fagonia criteca</i> Linn.	Plant	1 Part
3.	Bala	<i>Sida cordifolia</i> Linn.	Plant	1 Part
4.	Eranda mula	<i>Ricinus communis</i> Linn.	Plant	1 Part
5.	Devadaru	<i>Cedrus deodara</i> (Roxb.) Loud	Heart wood	1 Part

6.	Sathi	<i>Hedychium spicatum</i> Ham ex. Smith	Rhizome	1 Part
7.	Vaca	<i>Acorus calamus</i> Linn.	Rhizome	1 Part
8.	Vasaka	<i>Adhatoda vasica</i> Nees.	Leaf	1 Part
9.	Nagara	<i>Zingiber officinale</i> Rosc.	Rhizome	1 Part
10.	Pathya	<i>Terminalia chebula</i> Retz.	Pericarp	1 Part
11.	Cavya	<i>Piper chaba</i> Hunter	Stem	1 Part
12.	Musta	<i>Cyperus rotundus</i> Linn	Rhizome	1 Part
13.	Punarnava	<i>Boerhavia diffusa</i> Linn	Root	1 Part
14.	Guduchi	<i>Tinospora cordifolia</i> (Willd.)Miers	Stem	1 Part
15.	Vridhdharu	<i>Ipomea petaloidae</i> Choisy	Root	1 Part
16.	Satapushpa	<i>Foeniculum vulgare</i> Mill.	Fruit	1 Part
17.	Gokshura	<i>Tribulus terrestris</i> Linn.	Fruit	1 Part
18.	Asvagandha	<i>Withania somnifera</i> Dunal.	Root	1 Part
19.	Prativila (Ativila)	<i>Aconitum heterophyllum</i> Wall. ex. Benth	Root	1 Part
20.	Kritamala	<i>Cassia fistula</i> Linn.	Root	1 Part
21.	Satavari	<i>Asparagus racemosus</i> Linn.	Root	1 Part
22.	Krisna	<i>Piper longum</i> Linn.	Fruit	1 Part
23.	Sahachara	<i>Barleria prionotis</i> Linn.	Plant	1 Part
24.	Dhanyaka	<i>Corinadrum sativum</i> Linn.	Plant	1 Part
25.	Kantakari	<i>Solanum xanthocarpum</i> Schard & Wall.	Plant	1 Part
26.	Brihati	<i>Solanum indicum</i> Linn.	Plant	1 Part

Method of Preparation:

1. Take the raw materials of pharmacopoeial quality.
2. Coarsely powder the ingredients individually and pass through Sieve No.10.
3. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
4. Store in air tight container.

Dosage : 48 g (in decoction form*)

Prakshepa Dravya : Sunthi Curna, Pippali Curna, Ajamodadi Curna

Important therapeutic Uses : Vata roga, Amavata etc.,

III. Category : GUGGULU

(1). Yogaraj Guggullu

Reference : Bhaishajyaratnavali, Amavatadhikara; 90-93

Definition : Yogaraj guggullu is a tablet, prepared by using following ingredients.

Ingredients:

S.No.	Sanskrit Name	Botanical Name	Part used	Quantity
1.	Citraka	<i>Plumbago zeylanica</i> Linn.	Root	1 part
2.	Pippalimula	<i>Piper longum</i> Linn.	Root	1 part
3.	Yavani (Yavani)	<i>Trachyspermum ammi</i> (Linn.) Sparague	seed	1 part
4.	Karavi (Krisna jiraka)	<i>Carum carvi</i> Linn.	Fruit	1 part
5.	Vidanga	<i>Embelia ribes</i> Burn.f.	Fruit	1 part
6.	Ajamoda	<i>Apium graveolens</i> Linn.	Fruit	1 part
7.	Jiraka	<i>Cuminum cyminum</i> Linn.	Fruit	1 part
8.	Suradaru (devadaru)	<i>Cedrus deodara</i> (Roxb.)Loud	Heart wood	1 part
9.	Cavya	<i>Piper chaba</i> Hunter.	Stem	1 part
10.	Ela	<i>Elettaria cardamomum</i> Maton	Seed	1 part
11.	Saindhava lavana	Rock salt	-	1 part
12.	Kustha	<i>Saussurea lappa</i> C.B. Clarke	Root	1 part
13.	Rasna	<i>Pluchea lanceolata</i> Oliver & Hiern.	Root/leaf	1 part
14.	Goksura	<i>Tribulus terrestris</i> Linn.	Fruit	1 part
15.	Dhanyaka	<i>Coriandrum sativum</i> Linn.	Fruit	1 part
16.	Haritaki	<i>Terminalia chebula</i> Retz.	Pericarp	1 part
17.	Bibhitaki	<i>Terminalia belerica</i> Roxb.	Pericarp	1 part
18.	Amalaki	<i>Embllica officinalis</i> Gaertn.	Pericarp	1 part
19.	Mustaka (musta)	<i>Cyperus rotundus</i> Linn.	Rhizome	1 part
20.	Sunthi	<i>Zingiber officinale</i> Rosc.	Rhizome	1 part
21.	Marica	<i>Piper nigrum</i> Linn.	Fruit	1 part
22.	Pippali	<i>Piper longum</i> Linn.	Fruit	1 part
23.	Tvak	<i>Cinnamomum zeylanicum</i> Blume	Stem bark	1 part
24.	Usira	<i>Vetiveria zizanooides</i> (Linn.) Nash	Root	1 part
25.	Yavagraja (yava) ksara	<i>Hordium vulgare</i> Linn.	Plant	1 part
26.	Talisa patra	<i>Abies webbiana</i> Lidl.	Leaf	1 part
27.	Patra	<i>Cinnamomum tamala</i> Nees & Eberm.	Leaf	1 part
28.	Guggulu - sodhita	<i>Commiphora wightii</i> .	Exudate	1 part

	(Arn.) Bhandari	
29.	Sarpi (Goghrita)	Clarified Butter 1 part

Method of Preparation:

1. Take the raw materials of Pharmacopoeial quality.
2. Purify Guggulu (as per method mentioned in Ayurvedic Formulary of India, Part-I, 2nd Edition).
3. Powder the ingredients 1 to 27, except 11 and 25 and pass through the Sieve No.85
4. Roast Saindhava Lavana on moderate flame till the moisture is removed and pass through Sieve No.85.
5. Prepare Yavakshara (as mentioned in Ayurvedic Formulary of India, Part-I, 2nd Edition) and pass through Sieve No.85.
6. Add all the fine powders mentioned in above proportion to purified Guggulu and pound it well with adding small quantities of Ghrita in Stone mortar till it forms a soft mass.
7. Make the pills and dry at 40°C in oven.
8. Store in air tight glass container.

Dosage : 3 g

Anupana : Rasnasaptaka kvatha, Lasuna svarasa, honey.

Important therapeutic uses : Udararoga, amavata, adhyavata, krimi, dusta vrana, plihavridhi, gulma, anaha, arsa, agnimandhya, daurbalya, sandhigata, vata, majjagata vata.

IV. Category : CURNA

1). SUDARSANA CURNA

Reference : Bhaishajya Ratnavali, Jvaradhikara; 308-312 ½

Definition : Sudarshana Curna is a powder prepared from following ingredients.

Ingredients

S. No.	Sanskrit Name	Botanical Name	Part	Quantity
1.	Kaliyaka (Pita candana)	<i>Coscinium fenestratum</i> Colebr.	Heart wood	1 Part
2.	Rajani (Haridra)	<i>Curcuma longa</i> Linn.	rhizome	1 Part
3.	Devadaru	<i>Cedrus deodara</i> (Roxb.) Loud	Heartwood	1 Part
4.	Vaca	<i>Acorus calamus</i> Linn.	rhizome	1 Part
5.	Ghana	<i>Cyperus rotundus</i> Linn.	Tu.Root	1 Part
6.	Abhaya (Haritaki)	<i>Terminalia chebula</i> Retz.	Pericarp	1 Part
7.	Danvayasa	<i>Fagonia cretica</i> Linn.	Plant	1 Part
8.	Sringi (Karkatasringi)	<i>Pistacia intergerrima</i> Stew ex Brandis	Gall	1 Part
9.	Ksudra (Kantakari)	<i>Solanum xanthocarpam</i> Scharb & Wall	Plant	1 Part
10.	Mahausadha (Sunthi)	<i>Zingiber officinale</i> Rosc.	Rhizome	1 Part
11.	Trayanti (Trayamana)	<i>Gentiana kurroo</i> Royle.	Plant	1 Part
12.	Parpata	<i>Fumaria parviflora</i> Linn.	Plant	1 Part
13.	Nimba	<i>Azardirachta indica</i> A. Juss.	Stem bark	1 Part
14.	Grandhika (Pippalimula)	<i>Piper longum</i> Linn.	Root	1 Part
15.	Balaka (hrivera)	<i>Coleus vettiveroides</i> K.C.Jacob	Root	1 Part
16.	Sathi	<i>Hedychcum spicatum</i> Ham ex. Smith	Rhizome	1 Part
17.	Pauskara (Puskara)	<i>Inula racemosa</i> Hook.f	Root	1 Part
18.	Magadhi (Pippali)	<i>Piper longum</i> Linn.	Fruit	1 Part
19.	Murva	<i>Marsdenia tenacissima</i> Wight&Arn.	Root	1 Part
20.	Kutaja	<i>Holorrhena antidysentrica</i> Wall.	Stem bark	1 Part
21.	Madhuyasti (Yasti)	<i>Glycyrrhiza glabra</i> Linn.	Root	1 Part
22.	Sigrudbhava (Sigru)	<i>Moringa pterygosperma</i> Gaertn.	Seed	1 Part
23.	Indrayava (Kutaja)	<i>Holorrhena antidysentrica</i> Wall.	Seed	1 Part
24.	Vari (Satavari)	<i>Hemedesmus indicus</i> R.Br.	Root	1 Part

25. Darvi (Daru haridra)	<i>Berberis aristata</i> DC.	Stem	1 Part
26. Kucandana (Rakta candana)	<i>Pterocarpus santalinus</i> Linn.	Heart wood	1 Part
27. Padmaka	<i>Prunus serasaoides</i> D.Don	Heart wood	1 Part
28. Sarala	<i>Pinus longifolia</i> Linn.	Heartwood	1 Part
29. Usira	<i>Vetiveria zizanoides</i> Nash.	root	1 Part
30. Tvak	<i>Cinnamomum zeylanicum</i> Blume.	Stem Bark	1 Part
31. Saurastri	Alum		1 Part
32. Sthira (Salaparni)	<i>Desmodium gangiticum</i> DC	Plant	1 Part
33. Yamani (Yavani)	<i>Trachyspermum ammi</i> Sprauge.	Fruit	1 Part
34. Ativisha	<i>Aconitum heterophyllum</i>	Rt. Tuber	1 Part
35. Bilva	<i>Agele marmelos</i> Corr.	Rt/Stem bark	1 Part
36. Marica	<i>Piper nigrum</i> Linn.	Fruit	1 Part
37. Gandhapatra (Prasarani)	<i>Paederia foetida</i> Linn.	Leaf	1 Part
38. Dhatri (Amalaki)	<i>Emblica officinalis</i> Gaertn.	Pericarp	1 Part
39. Guduci	<i>Tinospora cordifolia</i> (Willd.)Miers	Stem	1 Part
40. Katuka	<i>Picrorrhiza kurroa</i> Royle.ex Brandis	Rhizome	1 Part
41. Citraka	<i>Plumbago zeylanica</i> Linn.	Root	1 Part
42. Patola	<i>Trichosanthes dioica</i> Roxb.	Plant	1 Part
43. Kalasi (Prisniparni)	<i>Uraria picta</i> Desv.	Plant	1 Part
44. Kairata (Kiratatikta)	<i>Swertia chirayata</i> (Roxb.ex.Flem). Karst	Plant	1 Part

Method of Preparation:

1. Take the raw materials of pharmacopoeial quality.
2. Powder the ingredients individually and pass through Sieve No.85.
3. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
4. Store in air tight container.

Dose : 2-4 g

Anupana : Warm water

Indication : Jvara, Vishama Jvara, Jirna jvara

(2) NIMBADI CURNA

Reference : Bhaishajya Ratnavali, Vatarakthadhikara; 31-33

Definition : Nimbadi Curna is a powder prepared from following ingredients.

S. No.	Sanskrit Name	Botanical Name	Part	Quantity
1.	Nimba	<i>Azadirachta indica</i> A.Juss.	Stem bark	48g
2.	Amrita	<i>Tinospora cordifolia</i> Willd.Miers	Stem	48g
3.	Abhaya	<i>Terminalia chebula</i> Retz.	Pricap	48g
4.	Dhatri	<i>Emblica officinalis</i> Gaertn.	Pericap	48g
5.	Somaraji	<i>Psoralea corylifolia</i> Linn.	Seed	48g
6.	Sunthi	<i>Zingier officinale</i> Rosc.	Rhizome	12 g
7.	Vidanga	<i>Embelia ribes</i> Burn.f	Fruit	12 g
8.	Edagaja	<i>Cassia tora</i> Linn.	Seed	12 g
9.	Kana	<i>Piper longum</i> Linn.	Fruit	12 g
10.	Yavani	<i>Tracyspermum ammi</i> Sprauge.	Fruit	12 g
11.	Uragandha	<i>Acorus calamus</i> Linn.	Rhizome	12 g
12.	Jeeraka	<i>Cuminum cyminum</i> Linn.,.	Fruit	12 g
13.	Katuka	<i>Picrorrhiza kurroa</i> oyle.ex Benth	Rhizome	12 g
14.	Khadira	<i>Acacia catechu</i> Linn.	Heartwood	12 g
15.	Saindhava	Rock salt	-	12 g
16.	Yavakshara	<i>Hordeum vulgare</i> Linn.	-	12 g
17.	Haridra	<i>Curcuma longa</i> Linn.	Rhizome	12 g
18.	Daru haridra	<i>Berberis aristata</i> DC.	Stem	12 g
19.	Musta	<i>Cyperus rotundus</i> Linn,	Rhizome	12 g
20.	Devadaru	<i>Cedrus deodara</i> Roxb	Heartwood	12 g
21.	Kushta	<i>Saussurea lappa</i> C.B.Clarke	Root	12 g

Method of Preparation

1. Take the raw materials of pharmacopoeial quality.
2. Powder the ingredients individually except 15 and 16 and pass through Sieve No.85.
3. Roast Saindhava lavana till moisture is removed and pass through sieve No.85
4. Mix all the ingredients in the proportion mentioned above to get homogeneous mixture.
5. Store in air tight container.

Dose : 1-3 mg

Anupana : Guduchi Kvatha, Warm water

Indication : Udara, amavata, vatarakta, kushta, pama, carma dala etc.,

V. Category : VATI**[1]. Sanjivani Vati**

Reference : Sarangdhara Samhita, Madhyama Khanda Adhyaya 7;18-19

Definition : Sanjivani vati is a tablet prepared from the following ingredients.
Ingredients

S. No.	Sanskrit Name	Botanical Name	Part	Quantity
1.	Vidanga	<i>Embelia ribes</i> Burn. f	Fruit	1 Part
2.	Nagara	<i>Zingiber officinale</i> Rosc.	Rhizome	1 Part
3.	Krishna	<i>Piper longum</i> Linn.	Fruit	1 Part
4.	Pathya	<i>Terminalia chebula</i> Retz.	Pericarp	1 Part
5.	Amalaki	<i>Emblica officinalis</i> Gaertn.	Pericarp	1 Part
6.	Bibhitaki	<i>Terminalia belerica</i> Roxb.	Pericarp	1 Part
7.	Vaca	<i>Acorus calamus</i> Linn.	Rhizome	1 Part
8.	Guduchi	<i>Tinospora cordifolia</i> (Willd.)Miers	Stem	1 Part
9.	Bhallatak Suddha	<i>Semecarpus anacardium</i> Linn.	Fruit	1 Part
10.	Visa (Vatsanabha)Suddha	<i>Aconitum ferox</i>	Root tuber	1 Part
11.	Gomutra	Cow's urine	-	Q.S.

Method of Preparation:

1. Take the raw materials of Pharmacopoeial quality.
2. Purify Bhallataka and Vatsanabhi.(Method mentioned in Ayurvedic Formulary, Part-I, -2nd Edition.)
3. Powder all the ingredients individually and pass through BSS Sieve No.85
4. Mix all the powders in the proportion mentioned above.
5. Triturate above mixture with Cow's urine till the mixture attains the pill consistency.
6. Dry at 40° C in oven.
7. Store in air tight container.

Dosage : 125 mg

Anupana : Ardraka swarasa, warm water

Indication : Ajirna, visuchi, gulma

(B) SIDDHA FORMUALTIONS

(1). PIRAMMĀNANTA PAIRAVAM

Reference: Citta vaittiyat tiraṭṭu, pp. 35,
The Siddha Formulary of India, pp. 93

Ingredients:

1. Veṅkāram (Borax)	Sodium- baborate	1 part
2. Kantakam	Sulphur	1 part
3. Manōcīlai (Red orpiment)	Arsenic disulphide	1 part
4. Aritāram (Yellow orpiment)	Arsenic trisulphide	1 part
5. Nāpi (Root)	<i>Aconitum ferox</i>	1 part
6. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	1 part
7. Iliṅkam (Cinnabar)	Red sulphide of Mercury	1 part
8. Incic cāru (Rhizome juice)	<i>Zingiber officinale</i>	Q. S.

Purification of drugs:

Veṅkāram

Fry it till water of crystallization gets evaporated and use.

Kantakam

Melt kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Manōcīlai

Grind it in ginger juice, lime juice and in cow's butter milk separately for 3 hours each. Dry it in sun and use.

Aritāram

Keep it inside the lime stone. Pour donkey's urine over the lime stone. After sometime take out Aritāram, wash and use.

Nāpi

Cut it into small pieces. Soak it in cow's urine for three days. Wash it in water and use.

Note: Daily change the Cow's urine.

Iliṅkam

Soak it in lime juice for 24 hours. Wash it with water and use.

Method of Preparation:

Purify drugs 1 to 7 and grind finely with item 8 for 24 hours and make 100 mg. pills and dry in shade.

Dose and Anupana: 1 to 2 Pills twice daily with honey or water

(2). TIRIKAṬUKUC CŪRANAM

Reference: Akattiyar paripūraṇam- 400, Stanza No. 300
The Siddha Formulary of India, pp 156

Ingredients:

1. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	1 part
2. Mīlaku (Fruit)	<i>Piper nigrum</i>	1 part
3. Tippili (Fruit)	<i>Piper longum</i>	1 part

Method of Preparation:

Powder each items separately, sieve and then mix them.

Dose and Anupana: 1 g twice daily with honey or water

(3). NILAVĒMPUK KUṬINĪR

Reference: Citta vaittiyat tiraṭtu, pp. 291
The Siddha Formulary of India, pp 161

Ingredients:

1. Nilavēmpuc camūlam(W.plant)	<i>Andrographis paniculata</i>	1 part
2. Veṭṭivēr (Root)	<i>Vetiveria zizanioides</i>	1 part
3. Vīlāmiccam vēr (Root)	<i>Cymbopogon jwarancusa</i>	1 part
4. Cantanat tūl (Wood powder)	<i>Santalum album</i>	1 part
5. Pēyppuṭal camūlam (W.plant)	<i>Trichosanthes cucumerina</i>	1 part
6. Kōraik kiḷ_ aṅku (Rhizome)	<i>Cyperus rotundus</i>	1 part
7. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	1 part
8. Mīlaku (Fruit)	<i>Piper nigrum</i>	1 part
9. Paṛpātakam (W.plant)	<i>Mollugo cerviana</i>	1 part

Method of Preparation:

Gently pound the drugs and mix. (Boil 25 gm. of powder with 500 ml. of water till the decoction is concentrated to 125 ml.)

Dose : 15 to 30 ml twice daily

(4). PIṆTA TAILAM

Reference: Guṇapātam, Part –II, pp 433

Ingredients:

1. Manjīṭṭi (Root)	<i>Rubia cordifolia</i>	50 gm.
2. Nannāri (Root)	<i>Hemidesmus indicus</i>	50 gm.
3. Veṅkuṅkiliyam (Resin)	<i>Shorea robusta</i>	25 gm.
4. Tēn meluku	Bee's wax	25 gm
5. Nalleṇṇey (Sesame oil)	<i>Sesamum indicum</i>	600 ml.
6. Nīr	Water	2.4 lit.
7. Kāti nīr	Vinegar	Q. S.

Method of Preparation:

Powder items 1 and 2 and sieve. Separate the fine and coarse powder. Make a paste with the fine powder using vinegar. Make a decoction with the coarse powder. Mix the paste and decoction, add sesame oil and prepare tailam. Put powder of item 3 and small pieces of item 4 in the filter, pour tailam gently until the drugs are dissolved completely.

Dose: External Application

(5). KAṘKPŪRĀTHY TAILAM

Ingredients:

1. Ōmam (Seed)	<i>Trachyspermum ammi</i>	16 parts
2. Karpūram (Camphor)	<i>Cinnamomum camphora</i>	1 part
3. Tēṅkai eṇṇai (Coconut oil)	<i>Cocos nucifera</i>	4 parts

Purification of drug:

Karpūram

Remove foreign bodies like dust etc. Keep it soaked in Ceṅkaḷ_ unīr flower juice for 24 minutes. Dry it sunlight and use.

Method of Preparation:

Boil items 1 and 3 and prepare tailam up to hard stage and filter. Mix Kar_ pūram with the tailam, when it is still hot. Store in tightly stoppered bottles.

Dose: External Application

(6). ILIṆKAC CENTŪRAM (No. 1)

Reference: Guṇapāṭam, part II and III, pp 159

The Siddha Formulary of India, pp 38

Ingredients:

1. Iliṅkam (Cinnabar)	Red sulphide of Mercury	35 gm
2. Āṛrut tummaṭṭic camūlac cāru (W. plant juice)	<i>Citrullus colocynthis</i>	1. 4 lits.

Purification of the drug:

Iliṅkam

Soak it in lime juice for 24 hours. Wash it with water and use.

Method of Preparation:

Heat item 1 in an earthen pan. Add item 2 in small quantities and continue heating till item 2 is totally used up. Wash and finely powder.

Dose and Anupana: 100 m g twice daily with honey or water

(7). KAURI CINTĀMAṆIC CENTŪRAM

Reference: Akattiyar vaittiya kāviyam- 1500, Stanza No. 741- 752

The Siddha Formulary of India, pp 40

Ingredients:

1. Iracam (Mercury)	Hydrargyrum	35 gm.
2. Kantakam	Sulphur	35 gm.
3. Porikāram (Borax)	Sodium biborate	35 gm.

Purification of the drugs:

Iracam

Grind it well with brick powder and turmeric powder separately for 24 hours each. Wash it in water and use.

Kantakam

Melt Kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Porikāram

Fry it till the water of crystallization gets evaporated and use.

Method of Preparation:

Grind items 1 and 2 and then grind with item 3 to a fine powder. Pack them in pieces of thick cloth into spherical bundles of the size of an areca nut. Place them on the ground in a line, cover them with sand, arrange 10 Cow dung cakes on them and ignite. When burnt and cooled, recover the contents of the packets and grind to a powder. The product will be of a black shade similar to that of a pūlāmpaḷ am.

Dose and Anupana: 100 mg twice daily with honey or water

(8). AMUKKARĀC CŪRANAM

Reference : Akattiyar vaittiya irattinac curukkam, Stanza No. 129- 130
The Siddha Formulary of India, pp 152

Ingredients:

1. Kirāmpu (Flower bud)	<i>Syzygium aromaticum</i>	1 part
2. Cirunākkappū (Flower bud)	<i>Cinnamomum wightii</i>	2 parts
3. Ēlam (Fruit)	<i>Elettaria cardamomum</i>	4 parts
4. Mīlaku (Fruit)	<i>Piper nigrum</i>	8 parts
5. Tippili (Fruit)	<i>Piper longum</i>	16 parts
6. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	32 parts
7. Amukkarā (Root)	<i>Withania somnifera</i>	64 parts
8. Carkkarai	Sugar	128 parts

Method of Preparation:

Clean items 1 to 7 and powder each of them and mix. Add sugar (item 8) and mix well.

Dose and Anupana: 1 g thrice daily with honey or water

(9). ĀRUMUKA CENTŪRAM

Reference: Citta vaittiyat tiraṭtu, pp 138

The Siddha Formulary of India, pp 36

Ingredients:

1. Vālai iracam	Mercury obtained from Cinnabar	5 parts
2. Kāntam (Magnet)	Magnetic oxide of iron	7 parts
3. Kantakam	Sulphur	9 parts
4. Venkāram (Borax)	Sodium baborate	8 parts

5. Intuppu (Rock salt)	Sodium chloride impura	4 parts
6. Ayappoti (Powder of iron)	Iron filings	12 parts
7. Katrazhai chaāru	Aloe vera	Q.s.

Purification of the drugs:

Kantam

Heat it till it becomes red hot. Then dip it in horse gram decoction. Repeat the process for 21 times.

Kantakam

Melt Kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Venkāram

Fry it till water of crystallization gets evaporated and use.

Method of Preparation:

Powder and keep each of the items listed from 2 to 6 separately. Grind item 1 with the powder of item 3 and then add the other powders and grind with the addition of item 7 for 5 days. Finally make cakes and dry. Place them in a wide earthen trough, cover with another identical trough and seal seven times with clay smeared cloth ribbon. Heat on an oven for 24 hours, allow to cool and take the centūram which will be like māṭṭlam pū in color. Powder it and store.

Dose and Anupana: 100 mg thrice daily with honey or water

(10). PAVALA PARPAM (NARPAVALA PARPAM)

Reference: Akattiyar vaittiya pūraṇam- 205, Stanza No. 62- 65

The Siddha Formulary of India, pp 28

Ingredients:

1. Narpavalam	Coral	Q.s.
2. Kāṭṭu Muyal Irattam	Blood of the jungle rabbit	Q.s.

Purification of drug:

Narpavalam

Soak it in lime juice for a day. Wash and use.

Method of Preparation:

Put item 1 in a flask or crucible, add item 2, seal and calcine. Take the product and keep exposed to the atmosphere for two days, so that it readily crumbles. Powder and store.

Dose and Anupana: 50m g thrice daily with honey or water

(11).NĀKA PARPAM

Reference: Citta vaittiya tiraṭṭu, pp 122
The Siddha Formulary of India, pp 26

Ingredients:

1. Nākam (Tutta nākam)	Zinc	Q.s.
2. Karicālaic camūlac cāru	<i>Eclipta prostrata</i>	Q.s.

Purification of drug:

Nākam

Melt the metal and pour cautiously into Iluppai ney (Mahua oil) mixed with some sal ammoniac. Recover metal and repeat the process 20 more times.

Method of Preparation:

Put item 1 in a heavy earthen pan and heat. When it is molten add item 2 little by little for 12 hours so that a calx results.

Dose and Anupana: 100 -200 mg twice daily with honey or water

(12).VACANTA KUCUMĀKARAM

Reference: Citta vaittiya tiraṭṭu, pp 42
The Siddha Formulary of India, pp 94

Ingredients:

1. Ilinkam (Cinnabar)	Red sulphide of Mercury	8.75 gm.
2. Venkāram (Borax)	Sodium biborate	8.75 gm.
3. Ilavankam (Flower bud)	<i>Syzygium aromaticum</i>	8.75 gm.
4. Tippili (Fruit)	<i>Piper longum</i>	8.75 gm.
5. Koṭṭam (Tuber)	<i>Saussurea costus</i>	8.75 gm.
6. Akkarākāram (Root)	<i>Anacyclus pyrethrum</i>	8.75 gm.
7. Atimaturam (Root)	<i>Glycyrrhiza glabra</i>	8.75 gm.
8. Kōrōcaṇai (Gall stone of the ox)	<i>Bos taurus</i>	4. 2 gm.
9. Paccaik kaṇṇūram	<i>Borneo camphor</i>	4. 2 gm.
10. Kunkumappū (Saffron)	<i>Crocus sativus</i>	4. 2 gm.
11. Incic cāru (Rhizome juice)	<i>Zingiber officinale</i>	Q.s.
12. Tāyp pāl	Mother's milk	Q.s.

Purification of drugs:

Ilinkam

Soak it in lime juice for 24 hours. Wash it with water and use.

Venkāram

Fry it till water of crystallization gets evaporated and use.

Paccaik karpūram

Remove foreign bodies like dust etc. Keep it soaked in Cenkalunīr flower juice for 24 minutes. Dry it sunlight and use.

Method of Preparation:

Grind drugs 1 to 10 with the addition of item 11 for 2 days and item 12 for another 2 days. Make 100 mg. pills and dry in shade.

Dose and Anupana: 1 g twice daily with honey or water

(13).TĀLICĀTIC CŪRAṆAM

Reference: Citta vaittiyat tiraṭṭu, pp 228- 229

The Siddha Formulary of India, pp 155

Ingredients:

1. Tālicap pattiri (Leaves)	<i>Taxus baccata</i>	1 part
2. Ilavancap paṭṭai (Bark)	<i>Cinnamomum veru</i>	1 part
3. Ēlam (Fruit)	<i>Ellettaria cardamomum</i>	1 part
4. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	1 part
5. Atimaturam (Root)	<i>Glycyrrhiza glabra</i>	1 part
6. Perunkāyam (Oleo-gum- resin)	<i>Ferula foetida</i>	1 part
7. Nellimūḷli (Dried fruit)	<i>Phyllanthus emblica</i>	1 part
8. Koṭṭam (Root)	<i>Saussurea costus</i>	1 part
9. Tippili (Fruit)	<i>Piper longum</i>	1 part
10. Karuncīrakam (Seed)	<i>Nigella sativa</i>	1 part
11. Catakuppai (Fruit)	<i>Anethum sowa</i>	1 part
12. Ōmam (Fruit)	<i>Trachyspermum ammi</i>	1 part
13. Narcīrakam (Fruit)	<i>Cuminum cyminum</i>	1 part
14. Tippilik kaṭṭai (Stem)	<i>Piper longum</i>	1 part
15. Kirampu (Flower bud)	<i>Syzygium aromaticum</i>	1 part
16. Cātipattiri (Aril)	<i>Myristica fragrans</i>	1 part
17. Karkātakacinki (Gall)	<i>Rhus succedanea</i>	1 part
18. Cātikkāy (Kernel)	<i>Myristica fragrans</i>	1 part

19. Tānrikkāyt tōl (Fruit rind)	<i>Terminalia belerica</i>	1 part
20. Kaṭukkāyt tōl (Fruit rind)	<i>Terminalia chebula</i>	1 part
21. Caṭāmāncil (Root)	<i>Nardostachys grandiflora</i>	1 part
22. Mjḷaku (Fruit)	<i>Piper nigrum</i>	1 part
23. Cirunākappū (Flower bud)	<i>Cinnamomum wightii</i>	1 part
24. Caṇpaka mokku (Flower bud)	<i>Michelia champaka</i>	1 part
25. Vāyviṭankam vittu (Seed)	<i>Embelia ribes</i>	1 part
26. Ilavanka pattiri (Leaf)	<i>Cinnamomum tamala</i>	1 part
27. Kottumalli vittu (Seed)	<i>Coriandrum sativum</i>	6 parts
28. Carḱkarai	Sugar	12 parts

Method of Preparation:

Clean, dry in sun, gently fry and finely powder items 1 to 27, sieve the powder and mix with item 28.

Dose and Anupana: 1-2 tab twice daily with honey or water

(14).VISHṆU CAKKARAM

Reference: Vaittiya cillaraik kōrvai, pp 249)

The Siddha Formulary of India, pp 95

Ingredients:

1. Iracam (Mercury)	Hydrargyrum	1 part
2. Ilinkam (Cinnabar)	Red sulphide of Mercury	1 part
3. Kantakam	Sulphur	1 part
4. Nāpi (Root)	<i>Aconitum ferox</i>	1 part
5. Palakaraip parpam	Calx of Cowrie shell	1 part
6. Pāl tuttam (White vitreol)	Zinc sulphate	1 part
7. Tālakam (Yellow orpiment)	Arsenic trisulphide	1 part
8. Kāntam (Magnet)	Magnetic oxide of iron	1 part
9. Manōcīlai (Red orpiment)	Arsenic disulphide	1 part
10. Vēppam palac cāru (Fruit juice)	<i>Azadirachta indica</i>	Q.s.

Purification of drugs:

Iracam

Grind it well with brick powder and turmeric powder separately for 24 hours each. Wash it in water and use.

Ilinkam

Soak it in lime juice for 24 hours. Wash it with water and use.

Kantakam

Melt Kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Nāpi

Cut it into small pieces. Soak it in cow's urine for three days. Wash it in water and use.

Note: Daily change the Cow's urine.

Tālakam

Keep it inside the lime stone. Pour donkey's urine over the lime stone. After sometime take out Tālakam, wash and use.

Kāntam

Heat it till it becomes red hot. Then dip it in horse gram decoction. Repeat the process for 21 times.

Manōcīlai

Grind it in ginger juice, lime juice and in cow's butter milk separately for 3 hours each. Dry it in sun and use.

Method of Preparation:

Grind drugs 1 to 9 with the addition of item 10 till a fine pill rolling consistency is reached. Make 130 mg. pills and dry in shade.

Dose and Anupana: 1-2 tab twice daily with honey or water

(15).CAṆṬAMĀRUTAC CENTŪRAM

Reference: Citta vaittiyat tiraṭṭu, pp 151

The Siddha Formulary of India, pp 37

Ingredients:

1. Ilinkam (Cinnabar)	Red sulphide of Mercury (Natural)	2 parts
2. Pūram (Calomel)	Hydrargyrum subchloride	1 part
3. Vīram (Corrosive sublimate)	Mercuric chloride	½ par
4. Kantakam	Sulphur	½ part

5. Iracac centūram	Red sulphide of Mercury (Artificial)	½ part
6. Tāyp pāl	Mother's milk	Q.s

Purification of drugs:

Ilinkam

Soak it in lime juice for 24 hours. Wash it with water and use.

Pūram

Suspend calomel on a mixture (10 gm. each of black betel leaf and black pepper made into a paste and dissolved in 2 lits. of water) and boil till the liquid is reduced to ¼ and then wash and dry.

Vīram

Steam the drug with the tender coconut water and camphor mixture for half an hour. Dry in sun.

Kantakam

Melt Kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Iracac centūram

Soak it in lemon juice for a day. Wash and dry.

Method of Preparation:

Powder item 4 and then item 3, mix and grind with item 2, then incorporate item 5 and lastly item 1. Grind with the addition of item 6, dry and powder.

Dose and Anupana: 100mg twice daily with honey or water

(16). AYAVĪRAC CENTŪRAM

Reference: Guṇapāṭam, part II and III, pp 58

The Siddha Formulary of India, pp 37

Ingredients:

1. Ayappodi (Iron powder)	Iron filings	35 gm.
2. Iracam (Mercury)	Hydrargyrum	35 gm.
3. Vīram	Mercuric chloride	17.5 gm.
4. Navāccāram (Salt ammonia)	Ammonium chloride	17.5 gm.

Purification of drugs:

Iracam

Grind it well with brick powder and turmeric powder separately for 24 hours each. Wash it in water and use.

Vīram

Steam the drug with the tender coconut water and camphor mixture for half an hour. Dry in sun.

Navāccāram

Grind it in Goat's urine. Dry it and use.

Method of Preparation:

Grind items 1 and 2. Then add to it items 3 and 4 and grind for 3 days when a red product results. Put this into a new earthen pan and fry till the material attains to color of murukkampū. Immediately remove from the oven and take the medicine.

Dose and Anupana: 100mg twice daily with honey or water

(17). CANKU PARPAM

Reference: Citta vaittiyat tiraṭṭu, pp 123

The Siddha Formulary of India, pp 23

Ingredients:

1. Ākāyat tamarai ilaik karkam (Leaf paste)	<i>Pistia stratiotes</i>	Q.s
2. Ūtu canku (Conch)	<i>Xonchus pyrum</i>	Q.s.

Purification of drug:

Ūtu canku

Take equal parts by weight of lime stone and alkaline earth. Add 8 parts of water stir and keep aside. Take the clear water. Put Ūtu canku into the water, and boil. Wash and dry.

Method of preparation:

Make a paste of item 1, apply on item 2, dry in sun for a day and calcine.

Dose and Anupana: 100-200mg twice daily with honey or water

(18). VĀTA KĒCARIT TAILAM

Reference: Tēraiyaṛ taila varkkac curukkam, pp. 48, Stanza No.9

The Siddha Formulary of India, pp 112

Ingredients:

1. Caturakṣāḷlic cāru (Juice)	<i>Euphorbia antiquorum</i>	1.400 lits.
2. Nocchi ilaic cāru (Leaf juice)	<i>Vitex negundo</i>	1.400 lits.
3. Talutalai ilaic cāru (Leaf juice)	<i>Clerodendrum phlomidis</i>	1.400 lits.
4. Vellāṭṭup pāl (Milk of the goat)	<i>Capra aegagrus L.</i>	1.400 lits.
5. Erukkaṇpāl (Latex)	<i>Calotropis gigantea</i>	1.400 lits.
6. Nalleṇṇey (Sesame oil)	<i>Sesamum indicum</i>	1.400 lits.
7. Āmaṇaku eṇṇey (Castor oil)	<i>Ricinus communis</i>	1.400 lits.
8. Kaṭukkāyt tōl (Fruit rind)	<i>Terminalia belerica</i>	2.5 gm.
9. Kāṭṭu mīlaku (Fruit)	<i>Piper aurantiacum</i>	2.5 gm.
10. Veḷlaippūntu (Bulb)	<i>Allium sativum</i>	2.5 gm.
11. Perunkāyam (Oleo-gum-resin)	<i>Ferula foetida</i>	2.5 gm.
12. Nellikkāy kantakam	Allotropic form of sulphur	2.5 gm.
13. Kōṭṭam (Root)	<i>Saussurea costus</i>	2.5 gm.
14. Cukku (Dried rhizome)	<i>Zingiber officinale</i>	2.5 gm.
15. Mīlaku (Fruit)	<i>Piper nigrum</i>	2.5 gm.
16. Tippili (Fruit)	<i>Piper longum</i>	2.5 gm.
17. Kaṭuku (Seed)	<i>Brassica nigra</i>	2.5 gm.

Purification of drugs:

Nellikkāy kantakam

Melt kantakam in a spoon with butter. Pour into Cow's milk. Repeat for a total of 30 times. Wash in water and dry.

Method of Preparation:

Make a fine paste of items 8 to 17 by grinding with some amount of item 4. Mix it with the remaining amount of item 4 and also items 1 to 3 and 5 to 7. Boil and make tailam.

Dose: For external Use

(19).ILAKU VIṬAMUṬṬIT TAILAM

Reference: Tēraiṅgar taila varkkac curukkam, pp. 101, Stanza No.79

The Siddha Formulary of India, pp 105

Ingredients:

1. Nalleṅṅey (Sesame oil)	<i>Sesamum indicum</i>	2.800 lits
2. Eṭṭik koṭṭai (Seed)	<i>Strychnos nux- vomica</i>	88 gm.
3. Vellaṭṭup pāl (Milk of the goat)	<i>Capra aegagrus L.</i>	Q.s.
4. Veḷḷaippūntu (Bulb)	<i>Allium sativum</i>	88 gm.
5. Āyil paṭṭait tūl (Bark powder)	<i>Holoptelea integrifolia</i>	53 gm.

Method of Preparation:

Soak item 2 in item 3 for 12 hours and make shavings. Mix with the other materials and boil till the solid constituents show a reddening. Filter and take for use.

Dose: For external Use

(19). VĀTA CURAK KUṬINĪR

Reference: Citta vaittiya tiraṭṭu, pp 290

The Siddha Formulary of India, pp 162

Ingredients:

1. Perunkāncori vēr (Root)	<i>Laportea crenulata</i>	35 gm.
2. Tippili mūlam (Root)	<i>Piper longum</i>	35 gm.
3. Cittira mūlam (Root)	<i>Plumbago zeylanica</i>	35 gm.
4. Cankam vēr (Root)	<i>Azima tetracantha</i>	35 gm.
5. Veḷḷerukkuc camūlam(W.plant)	<i>Calotrophis gigantea</i>	35 gm.
6. Nilavempuc camūlam(W.plant)	<i>Andrographis paniculata</i>	35 gm.
7. Murukkan viṭṭu (Seed)	<i>Butea monosperma</i>	35 gm.
8. Kalarcci vēr (Root)	<i>Caesalpinia bonduc</i>	35 gm.
9. Kaṅṅatiric camūlam (W. Plant)	<i>Solanum surattense</i>	35 gm.
10. Pēramutti vēr (Root)	<i>Pavonia odorata</i>	35 gm.
11. Cittarattai (Rhizome)	<i>Alpinia officinarum</i>	35 gm.
12. Māvīlinkam vēr paṭṭai (Root bark)	<i>Crataeva magna</i>	35 gm.
13. Pērarattai (Rhizome)	<i>Alpinia galanga</i>	35 gm.
14. Cirukāncori vēr (Root)	<i>Tragia involucrata</i>	35 gm.
15. Catakuppai (Fruit)	<i>Anethum sowa</i>	35 gm.
16. Viṣṅukarantaic camūlam (W.plant)	<i>Evolvulus alsinoides</i>	35 gm.
17. Cirutēkku (Root)	<i>Clerodendrum serratum</i>	35 gm.

18. Cukku	(Dried rhizome)	<i>Zingiber officinale</i>	35 gm.
19. Tippili	(Root)	<i>Piper longum</i>	35 gm.
20. Cevviyam	(Root)	<i>Piper nigrum</i>	35 gm.
21. Koṭṭam	(Root)	<i>Saussurea costus</i>	35 gm.

Method of preparation

Clean the drugs powder coarsely and mix. Divide the mixture into 21 equal parts. For making decoction, add 340 ml. of water with one part (35 gm.) of the powder and boil down to one fourth.

Dose : 15 to 30 ml twice daily

Report and Recommendations of National workshop on the management of Chikungunya through Ayurveda and Siddha held on 9th & 10th March 2007 at NIMHANS, Bangalore.

OBJECTIVES

The principle objective of the workshop was to make a platform for the Ayurvedic / Siddha physicians with Modern scientists to discuss and formulate a National strategies, protocols and therapies for Chikungunya, which would be highly useful for the provision of Health care facilities and Research strategies for future endeavors. Moreover, the workshop could also provide an opportunity to the participants to exchange their academic knowledge and clinical experiences.

A total number of 175 registered delegates, which includes 35 Resource persons, 30 P.G. Scholars and 115 participants from Ayurveda, Siddha and Modern medical sciences were attended the workshop. Among them 20 delegates were from Kerala, 25 delegates from Andhra Pradesh, 20 participants from Tamilnadu and 115 delegates from Karnataka including Regional Research Institute & Advanced Research Unit Technical staff.

EVENTS:

DAY 1

The Programme was started with invocation followed by lightening of lamp. Key note address & welcome speech has been given by **Dr. K. Gopakumar**, Organizing Secretary and Asstt. Director Incharge of R.R.I (Ay.), Bangalore. The workshop was inaugurated by **Dr. D. Nagaraja**, Director & Vice Chancellor, NIMHANS, Bangalore and presided by **Dr. P. S Prabhakaran**, Vice Chancellor, Rajeev Gandhi University of Health Sciences, Bangalore. In their speech, they have expressed that, though Indian system of medicine has become very popular in the Western world, there is an immense scope in Ayurvedic & Siddha system's Research field. They have mentioned that, the major draw back of traditional system of medicine is, "since it is centuries old system and the classical methodologies are being followed with no new innovations or variations are being incorporated so far." Hence, these systems are lacking the modern medical discipline's status. Moreover, in Ayurveda and Siddha there is no proper Standard/ uniform methodologies, Standardized treatment procedures and drugs.

They have also expressed that, there is no proper treatment for Chikungunya in Modern medicine and also pointed out the abuse of Antibiotics, the most serious mistake that man can commits.

Dr. A. Narayana, Deputy Director (Tech), CCRAS, **Dr. G. Veluchamy**, Director, CRI (S), Chennai have emphasized, in general, about making well coordinated technical platform for formulating effective Ayurvedic and Siddha therapies, after thorough and systematic,

globally accepted protocols and evaluation schemes, so that we can formulate a National strategy for prevention and cure of epidemic disease like Chikungunya.

Dr.D.Sudhakar, A.D (Ay.), A.R.U, Bangalore expressed vote of thanks.

TECHNICAL SESSIONS:

During Day 1, after the inaugural function, a total number of 5 sessions were conducted. **In the 1st session**, the experts, **Dr. V Ravi**, Prof. & Head, Dept. of Neurovirology, NIMHANS, Bangalore, **Dr. M. B Maiya**, Retd. Principal, Bangalore Medical College & Director, Maiya Multispeciality Hospital, Bangalore, **Vaidya Samba Murthy Gayatri**, Chief Physician, Ayurveda Academy, Bangalore and **Dr.G. Veluchamy**, Director, CRI (S), Chennai have presented scientific papers on Chikungunya. Their papers were on the topics of Virology & Laboratory Diagnosis, Chikungunya clinical features & Management, An insight on current trends in the diagnosis and management of Chikungunya: An Ayurvedic view and an insight on current trends in the diagnosis and management of Chikungunya : Siddha view respectively.

This Session was chaired by **Dr. J. R. Krishna Murthy**, the eminent Siddha Physician and Ex. S.A.C. Chairman (Siddha), CCRAS, New Delhi and Co-Chaired by **Dr. Rangesh Paramesh**, Director, R& D, Himalaya Drugs, Bangalore.

Prof. Dr. V. Ravi, has given a vivid picture about the classification, structure, natural cycle and replication of CHIK virus and its vectors, Pylogenetic & Molecular epidemiological features of Chikungunya.

Dr. M.B Maiya, has explained epidemiology, clinical picture, differential diagnosis with Dengue Fever, management, prevention and future strategies of Chikungunya.

Vaidya Sambha Murthy Gayatri emphasized on Ayurvedic description in understanding its pathogenesis, treatment principles of Abhisangaja Jwara, and clinical plan of Ayurvedic treatment. During the out break of Chikungunya, the Ayurvedic Academy conducted several Health camps in affected rural areas of Karnataka under his able guidance and treated more than 3, 500 (Three thousands five hundred) patients. He expressed that the line of treatment of Abhisangaja, Agantuja Jwara has been given significant curative results. The following drugs were used effectively in the management of Chikungunya.

- * Amrutha sanjeevani syrup
- * Guduchi ghritha
- * Shadanga paneeya
- * Musta parpataka Kashaya
- * Sanjeevani vati in guduchi kashaya.

Dr. G. Veluchamy in his deliberation, he gave a vivid picture about the classification of disease as per Siddha system of medicine based on symptoms, vitiation of humors, and line of treatment. The Siddha drugs Viz. Thrithosa mathirai, Bramanatha bairavam and Vasanthkusmakarajam mathirai, Vishnuchakara mathirai, Vatha Rakshasam mathirai, Kutineer, Vathasura Kutineer etc. could be used successfully in the management of Chikungunya according to his experiences.

In the 2nd technical session, 5 Ayurvedic experts who were from Karnataka, Kerala and Andhra Pradesh presented their clinical experiences on management of Chikungunya. **Dr. S. Sarangapani**, Asstt. Professor, Dept. of Shalya, Government Ayurvedic College, Hyderabad chaired the session and Co Chaired by **Dr. S. Gopakumar**, Lecturer, Government Ayurveda College, Kannur, Kerala.

Dr. Prasanna Rao, Principal, SDM College of Ayurveda, Hassan has explained the Ayurvedic approaches towards Chikungunya includes Ayurvedic purview, mode of treatment etc. He had carried out clinical study at well-known SDM Hospital during and after the outbreak of Chikungunya. The used trial drugs were classified in two groups. In first group Simhanada guggulu, Tribhuvana keerthi rasa, Rasna Eranda kashaya, Vishagarbha taila and Dashanga lepa, where as in second group, Amruthadi guggulu, Maharasnadi kashaya, Kottam chukkadi taila and jatamayadi lepa with Marmani vati were used. He concluded that the above said drugs were effective in relieving symptoms of Chikungunya. He also emphasized the principles of Jwara in acute stages and Vathashonitha chikitsa and its treatment in chronic stage of Chikungunya.

Dr. B.S Sridhar, Prof. & Head Dept. of P.G Studies in Panchakarma, GAMC, Bangalore presented a paper on his clinical experiences, on the management of Chikungunya. In his presentation, the Ayurvedic drugs were used according to the stage of the disease. In acute stage Samshamani vati, Rasna Eranda kwatha and in post Chikungunya stage, Sadyovirechana with Nimba Amruthadi along with castor oil followed by Amruthadi guggulu, Rasna Eranda kwatha, Kumari Haridra lepa were used. In chronic stage, Snehapana with Guggulu Tiktaka ghritha, Virechana with Nimba Amruthadi castor oil, Ghrithaksheeravasthi for 16 days, Amruthadi guggulu, Rasna Eranda kwatha, Jatamayadi lepa and Rasayana treatment with Yogaraja guggulu lehya, Guduchi Tablet, Ashwagandha, Bala, Yashtimadhu Ksheerapaka were prescribed and found effective.

Dr. Prashanth A. S., Asstt. Professor, Dept. of Kayachikitsa, Ayurveda Mahavidyalaya, Hubli has highlighted the description of life cycle and role of Mashaka (Mosquito), Janapadodhwamsa vikara and Agantuja Jwara and their types in Ayurveda. The treatment of Chikungunya was based on the principles of Sannipata jwara, Vishama jwara and Samavatha in Ayurveda. The mode of action of the drugs was selected based on their properties such as Jwaraghna, Vedanaasthapana & Sothaghna etc. The preventive medication through use of Sanjeevani vati with cumin seeds and tulasi boiled in water were found much effective. The Chikungunya effected areas were fumigated with drugs having the properties like Krimighna, Dhupana yogas. Total 465 cases were treated at Ayurveda College Hospital, Hubli during June to September 2006. All the patients were treated according to the clinical conditions with following drugs.

1. Sudarshana churna
2. Agnitundi vati
3. Vatagajankusha ras
4. Punarnava guggulu
5. Mukka mukkadukadi gutika
6. Hinguleshwara ras

In post Chikungunya, in which rheumatic problems were predominant, Amrutharishtha Sanjeevani vati and Pinda tailam for local application were found much effective.

Dr.P.S.Chandran, Sr. Medical Officer, Government Ayurvedic Hospital, Cherthala, Distt. Alleppy, Kerala has presented a paper on the basis of his experience during the recent out break of Chikungunya and treatment measures adopted through medical camps. The curative strategy was made as per the following criteria.

- 1).Controlling of fever and its associated systems.
- 2). Controlling of post fever arthritis.
- 3). Prevention of disease as a whole.

During the health camps, the formulations such as Amrutaristam, Vettumaran gutika, Sudarshan tablet, Bilvadi gutika, Dhanvantaram gutika, Talispatradi churnam, Vilwadi lehyam, Punarnavasavam, etc. were prescribed for controlling fever and associated symptoms.

In Post fever arthritis in **Vata predominance condition**,

1. Dasamula kashayam
2. Indukantha kashayam
3. Balapunarnavadi kashayam
4. Yogaraja guggalu
5. Karpuradi taila for external use were used by the Ayurvedic physicians in health camps.

In Pitta predominance condition

1. Guluchyadi Kashaya
2. Punarnavadi kashaya
3. Amruta Guggulu
4. Chandra Prabha vati
5. Jatamayadi lepa

and in **Kapha predominance condition**

1. Amrutottaram kashayam
2. Guggalu tiktaka kashayam
3. Rasna Saptaka kashayam
4. Gokshuradi Guggulu
5. Nagaradi Churnam for local application were also found equally effective.

The preventive measures to increase the immunity by administration of Sudarshana tablet control of mosquitoes with mosquito repulsion using Aparajitha dhoopam and killing of larvae with mixture of tobacco leaves, neem oil, soap powder etc. sprinkled in cesspools.

Dr. M. Srinivasulu, Professor, Dept. of Basic principles, Anantha Laxmi Government Ayurvedic college, Warangal (A.P) has expressed his views about clinical diagnosis according

to the principles of Ayurveda and he considered that Amavata symptomatology is quite similar with Chikungunya. Hence, he has applied the same chikitsa principles on Chikungunya affected patients and observed better results. In acute fever condition Mrityunjaya ras 250mg, Godanthi mishran 2 tab tds, and after fever subsides, Amavatari ras 250mg, Lasunadi vati 2tab tds, Gandharvahastadi kashaya 30-40ml tds were used. In chronic cases, Simhanada guggulu 2 tab BD, with powdered mixture of Lasuna, Nirgundi, Suranjana, Shallaki & Vatagajankusha rasa were also given in dosage of 500 mg in addition to Gandharvahastadi quatha 30 - 40 ml TDS. He also expressed his observation about use of Simsapa (*Dalbergia sisso* Roxb.) 3 – 4 leaves powder twice a day found highly effective in tribal & rural areas of Khammam district, A P. which further required scientific evaluation and thorough standardization.

The 3rd technical session was chaired by **Dr. P. H. C. Murthy**, Professor, Dept. of P. G. Studies in Rasashastra, Government Ayurveda College, Vijayawada (A.P) and Co-chaired by **Dr. Anandan** R.O (Siddha), CRI (S), Chennai. In this session two speakers from Siddha system of medicine presented their views and experiences. **G. Ganapathy**, a siddha expert from Chennai has explained the choice of drugs in Siddha medicine in the management of Chikungunya as

Vasanta kushumakar mathirai, Amukkara churnam, Nilavembu kudineer, Shivappu kukkil tailam for external application etc.

Apart from these, he also narrated the need of preventive measures of Chikungunya with and active mosquito breeding control measures.

The next speaker **Dr. J. R. Krishnamurthy** a senior Siddha physician has shared his clinical experiences that Chikungunya is more or less similar to the features of Valisuram, as described in Yoogi Chintamani an important Siddha text. During and post chikungunya epidemic, two different drugs for internal & external use were advised.

In first group: 1). Nilavembu (*Andrographis paniculata*) a single herbal decoction was used in control of the bouts of pyrexia and chills.

2). Vishnu chakkara mathirai, a compound mineral preparation was also used to arrest the progressive viral infection.

3). Surface application with oil water emulsion of Thazhuthazai (*Clerodendron phlomoides*), Katrazhai (*Aloe vera*), camphor and guggulu over the painful joints followed by local hot water fomentation etc was found effective in the management in Chikungunya during his vast experience.

The 4th technical session was chaired by **Dr. B. Sudhi kumar**, Reader, Government Ayurveda College, Tripunithura, Kerala and co-chaired by **Dr. A. K. Manoj Kumar**, Reader, V. S. P. S. Ayurveda College, Kottakkal. There were three speakers from Ayurveda and one from Siddha system of medicine.

Dr. Lalita B. R. Asstt. Professor, Government Ayurvedic College, Bangalore explained Ayurvedic perspective of Chikungunya and compared with symptoms Sannipataja Vishama Jwara. The following prophylactic measures were narrated.

1. Snartha Jala with Nirgundi patra, Dattura patra
2. Dhupana with Aranya tulasi patra, Nimba taila, Drona pushpi, Dhattur patra and Sapta chada.
3. Astanga dhoopa with gritha as a jwaranasaka.
4. Abhanga with Tikta gritha
5. Udvartana with Vacha Haritaki churna

Use of mosquito repellents such as Tulasi herbal liquid, Tulasi mosquito candles, Cow dung with tulasi for fumigation also were discussed. These current methods were reported to be much effective.

Dr. M. L. Naidu elaborately discussed about Janapadodvansa (Epidemics in Ayurveda) and its treatment approaches for controlling epidemics in general. As per his version, Bhutabhisangaja jwara, Sandhigata sannipata jwara and Agantuja vishama jwara treatment principles can be well adopted in the effective management of Chikungunya. Some effective Ayurvedic formulations viz.,

1. Kiratakadi kashayam
2. Sanjeevani vati
3. Amritastaka kashayam
4. Maharasnadi kashayam
5. Ayush-64
6. Shadanga paneeyam
7. Maha sudarshana churnam
8. Godanthi bhasma
9. Pravala pishti
10. Guduchi satwa
11. Maha yogaraja guggulu
12. Kaishore guggulu
13. Simhanada guggulu
14. Santapanashaka vati etc. according to the stage and severity of the illness were also suggested by him.

Dr. G. Vinod kumar, Prof. & Head, Dept. of Panchakarma, Government Ayurvedic College, Trivandrum has presented a paper on “possible treatment approaches for control of epidemic diseases w.r.t. Chikungunya” and explained Janapadodhwansa in Ayurveda caused by pollution of Vayu, Jala, Desha, Kala, which are mainly caused by unrighteous way of leading life. He presented the details of the mosquito repellent drugs and lotion for controlling mosquitoes & Larvae. The lotions have been formulated prepared and tested by Government Ayurvedic college, Trivandrum. These preparations have been used extensively in Chikungunya affected areas in Kerala. Dr. Vinod kumar has explained the preventive measures and treatment methods elaborately.

The 4th Speaker was from Siddha medicine, **Dr. V. M. Ravichandran**, Medical Officer, SKM Health & Mind Welfare Charity Trust, Erode (T.N.) narrated some of his study observations

in the management of Chikungunya. A total of 165 cases were studied with selective Siddha drugs such as Nilavembu Kudineer churnam - 5 g decoction BD, Chandamarutha chanduram - 50mg OD with honey, Brahmananda bhairavam tab 1BD with water for 10 days. The assessment was made based on clinical features like Fever, Joint pains, Rashes, etc. He said that, the out come positive result was 77% of the subjects with marked improvement.

The 5th Technical session was on Expert group meet for finalization of selected Ayurvedic and Siddha drugs in the management of Chikungunya. This session was moderated by **Dr.G.Veluchamy**, Director, CRI(S), Chennai and **Dr. S. Gopakumar**, Lecturer, Government Ayurveda College, Kannur (Kerala). The Ayurvedic experts chaired the session were 1). **Dr. G. Vinod kumar**, Prof. & Head, Dept. of Panchakarma, Government Ayurvedic College, Trivandrum, 2). **Dr. N. Jaya**, Asstt. Director Incharge, CRI (Ay) , Cheruthuruthy 3).**Dr. B. Sudhi kumar**, Reader, Government Ayurveda College, Tripunithura, Kerala and among Siddha experts 4). **Dr. Thyagarajan**, Associate Professor, National Institute for Siddha, Chennai and 5). **Dr. Kanagarajan**, R.O (S), CRU (S), Palayamkottai.

An Ayurvedic physician from the participants asked about how Bilvadi gutika, which is an Agada drug, can it be indicated in Chikungunya? **Dr.Gopakumar** answered that, Bilvadi gutika is dushivishara in action and in Bhutabhishanga as well as in acute & infectious diseases and it must be useful. **Dr. N. Jaya** has recommended a compound formulation “Swasthya Rakshaka amrita peya,” which contains Tulasi, Shunti, Nirgundi, Kiratatikta and Musta in the form of Kashaya (which was used by Gujarath state Ayurvedic department during the recent outbreak of Chikungunya) effectively. She presented and suggested the following compound formulations, which were distributed at Lakshadweep islands during the recent attack of Chikungunya as per the symptoms given below.

- 1). Jwara: Amritothara kwatha, Indukantha kwatha, Vettumaran gutika, Sudarshana gutika.
- 2). Sandhisula: Rasna Saptaka kwatha, Punarnavadi kwatha, Vettumaram gutika, Jatamayadi lepa.
- 3). Visarpa: Guduchyadi kwatha, Bilvadi gutika, Haridrakhanda, Avipattikara churna.
- 4). Kasa / Swasa : Indukantha kwatha, Vettumaran gutika, Haridrakhanda.
- 5). Sirasula : Indukantha kwatha, Amritothara kwatha, Sudarhana gutika.

Dr. Sudhikumar suggested treatments like Amapachana, Jwarahara, Vedanasthapana drugs for the epidemic control. According to his treatment experience, Shadanga thoya, Amritothara kashaya, Bilvadi gutika, etc. could be given in Jwara. Rasna Saptaka kwatha, Rasna panchaka kwatha, Lasuna eranda kwatha to cure joint pains and Jata mayadi lepa, Kottam chukadi tailam as external application for effective treatment.

Dr. Ravi Chandran, a Siddha expert has suggested Vishnuchakram mathirai, Nilavembu kudineer, Vathajwara kudineer as a complete remedy for Chikungunya.

Dr. Vinod Kumar recommended some single herbal drugs and few formulations such as Bhunimba, Guduchi, Katuki, Amrutarishta, Bilvadi gutika and to improve the immunity Indukantha kashaya & ghritha (in latter stage) for complete cure.

Dr. Thyagarajan had suggested that, the Siddha drugs like Brahmananda Bairavaras, Nilavembu kudineer could be prescribed as an Antiviral drugs and external application with Vatha Kesari tailam for better results.

Dr. Veluchamy, Moderator of the session emphasized on use of some Siddha remedies viz. Amukkara churna which act as an Anti inflammatory and Immunomodulatory agent in general and for fever Nilavembu kudineer, Vatajwar kudineer & Taleesadi churna through Siddha treatment in the management of Chikungunya.

DAY 2 (10/03/2007)

Technical session VI was mainly focussed on Interactions with participants and P. G. Scholers which was anchored cum moderated by **Dr. G. Srinivasa Acharya**, Prof. & Head, Dept. of Kayachikitsa, SDM College of Ayurveda, Udupi and assisted by **Dr. Anandan**, Research Officer (S), CRI (S), Chennai.

The following subject experts from Modern, Ayurveda and Siddha systems chaired the session.

1). **Dr. C. Nagaraj**, Reasearch officer, Dept. of Epidemiology, Ministry of H & F W, Government of India, Koramangala, Bangalore, 2). **Dr. B. G. Gopinath**, Principal, Sri Sri Ayurveda College, Bangalore 3). **Dr. Padmanabha Rao**, Ayurvedic Physician, Bangalore. 4). **Dr. K. S. Jayasree**, Prof. & Head, Government Ayurvedic Medical College, Bangalore. 5). **Dr. Srikanth Babu**, Reader, A. L. Government Ayurvedic College, Warangal, (A. P.) 6). **Dr. S. Rami Reddy**, C.G.H.S Dispensary, Hyderabad, 7). **Dr. P. K. Sudarshan Nair**, R O (Ay), CRI, Cheruthuruthy, Kerala and 8). **Dr. Palanichamy**, Siddha expert, Chennai.

In this session, one of the participants had asked about the swabhavoparama of Chikungunya and **Dr. B. G. Gopinath** replied that, it was a mrudu vyadi, the term swabhavo parama vyadi could be used for Chikungunya. Another P. G. Scholar from Hyderabad asked to **Dr.C. Nagaraja** that had he noted the vertical transmission of Chikungunya. Then **Dr. Nagaraja** explained that Transplacental transmission of this disease was not recorded and Breast milk transmission also not noted. However, there might be possibility of transmission of the disease. Children and mother together can equally suffer from Chikungunya due to mosquito bite. P. G. Scholar from Kerala questioned that “why Chikungunya affects joints only”? **Dr. Nagaraja** narrated that Chick virus enter the body and attributes the antibodies formation. These immune complexes are situated in cartilaginous part of joints. Hence it manifests mainly at joints. One Ayurvedic expert from the audience had asked that how can Chikungunya be classified as Janapadadvansa vyadi? Then, **Dr. S. Acharya** answered that Adharma is said to be the main reason. In epidemic of Chikungunya, the failure of beurocracy or city administration resulting in to lack of cleanliness, impaired sewage disposal, etc. would be nothing but Adharma only. Another P. G. scholar from Hyderabad raised a question if the pregnant women suffer from Chikungunya, what is the line of treatment and whether Rasaoushadis can be given in first trimester? **Dr. Jayashree** explained that Garbha pala rasa like metallic preparations are being used safely since decades in pregnancy. Hence, rasa preapartions can be definitely used for short period in first trimester of pregnancy. Combination of Aswagandha, Satavari and Shadanga paniya with jaggary are recommended especially in pregnant Chikungunya cases. An Ayurvedic

physician asked that why Chikungunya does not effect infants and children? **Dr. Nagaraja** answered that both are getting affected by Chikungunya. Other question raised by a P. G. scholar was about the role of Tikta rasa on virus? **Dr. Rami Reddy** answered that, definitely Tikta rasa has a vital role and it acts as antiviral agent. As evidenced from example of Nimba, Kiratatikta, Sudarshan churnam (Ref. Sannipata jware purvam kaphapaham).

Dr. Jayashree added that, these drugs has also got Immuno modulator actions. **Dr. S. Gopakumar** concluded that, Tikta rasa is pitta shamaka & Jwara hara because jwara is classified as pitta dosa pradhana vyadhi.

Technical session-VII

The core theme of this session was “Finalization of Research Strategies on Chikungunya”. **Dr. N. Srikanth**, Asstt. Director (Ay), **Dr. A. Narayana**, Deputy Director (Tech.), CCRAS were the moderators and the following resource persons from Ayurveda, Siddha and Modern medical fraternity chaired the session.

Dr. C. Nagaraj, Reasearch officer, Dept. of Epidemiology, Ministry of H & F W, Government of India, Koramangala, Bangalore,

Dr. B. G Gopinath, Principal, Sri Sri Ayurveda college, Kanakapura Road, Bangalore.

Dr. K. V. S. Prabhakaran, Additional Director, Dept. of AYUSH, Tilak Road, Abids, Hyderabad.

Dr. Philip Anand, Reader & HOD, Government Ayurveda College, Hyderabad

Dr. V. R. Sheshadri, Secretary & CEO, IMPCOPS, Thiruvamiyur, Adayar, Chennai,.

Dr. M. Parankusha Rao, S. V. Ayurveda College, SVIMS Campus, Tirupati (A.P).

Dr.G. Veluchamy, Director, CRI(S), Chennai.

Dr. Thyagarajan, Associate Professor, National Institute of Siddha, Chennai.

Dr. Nagaraj explained the role of Alphavirus in infection, host parasite interactions transient viremia and dissemination. The different serological tests particularly neutralization assay, was elaborated in detail. He also explained about host defenses, role of antibiotics, T-cell response, etc. The urban epidemics in particular with its epidemiology were narrated along with tips for diagnosis such as presence of IgM antibody or rise in IgG antibody etc. Different types of viruses their possible role and geographic distribution were explained through map and tabular representation. The speech was concluded with molecular aspects of viral genomic RNA.

Dr. B. G. Gopinath has emphasized on fundamental principles of methodology, mode of action and assessment of therapeutic effects of herbal formulation. A drug oriented approach by establishing hypothetical basis in Pharmacodynamic action of drugs by arriving logical conclusion was felt necessary. He also pointed out that to achieve safe and effective dosages, scientific validation of suggested drugs for their principle-based attribution is highly essential.

Dr. K. V. S. Prabhakaran has explained the systematic medical treatment associated with symptom-oriented approach in his speech. He gave the example of Jwarhara kashaya - the poly herbal formulation which is generally prepared by using Kiratatikta, Musta, Parpataka and Guduchi in equal quantity found effective in antiviral activity along with Mrityunjaya rasa and Kanchanara guggulu. He also reminded that the post sequel treatment for Chikungunya could be done by prescribing specially formulated “Chintamani” capsules.

Dr. Philip Anand explained the symptoms of Chikungunya in Ayurvedic parlance and their systematic & individually isolated treatments by following classical approach. He also emphasized for use of single herbal drugs which possess Antiviral, Antipyretic and Analgesic action such as Guduchi, Bhoonimba, Yashtimadhu, Bilva, Haridra etc. in the management of chikungunya.

Dr. V. R. Sheshadri insisted on determination of each patients constitution and prescription of internal medicines and simultaneous external application depending upon the symptoms and severity accordingly. He has suggested some formulations viz. Nimbadi kwatha, panchatikta kwatha, Ashwagandha churna etc. for internal administration and Pindataila, mixed with Karpoor tailam (in equal quantity) was found very effective local application in the management of Chikungunya

Dr. M. Parankusha Rao has explained the nidana, samprapti & lakshana of disease on concepts based on classical strategies such as janapadodhwansa - Ojakshaya & its causative factors. He also described the management of Ojakshaya through Rasayana drugs such as Yashtimadhu, Tulasi, Punarnava, Guduchi, Sunthi, Daruharidra, Amalaki & Haritaki .

Dr. G. Veluchamy has given a vivid picture about the classification of disease described in Siddha system of medicine along with drugs such as Thrithosa mathirai, Bramanatha bairavam and Vasanthkusumakaram mathirai, Vishnuchakara maharani, Vatha Rakshasam mathirai, Kutineer, Vathasura Kutineer which are to be used in the management of Chikungunya. However, he suggested the need of scientific evaluation of the said drugs with proper Standardization to incorporate the same in the National health Programs and to use them during and post epidemic diseased conditions safely and effectively.

Dr. Thyagarajan has prescribed some Siddha drugs like Brahmananda Bairavaras, Nilavembu kudineer as an Antiviral drug and external application with Vatha Kesari tailam for successful treatment.

Dr. N. Srikanth explained a comparative account of current status of management and need for further Research. He also pointed out that recently developed chemotherapeutic agents, which proved their effectiveness to certain extent, but no potent vaccine was available against this viral infection. Therefore, basic knowledge of Ayurveda & Siddha could be well utilized for proper treatment and accordingly Research strategies for needy patients can be further used and explored. He also depicted the modified research guidelines and methodologies for drug development in ASU / TSM /CAM. The evidence based clinical Research strategies like new drug development, screening with reference to Pharmacological actions, modification of drug & dosage, new indication or new drugs, reverse Pharmacology and unique screening methods, recognition of general immune

response & its reconstitution under prophylaxis which are inevitable in any drug research also discussed in his talk.

Two days National workshop on the management of Chikungunya through Ayurveda and Siddha ended with the entire participants' deep appreciation to the organizers and with the profound vote of thanks by the Organising Secretary followed by National Anthem.

CONCLUSION

Since the National workshop on the management of Chikungunya through Ayurveda and Siddha was confined only to the delegates hailing from southern parts of India like Andhra Pradesh, Karnataka, Kerala and Tamil Nadu; a core committee for development of research strategies was felt highly necessary. More over most of the delegates were claiming their own specific methods and medicines in the concluding session. Therefore no concrete solution could be reached for successful management of Chikungunya.

It was unanimously opined that a core committee consisting of necessary disciplines should be formulated and few more sittings/ discussions through consortium is felt highly necessary.

**NATIONAL SEMINAR ON MANAGEMENT OF CHIKUNGUNYA THROUGH
AYURVEDA AND SIDDHA
9, 10 March 2006, NIMHANS, Bangalore
PROGRAM SCHEDULE**

DAY-1 9 March 2007

Sessions	Time	Speaker
Technical session-I		
An insight on current trends in the diagnosis and management of Chikungunya	11.15 AM to 11.45 AM	Dr. Ravi , Prof. & HOD, Dept. of Neuro Virology, NIMHANS Bangalore
	11.45 AM to 12.15 AM	Dr. Sambhavamurthy , Ayurveda Academy, Bangalore
	12.15 PM to 12.45 PM	Dr. Veluchamy , Director, CRI (Siddha) Chennai, Tamil Nadu
Technical session-II	12.45 PM to 1.35 PM	
Clinical experiences on management of Chikungunya	Ayurveda (Each 10 minutes)	Dr. Prasanna Rao Principal, S D M College of Ayurveda, Hassan, Karnataka
		Dr. B. S. Sridhar , Sr. Lecturer, Government Ayurvedic Medical College, Bangalore, Karnataka
		Dr. A. S. Prasanth , Astt. Professor, Dept. of Kaya Chikitsa, Ayurvedic College, Hubli, Karnataka
		Dr. P. S. Chandran , Sr. Medical Officer, Government Ayurvedic Hospital, Cherthala, Alleppy, Kerala
		Dr. M. Sreenivasulu , Prof. Dept. of Basic principles, A.L. Government Ayurvedic College, Warangal, (A.P.)
Lunch	1.35 PM to 2.00 PM	

Technical session-III	2.00 PM o 2.30 PM	
Clinical experiences on management of Chikungunya	Siddha (Each 10 minutes)	Prof. P. Jayaprakash Narayan, Rtd. Vice Principal, Government Siddha College, Arumbakkam, Chennai, (T.N.)
		Prof. G. Ganapathi, No. 175/8, TNHB, Chennai Flat, Annanagar West, Chennai, (T.N.)
		Dr. J. R. Krishna Murthy, No.11 Perumal Street, Dharma Koil Street, Kunathur, Chennai, (T.N.)
Technical session-IV	2.30 PM to 3.45 PM	
Possible treatment approaches for control of epidemics with special focus on Chikungunya	Alloapathy	Dr. Mahabaleshwara Maiya, Rtd. Principal, Bangalore Medical College, Bangalore
		Dr. K. S. Jayashree, HOD, Dept. of Dravyaguna, Government Ayurveda Medical College, Bangalore
		Dr. M. L. Naidu, Reader, Dept. of Kayachikitsa, Dr. B.R.K.R. Government Ayurvedic College, Hyderabad (A.P.)
		Dr. Vinod Kumar, H O D (Panchakarma), Government Ayurveda College, Thiruvanthapuram, Kerala
		Dr. Ranganathan, District Siddha Medical Officer, Government Dist. Hqrs Hospital, Dharmapuri, Chennai, (T.N.)
		Dr. Siva Kumar, SKM Health & Mind Welfare Charity, Chennimalai Road, Erode, (T.N.).

Tea Break 3.45 PM to 5.30 PM		
Technical session-V	4.00 PM to 5.30 PM	
Expert group meet for finalization of selected Ayurveda/Siddha drugs for control/management of Chikungunya	Ayurveda	Dr. Nanjappa, Deputy Director (Ayurveda), Government Central Pharmacy, Jayanagar, Bangalore
		Dr. M. Parankusha Rao, S. V. Ayurvedic College, SVIMS Campus, Tirupathi, (A.P.)
		Dr. N. Jaya, Asst. Director In charge, C. R. I. (Ay), Cheruthuruthy, Kerala
	Siddha	Dr. Sudhi Kumar, Reader Government Ayurveda College, Thripunithura, Ernakulam, Kerala
		Dr. Jayaprakash Narayan, Retd. Vice Principal, Government Siddha College, Arumbakkam, Chennai, (T.N.)
		Dr. Thyagarajan, Associate Professor, National Institute of Siddha, Chennai (T.N.)
DAY-2 10th March 2007		
Technical session-VII	10.00 AM to 11.30 AM	
Interaction with participants and Post Graduate Research Scholars	Allopathy	Dr. C. Nagaraj, Research Officer, Dept. of Epidemiology, Ministry of H & F W, Government of India, Koramangala, Bangalore, Karnataka
		Dr. B. G. Gopinath, Principal, Sri Sri Ayurveda College, Kanakpura Road, Bangalore, Karnataka

	Ayurveda	Dr. Padmanabha Rao, Ayurvedic Physician, Bangalore, Karnataka
		Dr. Rangesh Paramesh, Ayurvedic Consultant, Himalaya Drug Company, Bangalore, Karnataka.
		Dr. S. Rami Reddy, C.G.H.S Dispensary, Humayun Nagar, Mehadi Patnam, Hyderabad, Andhra Pradesh
		Dr. P. K. Sudarshan Nair, RO (Ay.), CRI (Ay), Cheruthuruthy, Kerala
		Dr. Satya Prasad, Medical Officer, Government Ayurveda Hospital, Cherthala, Alleppy-Kerala
	Siddha	Principal, Government Siddha Medical College, Arumbakkam, Chennai, Tamil Nadu
		Dr. Palanichamy, No 250/2, HIG Flats, Pioneer Colony, Annanagar, Chennai, Tamil Nadu
Tea Break	11.30 AM to 11.45 PM	
Technical session-VIII	11.45 AM to 1.30 PM	
	Modern	Dr. C. Nagaraj, Research Officer, Dept. of Epidemiology, Min. of H & F W, Government of India, Koramangala, Bangalore, Karnataka

Finalization of Research strategies on Chikungunya	Ayurveda	Dr. B. G. Gopinath, Principal, Sri Sri Ayurveda College, Kanakapura Road, Bangalore, Karnataka
		Dr. K. V. S. Prabhakaran, Additional Director, Dept. of AYUSH, Tilak Road, Abids, Hyderabad, Andhra Pradesh
		Dr. Vinod Kumar, H O D (Panchakarma), Government Ayurveda College, MG Road, Trivendrum, Kerala
		Dr. V. R. Sheshadri, Secretary & CEO, IMPCOPS, Thiruvamiyur, Adayar, Chennai, Tamil Nadu
		Dr. M. Parankusha Rao, S. V. Ayurveda College, SVIMS Campus, Tirupati, Andhra Pradesh
		Dr. N. Srikanth, Asstt. Director (Ay.), CCRAS, New Delhi
		Dr. A. Narayana, Deputy Director (Tech), CCRAS, New Delhi
	Siddha	Dr.G.Veluchamy, Director, CRI(Siddha), Arignar Anna Hospital of Indian Medicine, Arumbakkam, Chennai, Tamil Nadu
		Dr. Thyagarajan, Associate Professor, National Institute of Siddha, Chennai, Tamil Nadu
		Dr. J R Krishna Murthy, No. 11 Dharma Koil Street, Kunathur, Chennai, Tamil Nadu
Lunch	1.30 PM to 2.00 PM	
Valedictory Session	2.00 PM to 2.30 PM	
NATIONAL ANTHEM		

Organizations working on Chikungunya

1. National Institute of Communicable disease (NICD),
New Delhi, India www.nicd.org
2. World Health Organization (WHO). www.who.int/csr
3. National institute of Virology, Pune, India. www.icmr.nic.in/niv.htm
4. European Centre for Disease Prevention and Control,
Stockholm, Sweden. www.ecdc.eu.int
5. Health Protection Agency, London. www.hpa.org.uk
6. National Institute of Virology, South Africa. www.niv.ac.za
7. U.S. Army Medical Research Institute of
Infectious Diseases, Fort Detrick, Maryland. www.usamriid.army.mil
8. International Federation of Red Cross and
Red Crescent Societies www.ifrc.org
9. Centre for disease control and
prevention (CDC), Atlanta. www.cdc.gov
10. Institut de Vielle Sanitaire, France. www.invs.sante.fr

REFERENCES

REFERENCES

1. <http://en.wikipedia.org/wiki/Chikungunya/>
2. http://www.nvbdc.gov.in/Chikungunya_status.html
3. <http://envis.nic.in> - A special Issue on Chikungunya, *Envis News letter*, Volume.2, Issue 2, September 2006.
4. www.who.int/csr
5. www.ecdc.eu.int- A mission Report Chikungunya in Italy, Joint ECCD/WHO visit for a European risk assesement, 17-21 September 2007.
6. Sandhya Kamat, A.K.Das, Falguni S Parikh, Chikungunya, *Journal of Physicians of India*, Vol.54, 725-726, September 2006.
7. Ghosh *et.al* (1981), JRAS Vol. II. 3. Published by CCRAS, New Delhi, Pharmacological investigation on Linga chenduram- A Siddha Drug – Part – I.
8. N.R. Pillai *et.al* (1977), Journal of Research in Indian Medicine. (Yoga and Homoeo) Pharmacological investigation on Linga chenduram- A Siddha Drug – Part – II.
9. Ghosh *et.al* (1981), Bulletin of medico-ethno-botanical research. Published by CCRAS, New Delhi, and Pharmacological evaluation of Nilavembu kudineer for antipyretic, analgesic and anti inflammatory activities.
10. Caraka samhita with Ayurveda deepika commentary of Chakrapanidatta, Vidyodini hindi commentary by Pt. Kashinatha Sastri, edited by Ganga Sahay Pandey, Part II, First edition (1970), published by The Chaukhamba Sanskrit Series Office, Varanasi -1.
11. Susruta samhita, translated by Atrideva, 3rd Edition (1960), published by Motilal Banarasi Das, Varanasi.
12. Astanga Sangraha of Vagbhata, Vol. II, Translated by Prof. K. R. Srikantha Murthy, Jaikrishnadas Ayurveda Series, First edition (1996), published by Chaukhamba Orientalia, Varanasi.
13. Astanga hridaya with Sarvanga sundara Vyakhya, collated by Dr. Annamoreswara Kunte & Krishna Ramachandra Shastry Navre, edited by Harishastry Padarkar Vaidya (1982), published by Krishnadas academy, Varanasi.
14. Madava nidana with Madhukosha Vyakhya, Vidyodini Hindi Commentary, edited by Shree Yadunandanopadhaya, Part II, published by The Chaukhamba Sanskrit Sansthan, Varanasi.

15. Bhavaprakasha of Bhavamisra, Part II, Commentary by Bishagratna Brahma Shankara Misra, 3rd Edition (1961), published by The Chaukhamba Sanskrit Series Office, Varanasi.
16. Bhela Samhita, Edited by V.S.Venkatasubramania Sastri, C. Raja Rajeshwara Sarma, Central Council for Research in Indian Medicine and Homoeopathy, 1977.
17. Ayurvedic Formulary of India, Part-I, 2nd Edition, published by Department of AYUSH, Ministry of Health and Family Welfare, Government of India
18. Siddha Pharmacopoeia of India, published by Department of AYUSH, Ministry of Health and Family Welfare, Government of India
19. Kuppusamudaliar K.N. (1954), Siddha Maruthuvam - Government of Tamilnadu Publications.