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Case Study

AYURVEDA MANAGEMENT OF POST CHIKUNGUNIA ARTHRALGIA- A CASE STUDY

Rahulkumar V. Naika¹, Alankruta R. Dave², Manoj Upadhyay³

1. PhD. Scholar Kayachikitsa Department, ITRA, Jamnagar, Gujarat, India-361008
2. Associate Professor Kayachikitsa Department, ITRA, Jamnagar, Gujarat, India-361008
3. Professor & HOD, Samhita & Siddhant Department, O.H. Nazar Ayurved College, Surat

Address for correspondence:

Rahulkumar V. Naika, PhD. Scholar Kayachikitsa Department, ITRA, Jamnagar, Gujarat, India-361008
E-mail- rahulnaika@gmail.com

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ABSTRACT

Background: Chikungunya is a viral disease transmitted to humans by the bite of *Aedes aegypti* mosquito. When musculoskeletal symptoms persist for more than 12 weeks, it is referred as chronic chikungunya arthritis/ arthralgia (CCA). Arthritic manifestations can last for weeks, months, or even years. Several indigenous drugs have been described in Ayurveda for the management of inflammation, fever and other diseases. **Case study:** A 37 years old female patient with complaints of Multiple joints pain with stiffness since 1 ½ years. The mainly affected joints were Bilateral shoulder joint pain, knee joint pain, ankle joint pain, wrist and interphalangeal joint pain. Mild swelling was experienced on wrist, phalanges, and ankle joint. Morning stiffness lasts for 2 to 3 hours on affected joints, Myalgia, and Feverish feel occasionally. Her investigation showed increases CRP and ESR values. Treatment administered was Tab. *Laxminarayan Rasa Vati* 250 mg thrice a day with *Anupana* of *Ardaraka Swaras* for duration of 2 months. Result: Significant result was observed in symptomatic relief as well as in raised CRP and ESR Values. **Conclusion:** Ayurvedic perspective of this disease resembles with *Sandhig Jwara*, *Aamvaat*, *Dhatugat Jwara*, *Saam Jwara* & *Upastambhit Vatvyadhi*. *Laxminarayan Rasa Vati* is effective in PCA due to its anti-inflammatory, anti-viral, antipyretic, anti-arthritic, rejuvenating, anti-rheumatic effects.

Keywords: Post chikunguniya Arthralgia, *Laxminarayan Rasa*, *Dhatugat Jwara*, Chikunguniya.

INTRODUCTION:

Chikungunya is a viral disease transmitted to humans by the bite of *Aedes aegypti* mosquito. 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 “*Kungunya*” 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.

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 ($>40^{\circ}$ 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 complaint prolonged fatigue which lasts for several weeks. 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. When musculoskeletal symptoms persist for more than 12 weeks, it is referred as chronic chikungunya arthritis/ arthralgia (CCA). Arthritic manifestations can last for weeks, months, or even years. Several indigenous drugs have been described in Ayurveda for the management of inflammation, fever and other diseases. In the long term treatment of chronic disorders, like rheumatic diseases, combinations of different plants families and species active principles often exhibit remarkable potency and tolerance.ⁱ

Ayurvedic view:

Though there is no precise term for this condition in Ayurveda, yet many Scholars tried to distinct nomenclature for this like *Upastambhita Sandhigatvaat*, *Saam Jwara*, *Dhatugata Jwara*, *Amvaat or Sandhig Jwara*. As described in Ayurveda; sign and symptoms of *Sandhig Jwara* strikingly resembles Post Chickungunya Arthralgia.ⁱⁱ

CASE STUDY:

A 37 years old female patient local resident of Jamnagar city came to *Kayachikitsa* OPD of ITRA Hospital with complaints of Multiple joints pain with stiffness since 1 ½ years. The mainly affected joints were Bilateral shoulder joint pain, knee joint pain, ankle joint pain, wrist and interphalangeal joint pain. Mild swelling was experienced on wrist, phalanges, and ankle joint. Morning stiffness lasts for 2 to 3 hours on affected joints, Myalgia, and Feverish feel occasionally.

History of present illness revealed that patient had taken treatment of chikungunya fever for a week or two, she got relieved from fever but multiple joints pain and morning stiffness etc symptoms persists. Gradually myalgia increased with involvement of multiple joints pain and stiffness. Pain and stiffness was so severe that she had restricted movement of joints due to which her routine activities got hampered.

Patients past history revealed that the patient was infected with Chikungunya fever one and half year ago with chief complaints of fever, fatigue, weakness, multiple joint pain, stiffness, and headache for which she consulted a physician and took the allopathic treatment at home for 10 days. Her vitals were stable hence no hospitalizations required at that time. No detail information of medication was provided by patient. As per the patient, she took only oral medications for 10 days during acute infection phase. Oral medications include NSAIDS. After that during post infection phase, she consulted local physician but she got moderate or mild relief in symptoms of post chikungunya arthralgia.

Examination of patient

On general examination of patient, her pulse was 82beats/min, blood pressure was 110/70 mm hg, weight was 54 kg, height 160 cm, BMI- 21.2, clubbing was absent, pallor was mild, cyanosis was absent, lymphadenopathy was not present, tongue was clear and temperature was afebrile.

Patients personal history revealed that she was vegetarian with poor appetite meals twice a day, the status of *Agni* was *Mandya*, *Koshtha* was *Madhyam*, *Mala* was *Samyak* and *Nirama*, *Mutra Pravruiti* and *Nidra* was *Samyaka*, *Jivha* was *Alpa Saam*.

Dashavidha pariksha of the patient showed that her *Prakriti* of patient is *Vaat Kapha*, *Sarata* is *Madhyama*, *Samhanana* is *Madhyam*, *Pramana* is *Maadhyam*, *Satva* is *Avara*, *Satmya* is *Madhyama*, *Aharshakti* is *Madhyam*, *Vyayamshakti* is *Avara*, *Koshtha* and *Vaya* is *Madhyam*.

Hetus present in the patient were *Vatakapha Kara* specially *Amla* and *Katurasa Pradhana*, *Ruksha Aharam*, *Vihara* included *Avyayam* and *Diwaswapna*, *Manasika Hetu* included *Atichinta*.

Systemic examination included Musculoskeletal examination. On inspection Swelling in ankle, wrist and interphalangeal joints was observed with VAS score 06. On palpation- tenderness was observed in affected joints with normal temperature, On examination difficulty in routine movements of finger and wrist joints was observed. Range of motion decreased in multiple joints. (more in shoulder joint & interphalangeal joints), swelling at wrist, interphalangeal joints.

Investigation: Hb% of patient was 12.2gm%, Total RBC was 4.07mil/cmm, TLC was 9030/Cu.mm, ESR was 80 mm hg, CRp was 21 mg/dl RA quantitative was 7.5 IU/ml, LFT and KFT value were within normal limits.

Differential Diagnosis: In the present case study, the Chief complaints were Polyarthralgia, Morning stiffness, Feverish feel. The Differential diagnosis with these complaints were Rheumatic arthritis, Arthritis, Gout and PCA. Based on investigations, complains and history of the patients the final diagnosis was Post chikungunya arthralgia.

In this case, *Dosha* involved are *Vata* and *Kapha*, *Dushya* involved are *Rasa*, *Mansa*, *Asthi* and *Snayu*, *Desha* was *Sadharana* and *Bala* was *Madhyam*. Treatment given was Tab *Laxminarayan Rasa Vati* 250 mg thrice a day with *Anupana* of *Ardaraka Swaras* for duration of 2 months. ⁱⁱⁱ

Follow-up and Assessment

Day	Complaints
0 day	<ul style="list-style-type: none"> • Pain & stiffness in bilateral knee, ankle, wrist, shoulder, interphalangeal joints. • Morning stiffness , myalgia • Swelling at interphalangeal, ankle joint
15 th day	<ul style="list-style-type: none"> • Pain persists in joints but stiffness reduces. • Morning stiffness- reduced • Swelling at interphalangeal, ankle joint- reduced • Myalgia
30 th day	<ul style="list-style-type: none"> • Pain & stiffness at joints- reduced • Morning stiffness- reduced • Swelling at interphalangeal, ankle joint- reduced • Myalgia occasionally present
45 th day	<ul style="list-style-type: none"> • Pain & stiffness at joints- significantly reduced • Morning stiffness- absent • Swelling at interphalangeal, ankle joint- absent • Myalgia occasionally present
60 th day	<ul style="list-style-type: none"> • Pain & stiffness at joints on & off but significantly reduced than before. • Myalgia occasionally present
90 th day(follow up)	<ul style="list-style-type: none"> • Pain & stiffness at joints on & off but significantly reduced than before. • Myalgia occasionally present with VAS score 0-2

Result and Discussion

Reports after 2 months of treatment showed that the CRP Quantitative value significantly reduced from 21 mg/l to 2.8mg/l, ESR count which was raised to 80 mm/hr before treatment was reduced to 30 mm/hr after treatment. Before treatment and after treatment reports are attached herewith.

In Post chikungunya arthralgia there is *Dushti* of *Rasavaha*, *Raktavaha* & *Mansavaha Srotas*. Also due to *Vyadhi Chirakalitva*, *Dhatugat Vyadhi Avastha*, *Dhatu Durbalata* is also present. Combined effects of drug like *Dhatvagni Dipan Pachan*, *Rasayan*, *Balya*, *Shoolahara* and *Tridhoshagna Karma* breaks *Samprapti* of *Vyadhi*.^{iv}

Probable mode of action of drugs

Laxminarayan Rasa Vati includes drugs like *Hingula*, *Abhraka Bhasma*, *Shudha Gandhaka*, *Tankana*, *Vatsanabha*, *Nirgundi Beeja Ativisha*, *Pippali*, *Kutki*, *Saindhava*, and *Ardraka*.

Hingula has *Kaphaghna* action with other karmas like *Dipana*, *Rasayana* and *Balya*. It has anti rheumatic and anti pyretic pharmacological activities. *Abhrak Bhasma* has *Kaphaghna* action with other karmas like *Rasayana* and *Dhatuvrudhikara*. It has rejuvenative and hepatoprotective action on the body. *Shudha Gandhaka* has *Vata Kaphaghna* action on Doshas, with Karmas of *Dipana*, *Pachana*, *Rasayana*. It has anti viral and anti bacterial pharmacological activities. *Tankana* has *Vata Kaphaghna* action, with Karmas of *Hrudya* and *Balya*. It has preventive action against arthritis. *Vatsanabha* has *Kaphapittaghna* action with karmas like *Dipana*, *Pachana*, and *Shoolaghna*. It has Analgesic and Anti-rheumatic properties. *Nirgundi Beeja* has *Vata Kaphaghna* action with *Dipana*, *Pachana* and *Vishaghna Karmas*. It has Anti-inflammatory, Anti-rheumatic pharmacological activities. *Ativisha* has *Kaphapittaghna* action with *Dipana* and *Pachana* karmas. It has Analgesic and Anti-rheumatic properties. *Pippali* is *Tridoshghna* in action with *Dipana*, *Hridya* and *Rasayana Karmas*. It is anti-inflammatory and immunomodulatory in properties. *Kutki* has *Pitta Kaphaghna* action with karmas of *Amapachana*, *Shoolhara*, *Jwarghna* and *Vishaghna*. It has Antipyretic and Hepatoprotective pharmacological actions. *Saindhava* is *Vataghna* with karmas of *Dipana* and *Anulomana*. It helps in relieving rheumatic pain and muscle stiffness. *Ardraka* is having *Vatakaphghna* properties, with *Amapachana*, *Vrushya* and *Hrudya Karmas*. It has Anti-inflammatory and anti oxidant action.

Laxminarayan Rasa Vati has a combined effect of anti-inflammatory, anti-viral, antipyretic, anti-rheumatic effects which Reverses post-viral autoimmune effects of the diseases following viral clearance. It decreases inflammation from synovial tissue and prevents bone erosion. Thus, stops further pathogenesis of diseases and proven effective in post chikungunya arthralgia.^v

CONCLUSION:

Post chikungunya arthralgia is the disease having *Vata* and *Kapha* predominance. It can be concluded from the following case that the PCA is a chronic disease followed by chikungunya fever in which there is polyarthralgia is chief complaints. In Ayurvedic perspective this disease resembles with *Sandhig Jwara*, *Amvaat*, *Dhatugat Jwara*, *Saam Jwara* & *Upastambhit Vatvyadhi*. *Laxminarayan Rasa Vati* is effective in PCA due to its anti-inflammatory, anti-viral, antipyretic, anti-arthritic, rejuvenating, anti-rheumatic effects.

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- ⁱⁱ Shri. harihar prasad pandey, bhavaprakasha samhita madhyam khanda, jwaradhikar, Chaukhamba Sanskrit, Varanasi reprint 1998
- ⁱⁱⁱ Shri Nathusini verma, Rasatantrasaar siddhaprayog sangraha, Krushna gopal granthamala, part 1 kharaliya rasayan, 5th edition 1949
- ^{iv} Management of Chikungunya through Ayurveda and Siddha, technical report published by CCRAS 2009, Dept. of AYUSH, on behalf of Govt. of India.
- ^v Clinical guidelines on management of Chikungunya fever, research paper of WHO, WHO press, Geneva, October 2008

Annexures

Before treatment

Institute of Teaching and Research in Ayurveda Clinical Laboratory (Institute of National Importance) Ministry of AYUSH, Government of India Opp. B - Division Police Station, Gurudwara Road, Jamnagar - 361 008				
Patient's Name Physician Dep Name/Bed No Specimen Rec. Time Student/Other		DR. A. R. DAVE KAYACHHOTSA 27/08/2021 10:09 26/08/2021 09:34 Dr. RAHUL KUMAR V. NAIKA		Age/Sex IPDC/CPD No Date of Collection Result Release Time Reg. ID
37 Years/Female 21581 27/08/2021 26/08/2021 12:04 ITRAC-4766-21				
BIO-CHEMISTRY				
Sample Type: Serum				
Test Name	Result	Units	Reference Range	Method
Diabetic profile				
Fasting Blood Glucose	89	mg/dL	70 - 110	Hexokinase
Lipid Profile				
S. Cholesterol	206	mg/dL	140 - 250	CHOD-POD
S. Triglyceride	118	mg/dL	25 - 160	TGO-POD
S. HDL - Cholesterol	61.8	mg/dL	35 - 65	Direct
S. LDL - Cholesterol	108.8	mg/dL	0 - 160	Calculated
S. VLDL - Cholesterol	23.6	mg/dL	0 - 30	Calculated
Renal Profile				
Urea	17	mg/dL	17 - 43	Urease
Uric acid	3.70	mg/dL	2.6 - 6.0	Uricase
Creatinine	0.95	mg/dL	0.70 - 1.40	Jaffe's
Hepatic profile				
Total Bilirubin	0.18	mg/dL	0.2 - 1.0	DCA
Direct Bilirubin	0.12	mg/dL	0 - 0.6	DCA
Indirect Bilirubin	0.06	mg/dL	0 - 0.5	Calculated
S.G.P.T (ALT)	89	U/L	0 - 40	IFCC
S.G.O.T (AST)	66	U/L	0 - 37	IFCC
A.L.P. Phosphatase	73	U/L	28 - 150	PNP
Total Protein	8.09	gms/dL	6.4 - 8.3	BURET
Albumin	4.49	gms/dL	3.8 - 4.4	BCG
Globulin	3.6	gms/dL	2.3 - 3.5	Calculated
A/G Ratio	1.23		0.9 - 2.9	Calculated
BIO-CHEMISTRY				
Sample Type: Serum				
Test Name	Result	Units	Reference Range	Method
C.R.P QUANTITATIVE	21.0	mg/L	0.0 - 5.0	Immunometri
Note - Assays performed on " Nyco card reader ", Axis Shield, Norway				
BIO-CHEMISTRY				
Sample Type: Serum				
Test Name	Result	Units	Reference Range	Method
R.A. QUANTITATIVE	7.5	IU/mL	< 15	FIA
Note - Assays performed on " i Chroma - II ", BodiTech Inc., South Korea				

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37 Years/Female 21581 27/08/2021 26/08/2021 11:24 ITRAC-4766-21				
COMPLETE BLOOD COUNT				
Sample Type: EDTA				
Test Name	Result	Units	Biological Reference Interval	
Blood Counts				
Hemoglobin	12.2	Gms%	12.5 - 16.0	
Total R. B.C. :	4.07	mill/cu.mm	4.2 - 5.4	
Hematocrit :	40.30	%	40.00 - 47.00	
Platelet Count :	251000	/cu.mm	1,50,000 - 3,50,000	
Differential Count				
Neutrophils :	63.3	%	40 - 70	
Lymphocytes :	25.4	%	20 - 40	
Eosinophils :	8.2	%	1 - 4	
Monocytes :	5.6	%	2 - 6	
Basophils :	0.4	%	0 - 0.1	
Absolute Eosinophil Count :	478.99	/uL	0.0-450	
Blood Indices				
P. C. V. :	36.8	%	37 - 47	
M. C. V. :	89.7	fL	78 - 100	
M. C. H. :	30.0	g%	27 - 31	
M. C. H. C. :	33.4	%	32 - 36	
R.D.W. :	14.0	%	11.5 - 14.0	
E. S. R. (Westergren Method) :	80	mm	3 - 12	
After one hour :				
Date of Reporting : 28/08/2021				
Pathologist				

After treatment

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Sample Type: Serum				
Test Name	Result	Units	Reference Range	Method
Random Blood Glucose				
Random Blood Glucose	80	mg/dL	70 to 140	Hexokinase
Lipid Profile				
S. Cholesterol	219	mg/dL	140 - 250	CHOD-POD
S. Triglyceride	101	mg/dL	25 - 160	TGO-POD
S. HDL - Cholesterol	47.9	mg/dL	35 - 65	Direct
S. LDL - Cholesterol	150.9	mg/dL	0 - 100	Calculated
S. VLDL - Cholesterol	20.2	mg/dL	0 - 30	Calculated
Renal Profile				
Urea	23	mg/dL	17 - 43	Urease
Uric acid	3.75	mg/dL	2.6 - 6.0	Uricase
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Total Protein	8.28	gms/dL	6.4 - 8.3	BURET
Albumin	4.48	gms/dL	3.8 - 4.4	BCG
Globulin	4.27	gms/dL	2.3 - 3.5	Calculated
A/G Ratio	1.05		0.9 - 2.9	Calculated
BIO-CHEMISTRY				
Sample Type: Serum				
Test Name	Result	Units	Reference Range	Method
C.R.P QUANTITATIVE	2.8	mg/L	0.0 - 5.0	Immunometri
Note - Assays performed on " Nyco card reader ", Axis Shield, Norway				
Biochemist				

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Total Protein	8.28	gms/dL	6.4 - 8.3	BURET
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Test Name	Result	Units	Reference Range	Method
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Note - Assays performed on " Nyco card reader ", Axis Shield, Norway				
Biochemist				