सत्यमेव जयते

Ministry of Ayush
Government of India

STANDARD TREATMENT GUIDELINES
ON

MANAGEMENT OF COMMON MUSCULOSKELETAL DISORDERS

IN
SIDDHA SYSTEM OF MEDICINE

AYUSH VERTICAL
DIRECTORATE GENERAL OF HEALTH SERVICES
Government of India

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Secretary

सत्यमेव जयते

आज़ादी का अमृत महोत्सव

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FOREWORD

The Ministry of Ayush remains steadfast in its commitment to the promotion and propagation of the Ayush system of medicine. Over the past two decades, significant strides have been made in providing public health services through our extensive network, comprising approximately 3844 Ayush hospitals, 36848 Ayush dispensaries, and over 7.56 lakh registered practitioners nationwide. The increasing acceptance of the Ayush system among the populace underscores the necessity for mainstreaming and standardizing these traditional practices to ensure standardized and evidence-based care throughout India.

In pursuit of this goal, the Ministry of Ayush recently unveiled the Indian Public Health Standards for Ayush healthcare facilities, a crucial step towards ensuring the delivery of high-quality public healthcare services. Furthermore, the initiative undertaken by the Ayush vertical under the Directorate General of Health Services to publish a series of Standard Treatment Guidelines (STGs) for various disease conditions within the Ayush system represents a significant stride in our commitment to providing quality and standardized healthcare services.

I extend my sincere gratitude to Dr. Atul Goel, DG, Directorate General of Health Services, for spearheading this endeavor under his guidance. I also commend the dedicated efforts of the Ayush vertical under DGHS, as well as the contributions of various experts from National Institutes, Research Councils under this Ministry, and experts from the Orthopedics Department of RML Hospital and Lady Hardinge Medical College. Their invaluable support has been instrumental in incorporating modern perspectives on musculoskeletal disease conditions into the STGs, thus bringing forth this initiative.

I am hopeful that this series of Standard Treatment Guidelines, starting with the guidelines on Musculoskeletal Disorders, will serve as a valuable resource for Ayush healthcare providers. It will empower them to deliver optimal care to individuals suffering from musculoskeletal disorders and complement the Indian Public Health Standards for Ayush healthcare services.

(Rajesh Kotecha)

01st April, 2024.
New Delhi

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Ministry of Health & Family Welfare
Directorate General of Health Services

Foreword

In the past two decades, there has been a resurgence of traditional medicine globally, including the Ayush system in India. Advocates of the Ayush system of medicine, including practitioners and scientists, have consistently highlighted its personalized predictive approach and diversity of Ayush formulations and therapies. As we traverse the terrain of healthcare, necessity of a holistic treatment approach becomes increasingly important. Ayush system of medicine, with its centuries-old wisdom and emphasis on natural healing modalities, offers a distinct perspective on managing musculo-skeletal disorders. Its approach, centered on restoring an equilibrium of mind, body, and spirit, complements modern medicine, thereby widening the care available to patients.

Publication of Standard Treatment Guidelines (STGs) on Management of Musculo-skeletal Disorders by Ayush system of medicine represents a significant footstep towards our commitment to comprehensive healthcare for our citizens. These guidelines, curated by experts in the field, are a testament to efficacy and relevance of Ayush in addressing public health. In order to ensure clarity and accessibility for all stakeholders, conventional terminology has been seamlessly integrated throughout the document. Each disease condition is introduced alongside its corresponding ICD classification, providing a clear clinical narrative that enhances understanding for all stakeholders.

I appreciate the Ayush vertical of this directorate, as well as contributions of various experts from National Institutes and Research Councils under the Ministry of Ayush, in bringing forth this initiative. Additionally, my gratitude to experts from orthopedics department of ABVIMS and LHMC for their invaluable support in incorporating modern perspective on musculo-skeletal disease conditions into the STGs. By bridging gaps between traditional and modern medicine, we attempt to foster inclusivity and collaboration between various systems of medicine for benefitting patients.

I sincerely hope that these guidelines will serve as a valuable resource for Ayush healthcare practitioners, empowering them to deliver optimal care to individuals afflicted with musculo-skeletal disorders.

03 April 2024

(Atul Goel)

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ABBREVIATIONS

ACPA	Anti-Citrullinated Peptide Antibody
ACR	American College of Rheumatology
ACS	Adhesive Capsulitis of Shoulder
AIDS	Acquired Immune Deficiency Syndrome
ANA	Anti-nuclear Antibody
Anti-CCP	Anti-cyclic Citrullinated Peptide
AP	Anterio-Posterior
ASES	American Shoulder and Elbow Society
BMI	Body Mass Index
BID	Twice a day
CBT	Cognitive-Behavioral Therapy
CCR6	Chemokine Receptor 6
CHC	Community Health Center
CPPD	Calcium Pyrophosphate Dihydrate disease
CRP	C- Reactive Protein
CS	Cervical Spondylosis
CT	Computed Tomography
CTLA4	Cytotoxic T-lymphocyte associated Protein 4
CWP	Chronic Widespread Pain
DAS28	Disease Activity Score 28
DIP	Distal Interphalangeal Joints
DMARDs	Disease-modifying Antirheumatic Drugs
EMG	Electromyography
ESR	Erythrocyte Sedimentation Rate
Ext,	External
ESWT	Extracorporeal Shock Wave Therapy
FBC	Full Blood Count
FM	Fibromyalgia
GI	Gastrointestinal
HLA	Human Leukocyte Antigen
HLA-B27	Human Leukocyte Antigen B27
HLA-DRB1	Human Leukocyte Antigen Class II Histocompatibility, D Related Beta Chain
HTLV-1	Human T-Lymphotropic Virus Type 1
IFT	Interferential Therapy
IL2RA	Interleukin-2 Receptor a
IRF5	Interferon Regulatory Factor 5

JSN	Joint Space Narrowing
LBP	Low Back Pain
LS	Lumbar Spondylosis
MCP	Metacarpophalangeal Joints
MMTP	Multidisciplinary Modal Treatment Plan
MSUM	Monosodium Urate Monohydrate
MRI	Magnetic Resonance Imaging
MSG	Monosodium Glutamate
NCV	Nerve Conduction Velocity
OA	Osteoarthritis
OD	Once daily
PADI4	Protein-arginine Deiminase Type-4
PHC	Primary Health Center
PIP	Proximal Interphalangeal joints
PTPN22	Protein Tyrosine Phosphatase Non-Receptor Type 22
RA	Rheumatoid Arthritis
RF	Rheumatoid Factor
ROM	Range of Motion
SLR	Straight Leg Raise
SS	Symptom Severity
STAT4	Signal Transducer and Activator of Transcription 4
TENS	Transcutaneous Electrical Nerve Stimulation
TFT	Thyroid Function Test
TRAF1	TNF receptor-associated Factor 1
USG	Ultrasound
WPI	Widespread Pain Index

GLOSSARY

1. Vatham (bio-energy movement):

One of the three humours/ principles of functional constitution of the body represent the elements (Panchabootham) air and space. Vatham is the principle kinetic energy in the body and it is responsible for motor and sensory activities. Vatham predominates in the region below umbilicus and based on its function it is classified into ten types. They are Pranan, Abanan, Viyanan, Samanan, Udhanan, Naagan, Koorman, Kirugaran, Devathathan and Thananjeyan. Roughness, dryness, lightness and mobility are certain attributes of Vatham. It also strengthens the five sensory organs, regulates respiration, maintain the functions of Udal thathukkal (physical constituents) and 14 Vegangal (physiological reflexes)

2. Pitham (bio-energy fire):

One of the three humours/ principles of functional constitution of the body represent the element fire. Pitham is the principle of transformation energy and governs heat and metabolism in the body, and is concerned with the digestive, enzymatic and endocrine systems. It dominates the chest and abdominal area and exhibits itself in five forms. They are Anarpitham, Ranjaga pitham, Saathaga pitham, Aalosaga pitham and Prasaga pitham. It is eliminated from the body through sweat

3. Kabam (bio-energy water):

One of the three humours/ principles of functional constitution of the body represent the elements water and earth. Kabam is the principle of stabilizing energy and governs growth in the body and mind and is concerned with structure, stability, lubrication and fluid balance. It dominates the head and neck region and exhibits itself into five forms. They are Avalambagam, Kilaetham, Pothagam, Tharpagam and Santhigam. It is eliminated from the body through the urine.

4. Seven udal thathukal (physical constituents):

The human body is made of seven basic physical constituents. These constituents should be in harmony and normality. Any variation in them will lead to their functional deviations.The natural characters of the seven physical constituents are; Saaram (Chyle) - This gives mental and physical perseverance Senneer (Blood) - Imparts colour to the body, nourishes the body and is responsible for the ability and intellect of an individual. Oon (Muscle) - It gives shape to the body according to the physical activity and covers the bones. Kozhuppu (Adipose tissue) - It lubricates the joints and other parts of the body to function smoothly. Enbu (Bone) - Supports the frame and responsible for the posture and movements of the body. Moolai (Bone marrow) - It occupies the medulla of the bones and

gives strength and softness to them. Sukkilam / Suronitham - It is responsible for reproduction.

5. Envagai thervu (eight fold system of clinical assessment):

- Naadi (Unique Siddha pulse reading method)
- Sparisam (Examination of Touch / palpation)
- Naa (Examination of Tongue)
- Niram (Examination of Colour/ Complexion)
- Mozhi (Examination of Speech)
- Vizhi (Examination of Eye)
- Malam (Examination of Stool)

Neer

- Neerkuri (Urine examination)
- Neikuri (Urine Sign – Oil Drop Test)

6. Naadi (Unique Siddha pulse reading method) :

Naadi" means "seeking", "blood vessel", "nerve" etc. in Tamil language. In this context it means about the seeking to arrive at the diagnosis of the body condition with the feeling of hemodynamics in a blood vessel especially over the radial bone. The pulse Diagnosis is a unique method in Siddha Medicine. The pulse should be checked in the right brachium for males and the left brachium in females. The fingers of the examiner feel for the differential pulsations with three fingers simultaneously over the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly.

7. Sparisam (Examination by Touch/ Palpation):

Examining the patients by touch, in which warmth, chillness, perspiration, tenderness, swelling, numbness, sticky or clammy skin, skin fissure, thickening of hair, hair loss, goose flesh, boils, patches, ulcers, wasting or bulkiness of the muscles, any deformity in the body are assessed.

8. Naa (Examination of Tongue):

The examination of oral cavity particularly tongue, in which secretion of saliva, colour, mucous discharge, its specific gravity, nature of speech etc., are examined. This include thick coated, denuded, drenched, dehydrated, glossy, smooth, rough, ulcerated, varied in colour (black, brown, red, pink, pale/whitish, yellow blood stained and blue), irregular edge, extra growth, changes in taste, tastelessness, altered sensation, loss of sensation, deviation in tongue, changes in teeth and gum, deviation of mouth, small or big in size, taste buds etc.,

9. Niram (Examination of Colour/ Complexion):

Examination of the colour/ complexion of the skin and mucous membrane with reference to three humours.

10. Mozhi (Examination of Speech):

Examination of voice to rule out any abnormalities i.e. changes in tone and different components of speech, such as respiratory sounds. This comprise of loud voice, hoarseness, low/soft, slurred speech, irrelevant speech, musical voice, absence of speech etc.,

11. Vizhi (Examination of Eye):

Examination of the colour, vision and discharge of the eyes with reference to three humours. Changes of the eye are listed i.e., colour, ulceration, swelling, puffiness in eyelid, watering, visual changes, dryness, foreign bodies and pupillary changes.

12. Malam (Examination of the Stool):

Examining the stool by analyzing its colour, smell, consistency and froth. Also diarrhoea, constipation, with mucus, blood, worms and undigested material and occult blood are noted.

13. Churanam (Medicated Powder):

The dried raw drugs are purified separately, fried and made into fine powder. It is separately sieved in a fine cotton cloth and mixed according to the prescribed ratio, with or without adding jaggery or sugar.

14. Nei (Medicated Ghee)

Some juices/ paste/ decoction of herbs/ powdered tubers are added to cow"s ghee and boiled till the drugs completely mix with the ghee.

15. Ilagam (Electuary) :

A medicine that are prepared by heating certain decoctions, juices and milk with the addition of sugar till a thick syrup consistency is reached, at that stage the specific drug powders and ghee is added, mixed uniformly. It is followed by adding honey when the mixture is cooled.

16. Ennai/ Nei/ Thylam (Medicated Oil) :

The oils extracted from the seeds/ creepers/ barks and herbs are termed as Nei (Oil).

17. Mathirai (Pills):

The raw drugs are triturated with the juice of leaves or kudineer. They are rolled into different prescribed doses, dried and stored.

18. Pathangam (Sublimates) :

Mercurial compounds are made into sublimation in specialized pots by keeping them in a small container called Moosai.

19. Chendooram (Calcined Red Oxide/ Sulphides) :

Metallic substances or padanam are made into red colour powder by adding decoctions, liquid of victory (Ceyaneer), acid etc. it is done by the process of burning/ drying/ grinding/ frying/ exposing to the sunlight.

20. Neeru, Venneeru or Parpam (Calcinated Oxides):

Metallic and organic substances are made into white powder by the process of burning/ frying / blowing, by adding juices/ liquid of victory / acids.

21. Chunnam (Calcinated Compounds) :

Mercurial, arsenic compounds/ metallic salts or metals are ground, either individually or in combination, in a stone mortor by adding juices/ acids and dried. It is then kept in Moosai, blown and made into white powders. They become red when turmeric powder is added to it because of the presence of lime in it (Calcium).

22. Patru (Semi - Solid Poultice)

Patru is called as poultice, which is soft and moist in nature, obtained from plant extracts or grinding crude raw drugs with or without heating and applied as a thick paste over the affected region. Duration: Once in a day at an interval of 3 - 7 days.

23. Ottradam (Fomentation):

It is the application of fomentation using pulses/ cereal/ husk/ lime/ brick powder/ leaves or salt. It may be defined as a method of rhythmic compression and relaxation of a hot or cold paste or cloth bags or vessels on the affected areas.

Ottradam removes the wastes as toxins through the skin and balance Mukkutram. It is also dilating all body channels for cleansing. Duration: 15 – 30 minutes, twice a day, for 10 – 15 days.

24. Poochu (Liquid Poultice):

Synonym: Thuvaalai

Poochu is the external application of leaf juices or oils, after gently heating them. It is a simple procedure adapted for balancing deranged humours • Duration: 15 – 30 minutes, once in a day for 3 – 48 days.

25. Thokkanam (Massage Manipulation):

Synonym : Marthanam

A therapeutic manipulation and mobilization procedure usually done with hands

in nine different ways with or without the application of medicated oil in five different postures (standing, sitting, walking, lying on side and supination).

Nine methods of manipulation:

- Thatuthal (Percussive strokes / Tapotement)
- Irukkal (Vibrations)
- Pidiththal (Deep stroking and picking up)
- Murukkal (Wringing)
- Kai kattal (Mobilization with impulse technique)
- Azhuththal (Kneading)
- Izuththal (Rolling and traction)
- Mallaththal (Slump long sitting)
- Asaiththal (Shaking)

The above methods are performed on the affected area or all over the body of the patient by using different kinds of forces called as Mantham (Mild force), Mathimam (Moderate force) and Sandam (Severe force) according to the applied pressure exerted by the physician or the therapist during massage depends upon the capability of the patient and also extend of the disease. Manipulation is hands on therapy used to restore normal health of muscle, joints, nerves and injured areas. It is employed for curative, palliative and preventive purposes. Duration: 30 – 60 minutes with an interval of 5 minutes in every 10 minutes

26. Suttigai (Cautery Cauterization):

It is defined as an exposing body/ part of body/ tissues using a hot instrument (hot metals, heated wood, sun rays, hot air). Duration: 2 – 5 seconds

27. Peetchu (Douche Application):

Peetchu is the method of insertion of liquid medicines to excrete or wash the internal organs using a piston or pipe. The instrument used to perform is called peetchu karuvi. The medicines used in Peetchu include decoctions, oil, honey dissolved water and salt dissolved water and few jelly substances. Anal peetchu expels fecal matter very shortly and easily and better than other methods. It is also helps in reducing weight and gives stamina without any contra indication. Peetchu is employed not only in anal enema, but it is beneficial in urethral, bladder and genital wash also. Peetchu is commonly performed in lumbar spondylosis, osteo arthritis, constipation, uterus prolapse, abdominal colic, white discharge and dysfunctional uterine bleeding. Duration: 15 - 30 minutes

1 OSTEOARTHRITIS

1
AZHAL KEELVAYU (OSTEO ARTHRITIS)

Azhal Keelvayu

NAMASTE Code : CAB1.1

WHO ISMT Code : ISMT-4.24.66

Osteoarthritis

ICD 10 code: M15 - M19

ICD 11 code: FA00 - FA05

ICD-11 TM 2: SP 12

CASE DEFINITION

[Osteoarthritis- https://icd.who.int/browse11/l-m/en and Azhal Keelvayu http://namstp.ayush.gov.in/#/index]

Osteoarthritis (OA) is a degenerative joint disease mainly affecting the articular cartilage. It is mostly associated with ageing and will most likely affect the joints continually stressed throughout the years, including the knees, hips, fingers, and lower spine region. [1]

Azhal keel Vayu is a disease that results in response to primary vitiation of Azhal humor due to consumption of inherently Azhal inducing foods and activities which in turn vitiates the Vali humor consequently. The disease is characterized by degeneration of joints due to the desiccation effect of Azhal and Vali with symptoms increasing day by day due to drying of lubrication factors leading to grating, clicking, and crackling of joints while walking.

INTRODUCTION (*incidence/ prevalence, morbidity/mortality)*

Keelvayu translates into "joint disease" caused due to vitiation of Vali humor. It is also synonymously known as *Sandhu vali*, *Mootu vali*, *Mega soolai*, *Mudakku vayu*, and *Aama vatham*. The Siddha system of medicine describes ten types of Keelvayu. This group of joint diseases includes Azhal keelvayu (Osteoarthritis) a commoner subtype with the symptoms of pain, swelling, pricking in the joints, clicking and crackling of joints, restriction of movements, and finally with worse the quality of life of the patient. It can also present with muscle weakness and balance issues. Consumption of foods that induce Vali humor such as tender bananas,

potatoes, groundnuts, and foods that dampen the body; exposure to chill weather, getting drenched in rain, and staying in mountains are ascribed to the pathogenesis of Keelvayu.

It is also genetically inherited[2]. The variant of joint disease with Azhal humor dominance is drawn parallel with the degenerative joint disease Osteoarthritis as described in contemporary medical practice. This condition encompasses joint disease featured with drying, desiccation, thinning of cartilage, bony eburnation, joint space reduction, bony excrescence, etc[3]. The presentation and progression of Azhal keelvayu vary significantly from person to person.

Disease Prevalence

Since Azhal keelvayu is considered congruent with osteoarthritis, its prevalence applies to Azhal keelvayu also. In India, nearly 80% of the population shows OA among the patients who claimed knee pain, of which approximately 20% reported incapability in daily activities. 480% of those with osteoarthritis have limitations in movement, and 25% cannot perform their major daily activities [5].

DIAGNOSTIC CRITERIA

Osteoarthritis is of two types:

- **Primary OA** refers to cases where the disease is not related to any prior condition or event affecting that joint but occurs due to wear and tear of the joints and relates to ageing.
- **Secondary OA[6]** includes causes such as congenital, trauma, metabolic, endocrine, joint disease, neurological, vascular, and bone disease.

Causes of Secondary OA:

Congenital	Localized diseases (e.g., congenital hip dislocation, Legg-Calve˙ -Perthes disease, slipped femoral epiphysis). Bone dysplasias (e.g., multiple epiphyseal dysphasia, Spondyloepiphyseal dysplasia, malposition (varus/ valgus))
Trauma	Both acute and chronic involving the joint or nearby bone causing mal-alignment
Metabolic	Ochronosis, haemochromatosis, Wilson's disease (hepato-lenticular degeneration), calcium pyrophosphate dihydrate disease (CPPD), Rickets
Endocrine	Acromegaly, Diabetes mellitus, Obesity
Joint diseases	Septic arthritis, Rheumatoid arthritis, Gout
Neurological	Charcot's arthropathy (Tabes dorsales, diabetes, syringomyelia and Charcot-Marie-Tooth disease)
Vascular	Avascular necrosis
Bone	Paget's disease of bone (osteitis deformans)

The diagnosis of OA is clinico-radiological and is made after a complete medical history and physical examination.

ACR Diagnostic Guidelines for Osteoarthritis of Knee, Hip, and Hand [7]

Items required for the presence of OA	
HAND	
Clinical 1. Hand pain, aching, or stiffness for most days of the prior month 2. Hard tissue enlargement of ≥ 2 of 10 selected hand joints 3. MCP swelling in ≤ 2 joints 4. Hard tissue enlargement of ≥ 2 DIP joints 5. Deformity of ≥ 1 of 10 selected hand joints	1, 2, 3, 4 or 1, 2, 3, 5
HIP	
Clinical and radiographic 1. Hip pain for most days of the prior month 2. ESR ≤ 20mm/h (laboratory) 3. Radiograph femoral and/or acetabular osteophytes 4. Radiograph hip joint-space narrowing	1, 2, 3 or 1, 2, 4 or 1, 3, 4
KNEE	
Clinical 1. Knee pain for most days of the prior month 2. Crepitus on active joint motion 3. Morning stiffness ≤ 30min in duration 4. Age ≥ 38 years 5. Bony enlargement of the knee on examination	1, 2, 3, 4 or 1, 2, 5 or 1, 4, 5
Clinical and radiographic 1. Knee pain for most days of the prior month 2. Osteophytes at joint margins (radiograph) 3. Synovial fluid typical of OA (laboratory) 4. Age ≥ 40 years 6. Morning stiffness ≤ 30min 7. Crepitus on active joint motion	1, 2 or 1, 3, 5, 6 or 1, 4, 5, 6

DIP: distal interphalangeal joints, PIP: proximal interphalangeal joints; MCP: Metacarpophalangeal joints

CLINICAL EXAMINATION[7]

During the physical exam, the examiner should look at the following points: Look, feel, and move each joint, evaluating it for swelling, warmth, or tenderness; the range of motion; the pattern of affected joints (such as one knee, both knees, knuckles, wrists, or shoulders). Often, the pattern of joints affected can help to tell the difference between osteoarthritis and other types of arthritis; any bony knobs (osteophytic changes) on joints (especially the fingers).

During physical findings in osteoarthritic joints, the examiner should look at Joint line tenderness, bony enlargement, crepitus, effusions, and decreased range of motion. Pain on passive motion is also common, Erythema (unusual except in DIP and PIP joints), and effusion (unusual except in the knee joints), suggest active inflammation. If hands are involved, particularly the distal and proximal interphalangeal joints, the examiner should look at bony enlargements such as Heberden's and Bouchard's nodes.

Figures[8]:

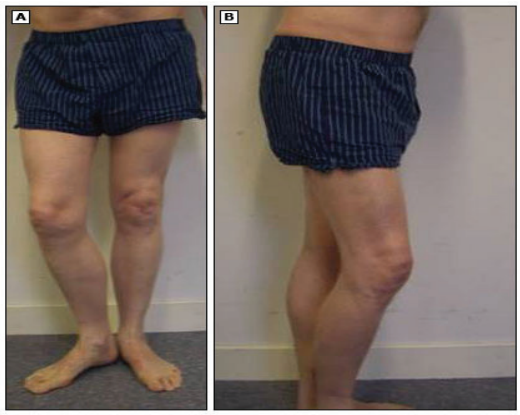


Figure 1: Patient with right hip OA, showing fixed flexion and external rotation deformity.

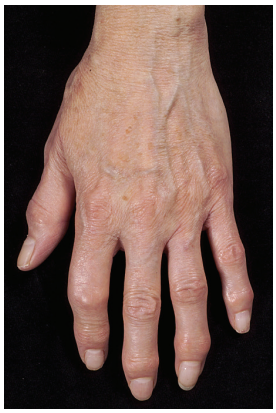


Figure 2: Heberden's nodes (thumb, middle, ring, and little finger DIP joints), Bouchard's nodes (index finger PIP joint), and lateral radial/ulnar deviation (index PIP joint, ring DIP joint) in the left hand of a person with nodal OA.

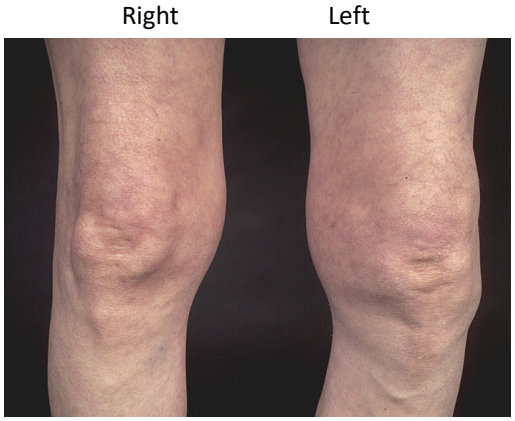
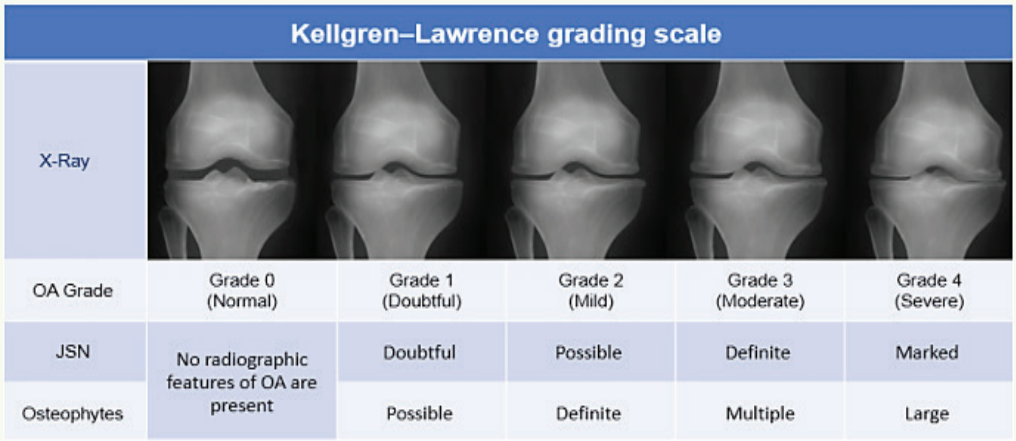


Figure 3: Unilateral knee OA: swollen left knee with varus and fixed flexion deformity in a 63-year-old man with a prior history of knee trauma. On palpation, there was marked crepitus, restricted flexion, bony swelling, and a small effusion. The cruciates were intact, but there was minor varus/valgus instability on stress testing.

SUPPORTIVE INVESTIGATIONS

Osteoarthritis is a diagnosis made on clinical and radiological grounds. A plain X-ray is usually the only helpful investigation. Furthermore, radiographic changes of OA are commonly present but often asymptomatic. OA does not trigger the acute phase response and therefore has no impact on the FBC, ESR or CRP [9]. However, some investigations may be necessary to exclude alternative diagnoses or predisposing diseases.

<table>
<tr><th>Investigation</th><th>Findings</th></tr>
<tr><td>X-ray</td><td>Osteophyte formation and joint space narrowing (JSN). The classification of X-ray findings is as follows:
<table>
<tr><td>Grade 0</td><td>no radiographic features of OA are present</td></tr>
<tr><td>Grade 1</td><td>doubtful joint space narrowing (JSN) and possible osteophytic lipping</td></tr>
<tr><td>Grade 2</td><td>definite osteophytes and possible JSN on the antero-posterior weight-bearing radiograph</td></tr>
<tr><td>Grade 3</td><td>multiple osteophytes, definite JSN, sclerosis, possible bony deformity</td></tr>
<tr><td>Grade 4</td><td>large osteophytes marked JSN, severe sclerosis, and definite bony deformity</td></tr>
</table>
Figure 4:

</td></tr>
<tr><td>Magnetic resonance imaging</td><td>It is more expensive than X-rays but will provide a view that offers better images of cartilage and other structures to detect early abnormalities typical of osteoarthritis. The MRI is required only in selected cases.</td></tr>
<tr><td>Joint aspiration</td><td>It is not mandatory due to the danger of possible infection. However, if done, the fluid is examined for evidence of crystals or joint deterioration. This test helps rule out other medical conditions or other forms of arthritis.</td></tr>
<tr><td>Synovial fluid</td><td>Synovial fluid examination usually shows mild leucocytosis (< 2000/mm^3) with mononuclear cell predominance to predict disease progression.</td></tr>
</table>

Envagai Thervu (Eight Fold System of Clinical Assessment):

Naadi	–	Vatha pitham / Pitha vatham / Pitha kabam
Sparisam	–	Examination of joints: Tenderness / Crepitation Present
Naa	–	Normal / Pallor / Coated
Niram	–	Normal
Mozhi	–	Normal / Low pitched
Vizhi	–	Normal / Pallor
Malam	–	Normal / Constipation
Neer		
Neerkuri	–	Yellowish in color; tamarind odour
Neikkuri	–	Oil may spread in the form of Pitham / Kabam Pattern

DIFFERENTIAL DIAGNOSIS[8,9]

Condition	Differential Features
Bursitis	• Tenderness directly over the bursa with pain elicited by any active motion that employs muscles adjacent to the involved bursa
Rheumatoid arthritis	• Arthritis of three or more joint areas • Symmetrical arthritis • Morning stiffness (> 1 hour) • Positive rheumatoid factor • Positive anti-CCP antibody • Elevated ESR and CRP
Psoriatic arthritis	• Onset usually between 25 and 40 years of age • Most commonly in patients with current or previous skin psoriasis (70%) • Affection of the DIP joints of the hands. However, unlike hand OA, psoriatic arthritis may target just one finger, often as dactylitis, and characteristic nail changes are usually present. • HLA-B27 Positive.
Gout	• Most commonly affects the first metatarsophalangeal joint in over 50% of cases-'podagra' • Typical attacks of pain with an extremely rapid onset, reaching maximum severity in just 2-6 hours, often waking the patient in the early morning with florid inflammation and erythema. • Large MSUM crystal deposits as irregular firm nodules ('tophi') at the usual sites for nodules around extensor surfaces of fingers, hands, forearm, elbows, achilles tendons and sometimes the helix of the ear, unlike OA.

Condition	Differential Features
	• Elevated serum uric acid levels (>0.42 mmol/l or 7.1 mg/dl) • Monosodium urate crystals in synovial fluid
Calcium pyrophosphate crystal deposition (CPPD) disease	• Involves multiple joints, frequently involving peripheral joints of the upper and lower extremities, including the wrists and metacarpophalangeal (MCP) joints, as well as the knees and elbows • Nearly symmetrical arthritis • Radiographic articular chondrocalcinosis. • CPPD crystals in synovial fluid
Hemochromatosis	• Affects mainly the MCP joints and wrists • Men are most affected. • Characteristic radiologic findings are squared-off bone ends and hook-like osteophytes in the MCP joints, particularly the second and third MCP joints • Increased plasma iron levels • Increased serum ferritin levels
Infectious arthritis	• Joint pain that progresses from day to day with inflammatory signs (eg, effusion, increased warmth, erythema) • Diagnosis is established by culturing the pathogen from the synovial fluid or from the blood. • Elevated ESR and CRP
Soft tissue trauma and peri-articular Disorders	• History of overuse, typically involving sports with jumping or sudden direction change • Pain increases with activity and decreases with rest
Neurological Disorders (e.g., radiculopathy or neuropathic pain)	• Often associated with paresthesias or an "electric" sensation • Typically radiates along the course of the nerve

Siddha Differential diagnosis

Condition	Differential Features
***Uthiravatha Suronitham* (Rheumatoid Arthritis)**	• swelling in knee, ankle and dorsum of feet, and severe pain in minor joints; • patient undergoes distress and loses interest in oral intake

Condition	Differential Features
Peruviral Vatham **(Gouty Arthritis)**	• chronic inflammatory disease characterized by pain and swelling in the first metatarsophalangeal joint.
Narithalai Vatham **(Synovitis with Knee joint effusion)**	• Collection of serosanguineous fluid or blood in knee resembling head of fox, difficultly in movements of knee joints and in standing up from sitting position
Iyya Keelvayu **(Infectious arthritis)**	• evening rise of temperature with chills, joint pain, swelling of joints which does not resolves easily • stiffness, • emaciation • Continuous fever
Kalanjaga Vatham **(Psoriatic arthritis)**	• Diffuse pain in joints of upper and lower limbs, • inability to walk, • restriction of movements • Stiffness • Pallor • skin lesions with itching,

Diagnosis:

It is based on the clinical symptoms described, imaging using Kellgren and Lawrence OA grading System, and laboratory investigations of Acute phase reactants (CRP & ESR) and Antibodies (Anti-CCP, ANA, ASO) excluding the inflammatory arthritis.

PRINCIPLES OF MANAGEMENT

Red Flag Signs of OA:

These signs should be assessed before initiating treatment for need for management through modern medicine.

- **Sudden Severe Pain**
- **Buckling of the Knee**
- **Swelling and Warmth**
- **Knee Locking**
- **Persistent Pain**
- **Consistent Knee Pain even After Surgery**

Patients should be educated on their diagnosis. Misconceptions exist about OA. Patients are concerned about possible progression to disability. There should be an emphasis on

the natural history of OA. Therapeutic options need to be discussed that emphasise lifestyle changes such as exercise and weight control that might be helpful. Lifestyle changes should be individualised, minimising limitations in activities of daily living.

(A) Prevention management[7, 16]

Primary, secondary, and tertiary prevention strategies are necessary to prevent increasing rates of OA resulting from an ageing population and increasing rates of obesity and physical inactivity. These include non-pharmacological approaches such as changes in *diet and lifestyle, weight management, yoga, exercise, patient education, psychosocial measures, support devices, thermal modalities, and alterations in activities of daily living. Reassurance, counselling, and education may minimise the influence of psychosocial factors. Thermal modalities are potentially helpful in decreasing joint stiffness, alleviating pain, relieving muscle spasms, and preventing contractures.*

(B) Interventions

At Level 1- Solo Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited)

Clinical Diagnosis: The diagnosis of OA is primarily clinical and made after a complete medical history and physical examination. However, some investigations, like a complete hemogram and X-ray, may be done.

Recommended Diet and Lifestyle [5, 16,17,18,19]

Exercise - Advise people with osteoarthritis to exercise as a core treatment irrespective of age, co-morbidity, pain severity or disability. It covers both muscle strengthening and aerobic exercises [20].

S.no.	*Exercises*	
1.	**Knee flexion and Extension** Lying on your back with your knee straight. Slowly bend the affected knee as far as comfortable. Hold the position for 10 seconds and then slowly return to a straightened position. Repeat 10 times.	
2.	**Inner Range Quadriceps** Place a small rolled-up towel under your knee. Tighten your thigh muscles and straighten your knee (keep the knee on the towel and lift your foot off the floor). Hold for 5-10 seconds and slowly relax. Repeat 10 times.	

S.no.	Exercises	
3	**Quadriceps Strengthening—Sit to stand** Sit on a chair with your arms folded. Slowly stand up without using your arms. When upright, return slowly to the chair again without using your arms. Repeat 10 times.	
4.	**Quadriceps Strengthening—Mini Squat** Using a chair for balance, squat down bending both knees but keeping the back straight. The squat should be no more than 45 degrees. Repeat 10 times.	
5.	**Calf strengthening - Heel Raises** Using a chair for balance, push up onto your tip toes and back down again. You can do this just on your affected leg if you are able to balance. Repeat 10 times.	
6.	**Step up** Stand in front of a step. Step up 10 times with one leg leading and then repeat with the other leg leading.	
7.	**Clam** Lie on your side with your knees bent. Tighten your buttocks. Lift your top knee as far as you can, without letting your pelvis rotate forward or back. Keep your feet together and back straight during the exercise. Lower slowly back down. Repeat 10 times.	

S.no.	Exercises	
8.	**Hamstring Stretch** Stand upright and place the foot of your affected leg on a step. Slowly lean forward at your hips until you feel a stretch at the back of your thigh. Keep your back straight. Hold for 20—30 seconds, repeat 5 times.	
9.	**Quadriceps Stretch** Stand upright, holding on to a firm support. Loop a towel around the ankle of your affected leg. Keeping your back straight, use the towel to pull your heel towards your bottom to feel a stretch at the front of your thigh. Hold for 20-30 seconds. Repeat 5 times.	
10.	**Calf Stretch** Stand in a walking position with the affected leg straight behind you and the other leg bent in front of you. Take support from a wall or chair. Lean forwards until you feel the stretching in the calf of the straight leg. Hold for 30 seconds, repeat 5 times.	

Yoga[21]: Various yoga practices are helpful for the management of patients with OA. These include *kriyas (kunjal and kapalbhati), simple joint movements, practices of sukshma vyayama, yogasanas (tadasana, katichakrasana, konasana, urdhwa hastottanasana, uttana padasana, gomukhasana, marjari asana, ushtrasana, bhadrasana, bhujangasana, makarasana, shavasana), pranayama (nadishodana pranayama, suryabhedi pranayama, bhramari), yoga nidra practice and meditation.*

Weight loss*- Each kg increases the loading across the knee three to six-fold. Thus, weight loss, if substantial, may lessen the symptoms of knee and hip OA.*

Nutrition*- Adequate nutrition should be taken. A diet rich in vitamins A, C, E, and K helps reduce the risk of osteoarthritis. Consumption of long-chain n-3 fatty acids (oily fish/fish oil supplements), should be increased, which may improve pain and function in OA patients.*

Restricted Diet and Lifestyle[28]

- Don't overeat. Avoid foods that worsen the signs and symptoms of OA, such as sugar, deep-fried foods, saturated fats, full-fat dairy, trans fats, refined carbohydrates, alcohol, and preservatives like monosodium glutamate (MSG).
- Don't smoke. Smoking speeds up the process of general wear and tear of our bones and muscles. This might increase your risk of developing osteoarthritis or other chronic diseases. Men with knee osteoarthritis who smoke sustain more significant cartilage loss and have more severe knee pain than men who do not smoke.
- Don't do vigorous and repetitive exercises.
- Avoid exercising during flare up or acute pain.
- Avoid jobs requiring knee bending and carrying heavy loads

Follow Up (every 15 days or earlier as per the need)

Reviews should include:

- Monitoring the person's symptoms and the ongoing impact of the condition on their everyday activities and quality of life.
- Monitoring the long-term course of the condition.
- Management of osteoarthritis in terms of exercise, and physiotherapy.
- Discussing the person's knowledge of the condition, any concerns they have, their personal preferences, and their ability to access services.
- Reviewing the effectiveness and tolerability of all treatments.
- Self-management support.

At Level 1

(Choice of medicines, doses, and duration may be altered according to the condition of the patients and severity of the disease)

Siddha Line of Treatment [24,25,26,27,28,29,30]:

Day 1- Ennai muzhukku (Oil bath - Oleation)

Oleation is the practice of massaging the head with medicated oils. It is recommended to give strength to five sense organs (Panchaendrinyangal). Patients, elderly persons, children, and those who are taking oil bath should bath only in lukewarm water. Futher depending upon the season, country and state of body health, water soaked with Mangifera indica, Emblica officinalis leaves or water mixed with aromatic powder or clear water may be used for bathing according to the circumstances.

Vitiated Azhal should be corrected by an Oil bath with medicated oils that mitigate the Azhal humor.

- Seeraga Thailam- Quantity sufficient (For Ext. Use only)
- Santhanathi Thailam - Quantity sufficient (For Ext. Use only)
- Chukku Thailam - Quantity sufficient (For Ext. Use only)

(Anyone thailam may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2- Kazhichal (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice (Zingiber officinale) at early morning in empty stomach.
- Meganatha kuligai - 1-2 pills with ginger juice (Zingiber officinale) at early morning in empty stomach

(Anyone medicine may be used)

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 3- Rest

Day 4- Internal Medicines:

Churanam:

- Thirikadugu Churanam - 1-3 gm with honey, B.I.D, after food for 48 days
- Amukkara Churanam - 1-3 gm with honey, B.I.D, after food for 48 days
- Elathy Churanam - 1-3 gm with lukewarm water, B.I.D, after food for 48 days
- Parangipattai Churanam - 1-3 gm with honey, B.I.D, after food for 48 days

(Either one or two Churanam(s) may be administered)

Parpam:

- Sangu parpam - 100 - 300 mg with ghee, B.I.D, after food for 48 days
- Kungiliya parpam - 100 - 300 mg with ghee, B.I.D, after food for 48 days

Chenduram:

- Arumuga chenduram - 100 - 200 mg with honey, B.I.D, after food for 7-14 days

(Any one parpam and one Chenduram may be administered)

External Medicines:

Poochu (Liquid / Oil Poultice):

- Karpoorathi thailam – Quantity sufficient
- Kunthiriga thailam - Quantity sufficient

(Any one or both oils may be used)

Pattru (Semi-Solid Poultice):

- Kavikkal (Red ochre)
- Kazharchi (Caesalpinia bonducella)
- Moosambaram (Kariabolam) (Aloe littoralis)
- Aavarai Ulunthu Mixture in 1:1 ratio (*Cassia auriculata* and *Vigna mungo*) with egg white or drumsticks leaves juice.

(Any one Pattru may be used)

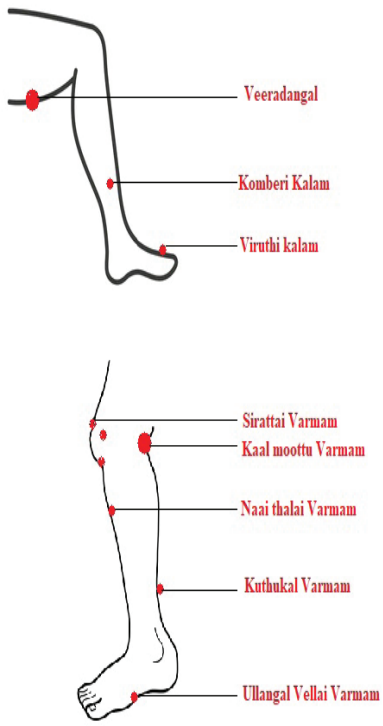
External Therapies:

Varma maruthuvam:

- Sirattai varmam
- Kuthikaal varmam
- Naai thalai varmam
- Komberi kaalam
- Kaal moottu varmam
- Viruthi kaalam
- Veeradangal
- Ullankaal vellai varmam

Rules to be followed in Varma maruthuvam:

- Varmam Maruthuvam should only be done by Siddha Physician.
- Physician performing VarmamMaruthuvam should be free from sharp nails.
- Avoid approaching Varmam pressure points with nails & sharp metallic instruments.
- The better posture of the patient for VarmamMaruthuvam is sitting/ lying, so that physician will have the direct contact with patient‟s eye.
- Varmam Maruthuvam can be done twice a week; in case of severity of the disease, treatment can be recommended daily.
- Varmam pressure points will vary according to the patient‟s age, thega ilakkanam(Body Constitution/ Biotype) and severity of disease condition.
- Based on the severity and condition of the disease, the Siddha physician can prescribe the medicines along with Varmam maruthuvam.
- Naadi of the patient has to be analysed prior to Varmam maruthuvam.
- A male physician to male patient and a female physician to a female patient are preferable
- Varmam maruthuvam should not be done during severe systemic illness, semen ejaculation, uncontrolled passage of urine, stools, etc.,
- Varmam treatment is not advised for pregnant women. If needed, shall be decided by the Varmam expert.
- Varmam treatment is not advised for patients under the influence of alcohol, bitten by Snakes/ scorpion.



Level- I
Model prescription

Day 1- Chukku thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach - Kazhichal maruthuvam (Purgation).

Day 3- Rest

From Day 4-

Thirikadugu Churanam - 1-3 gm with honey, B.I.D, after food, for 24 - 48 days.

Kungiliya parpam - 100 - 300 mg with ghee, B.I.D, after food, for 24 - 48 days.

Arumuga Chenduram - 100 - 200 mg with honey, B.I.D, after food, for 24 - 48 days.

Kunthiriga thailam - Quantity sufficient (Ext), for 24 - 48 days.

Aavaarai ulunthu Pattru - Quantity sufficient (Ext), for For 2-3 months (made paste with egg white or drumstick leaves juice).

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below.

Follow up and duration:

Patients will be followed up weekly and will be treated upto 3 months depending upon the symptoms.

Referral Criteria:

- Cases in which the aforementioned therapy is ineffective or ineffectively effective, which result in symptoms getting worse or major joint constraints brought on by pain and inflammation.
- Cases involving any other joint pathology, such as rheumatoid arthritis, gout, etc., that need additional testing and higher-level medical care in order to confirm the diagnosis.
- Patients with a variety of untreated co-morbidities who need rapid therapeutic intervention from traditional medicine.

Referral Criteria

- Non responsiveness to treatment
- Evidence of an increase in severity/complications
- Substantial impact on their quality of life and activities of daily living
- Diagnostic uncertainty
- Uncontrolled co-morbidities, such as diabetes, hypertension or associated cardiac disease.

At Level 2 (CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray)

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh case must be evaluated thoroughly for any complications.

Investigations: The diagnosis would be primarily clinical. However, some investigations may be necessary to investigate complications or exclude other differential diagnoses as follows:

- Haemogram
- X-ray
- Magnetic resonance imaging
- Joint aspiration
- C-reactive protein
- Synovial fluid examination
- Serum uric acid

- RA Factor
- S. alkaline phosphatase

Management: Same as level 1.

Other procedures:

- Physiotherapy including exercises, massage, transcutaneous electrical nerve stimulation (TENS), thermotherapy, and braces may be done as per the case's need under a physiotherapist's guidance.
- Occupational Therapy: Therapeutic activities and exercises to promote gross and fine motor control, range of motion, endurance, and strength, thereby improving functional abilities with daily tasks such as self-care, home management, and work and leisure activities under the guidance of an occupational therapist.
- Orthosis/mechanical aids- These protect joints and help reduce pain by statically holding the joint(s) in place. They decrease the load by positioning the affected joint(s) and by supporting the joint(s) to prevent distortion from deforming forces. In knee osteoarthritis, shock-absorbing footwear reduces the impact of a load on the knee. Heel wedging improves proprioception and reduces pain in osteoarthritis of the knee.

Recommended Diet and Lifestyle: Same as level 1

Restricted Diet and Lifestyle: Same as level 1

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 1, plus
- Failure of acute exacerbation to respond to initial medical management
- Advanced stages of disease like severe effusion, contractures, osteoporosis, or deformities.

(Choice of medicines, doses, and duration may be altered according to the condition of the patients and severity of the disease)

Siddha Line of Treatment:

At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1- Ennai muzhukku (Oleation)

- Arakku Thailam - Quantity sufficient (For Ext.use only)

- Seeraga Thailam - Quantity sufficient (For Ext. Use only)
- Santhanathi Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Vathanaasa Thailam- 15 - 30 ml with lukewarm water at early morning in empty stomach
- Kazharchi Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach

(Any one may be used)

Day 3: Rest

Day 4: **Internal Medicines:**

Kudineer Churanam:

(Kudineer should be prepared with 5 to 10gms of Kudineer Churanam by weight)

- Vatha sura kudineer - 30-60 ml, B.I.D, before food for 24 days

Churanam:

- Thiripala Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days
- Nilavaagai Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days.
- Pirandai Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days.

(Either one or two Churanam(s) may be administered)

Parpam:

- Silasathu parpam -125 - 325 mg with ghee, B.I.D, after food for 48 days
- Muthuchippi parpam - 200 - 400 mg with milk/ ghee, B.I.D, after food for 48 days
- Paal karudakal parpam- 100 - 200 mg with milk/ ghee, B.I.D, after food for 48 days

Chenduram:

- Ayakantha Chenduram - 65 - 130 mg with honey, B.I.D, after food for 7-14 days
- Ayaveera Chenduram - 50 -100 mg with honey/ palm jaggery, B.I.D, after food for 7-14 days.

(Either one parpam or one Chenduram may be administered)

Mathirai:

- Vishnu chakkaram Mathirai - 1 - 2 nos with honey, B.I.D, after food for 24 days.
- Vatha ratchasan Mathirai- 1 - 2 nos with honey, B.I.D, after food for 24 days

(Any one mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Thetrankottai ilagam - 3 - 5 gm with warm milk, B.I.D, after food for 48 days.
- Amukkara ilagam - 3 - 5 gm with warm milk, B.I.D, after food for 48 days.

(Any one ilagam may be used)

Nei :

- Thanneervittan Nei - 5-10 gm with milk, B.I.D, after food for 48 days
- Chitramutti Nei - 5-10 gm with milk, B.I.D, after food for 48 days

(Anyone nei may be used)

External Medicines:

- Vatha kesari thailam – Quantity sufficient
- Laguvidamutti thailam – Quantity sufficient
- Chitramutti thailam – Quantity sufficient
- Kayathirumeni thailam – Quantity sufficient
- Sivappu Kukkil Thailam - Quantity sufficient

(Any one or two oils may be used)

Kattu (Compress or Bandage):

- Brahmi leaves (Baccopa monneri)
- Murungai leaves (Moringa oleifera)
- Vaelai leaves (Cleome viscosa)
- Vidamoongil kizhangu (*Crinum asiaticum*)

(Any one or some or all of the combinations of kattu may be used)

Ottradam (Fomentation):

- Kazharchi leaves (Caesalpinia bonducella)
- Thazhuthazhai leaves (Clerodendrum phlomidis)
- Notchi leaves (*Vitex negundo*)
- Vathanarayanan leaves (Delonix elata)
- Aamanakku leaves (Ricinus communis)
- Vallarai leaves (Centella asiatica)
- Mudakattran leaves (*Cardiospermum halicacabum*)

(Some or all of the combinations of ottradam may be used)

Level- II

Model prescription

Day 1- Arakku thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Vadhanaasa thailam- 10-15ml with lukewarm water at early morning in empty stomach

Day 3- Rest

From Day 4-

Amukkara Churanam- 1-3 gm with milk, B.I.D, after food for 48 days, for 24 - 48 days.

Muthuchippi parpam - 200 - 400 mg with ghee, B.I.D, after food, for 24 - 48 days.

Vishnu chakkaram Mathirai - 1 - 2 nos with honey, B.I.D, after food for 24 days.

Kurunthotti kudineer - 30 - 60 ml, OD, before food for 24 - 48 days.

Thetrankottai ilagam - 3 - 5 gm with warm milk, B.I.D, after food for 48 days

Kayathirumeni or Sivappu Kukkil Thailam- Quantity sufficient (Ext), for 2 – 3 months.

Nelikkai Saaru from 5 fruits for 90 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms or develop severe effusion, contractures or deformities.
- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus and hypertension etc.

At Level 3 (Ayush hospitals attached with teaching institution, District Level/Integrated/ State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities), multiple departments/facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counselling, and physiotherapy unit.

Clinical Diagnosis: Same as levels 1& 2.

Confirm diagnosis and severity with the help of investigations like magnetic resonance imaging, joint aspiration, and synovial fluid examination.

Management: Same as levels 1& 2.

In addition to the level 1 and level 2 management strategies, homoeopathy has a number of specific remedies that can ease pain and other symptoms in patients with end-stage osteoarthritis or in those who have not responded to treatment due to a lack of symptoms, co-morbid conditions, or the use of other immunosuppressives, oral hypoglycemic agents, or antihypertensives. Palliative care medications can therefore be provided based on the sphere of action or keynote prescription in these disorders as well as other advanced pathological states.

At Level 3

In addition to level 1& 2 management the following will be exclusively used in level 3

Line of Treatment:

Day 1-Ennai muzhukku (Oleation)

- Chukku Thailam - Quantity sufficient
- Ulunthu Thailam - Quantity sufficient

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

Day 3- Rest

Day 4- Internal Medicines:

Churanam:

- Drakshathi Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days.
- Keezhanelli Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days.
- Ashta Churanam - 1 - 3 gm with lukewarm water, B.I.D, after food for 48 days.

(Any one or two Churanams may be used)

Parpam:

- Muthu parpam - 60 - 120 mg with ghee, B.I.D, after food for 48 days
- Pavala parpam - 65 - 200 mg with ghee, B.I.D, after food for 48 days

(Any one parpam may be used)

Chenduram:

- Chanda marutha Chenduram - 50 - 100 mg with honey/ ginger (Zingiber officinale) juice/ palm jaggery/ thirikadugu churanam, B.I.D, after food for 5 days.
- Poorana Chandrodhayam - 50 - 100mg with honey/ karpoorathy Churanam, B.I.D, after food for 5 days.

(Any one Chenduram may be used)

Mathirai:

- Karuppu Vishnu chakra Mathirai - 1 - 2 nos with honey, B.I.D, after food for 24 days.
- Pachai karpoora Mathirai- 1-2 tablets ,with honey or lukewarm water, B.I.D, after food for 24 days.

(Any one mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Mahavallathi ilagam - 5 - 10 gm with milk, B.I.D, after food for 48 days
- Thetrankottai ilagam – 5-10 gm with warm milk, B.I.D, after food for 48 days.

(Any one ilagam may be used)

Mezhugu:

- Rasagandhi mezhugu - 250 - 500 mg with palm jaggery, B.I.D, after food for 3 - 5 days.
- Nanthi mezhugu - 65 - 130 mg with palm jaggery, B.I.D, after food, based on disease condition for 12, 25, 45 days (or) 10,20,30,40 days.
- Vaan mezhugu - 50 - 100 mg with palm jaggery, B.I.D, after food for 3 to 5 days.

(Any one mezhugu may be administered
either before or after the course of administration of Chenduram)

External Medicines:

Poochu (Liquid/Oil Poultice):

- Chitramutti Thailam – Quantity sufficient
- Kayathirumeni thailam - Quantity sufficient
- Mahavida muti thailam - Quantity sufficient

(Any one or two oils may be used)

Thokkanam: (Massage)

Suttigai (Cautery cauterization):

- Manjal kombu (Rhizome of Curcuma longa)
- Uloga Suttigai (Metal Cauterization)

Attai Vidal (Leech Therapy):

Medicated leeches are placed on specific places at specific times over the affected area.

Level- III

Model prescription

Day 1- Ulunthu Thailam- Quantity sufficient- Ennai muzhukku (Oleation).

Day 2- Siddhathi ennai- 3 - 5 drops with Sombu kudineer at early morning in empty stomach (Purgation)

Day 3- Rest

From Day 4-

Keezhanelli Churanam - 1-3 gm with honey, B.I.D, after food for 48 days

Muthu / Silasathu / Sangu parpam- 100 - 300 mg with ghee, B.I.D, after food, for 24 - 48 days.

Chanda marutham Chenduram - 50 - 100 mg with honey/ ginger *(Zingiber officinale)* juice/ Palm jaggery/ Thirikadugu Churanam, B.I.D, after food for 5 days.

Vishnu chakkaram Mathirai - 1-2 pills with ginger juice *(Zingiber officinale)* Honey, B.I.D, after food, for 24 - 48 days.

Idivallathi mezhugu - 250-500 mg with palm jaggery, B.I.D, after food, for 7- 14 days

Kayarajangam ennai - 10 -15 ml with lukewarm water ,B.I.D, after food, for 7- 14 days.

Vadhakesari Thailam - Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may be vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management.

Referral criteria:

- Patients with severe chronic contractures or deformities including valgus deformity, full joint degeneration, severe effusion that is not eased by previous therapy, patients with indications for surgical intervention to manage osteoarthritis.

- Patients who require immediate attention at higher centers because their co-morbidities cannot be handled in the Level 3 setting.

Prevention Management

Preferable Diet & Lifestyle

TABLE 1:

1.	**Salt**	1.Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1.Kodam puli *(Garcinia cambogia)*
3.	**Oil**	1.Nallennai *(Gingelly oil)* 2.Kadalennai *(Groundnut oil)*
4.	**Dairy products**	1.Cow & Goat (Milk & Ghee) 2.Butter milk
5.	**Sugar**	1.Panai vellam (Palm jaggery) 2.Naatu sarkarai 3.Karupatti
6.	**Spices**	1.Vendhayam (*Trigonella foenum)* 2.Lavanga pattai (*Cinnamom verum)* 3.Milagu *(Pepper nigrum)* 4.Elam *(Elettaria cardamom)* 5.Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1.Ulunthu *(Vigno mungo)*
8.	**Millets**	1.Ragi *(Eleusine coracana)* 2.Varagu *(Paspalum scrobiculatum)* 3.Thinai *(Setaria italica)* 4.Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varieties)**	1.Mani samba 2.Seeraga samba 3.Kai kuthal arisi 4.Puzhungal arisi
10.	**Greens**	1.Manli keerai *(Giseka pharnaceoides)* 2.Vallai keerai *(Convolvulus repens)* 3.Kothamalli keerai *(Coriandrum sativum)*
11.	**Vegetables**	1.Kathiri pinju *(Solanum melongena)* 2.Avarai pinju *(Lablab purpureus)* 3.Murungai pinju (*Moringa oleifera)* 4.Avarai pinju(*Dolichos lablab)*

12.	**Tubers**	1.Mullangi *(Rhaphanus sativus)* 2.Karunai *(Amorphophallus paeoniifolius)* 3.Koogai (*Maranta arundinacea)*
13.	**Non -Veg**	1.Velladu(*Goat*) 2.Kaadai (*quail)* 3.Kaanan kozhi (*White breasted waterhen)*

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
Karungali *Acacia catechu* (Root)	Ulunthu kali *(Vigna mungo*)	Irumurai va-ditha kanji	Varagu satham *(Paspalum scrobicula-tum*)	Naarathai (*Citrus medica*)	Sundai vatral (*Solanum xantho-carpum*)	Murungai keerai soup (*Moringa oleifera*)
		Arisi vaditha sudu kanji	Thinai satham *(Setaria ital-ica)*	Kalakkai (*Carissa carandas*)	Thoothuvalai vatral (*Solanum trilobа-tum*)	Mudavaatu kaal (*Drynaria quercifolia*)
		Koogai mavu kanji *(Maranta arundinacea)*	Saamai satham *(Panicum sumatrense)*		Nelli vatral (*Phyllanthus em-blica*)	
		Venthaya kanji (*Trigonella foenum)*			Aathondai vatral (*Capparis zylan-ica*)	
		Raagi kanji *(Eleusine coracana)*			Manathakkali (*Solanum torvum*)	
		Chukku mudi kanji (Zingiber offici-nale)			Pirandai vatral (*Cissus quadran-gularis*)	

To be avoided

TABLE 3:

Vatham-inducing foods like root tubers except Karunai kizhangu
Maa porutkal (Carbohydrates-rich diet)
Vaazhai (tender fruit of *Musa paradisiaca*)
Urulai Kizhangu (*Solanum tuberosum*)
Senai Kizhangu (*Amorphophallus paeoniifolius*)

Vaer kadalai (*Arachis hypogea*)
Pattani (*Pisum sativum*)
Mochai (*Vicia faba*)
Sour and astringent foods
Sea foods except small prawns
Smoking, tobacco chewing and alcohol
Prolonged standing and sitting

b.Yoga

Siddhar Yoga Maruthuvam:

- Tadasanam
- Shasangasanam
- Marjariasanam
- Shasanka bhujangasanam
- Savasanam
- Suryanamaskaram (advised as per the severity of the disease)
- Naadisuthi – Pranayamam
- Bhastrika pranayamam

Referral Criteria

- Septic arthritis
- Patient classified as Grade III or IV in Kellgren Lawrence imaging system and a potential candidate for knee / Hip joint replacement [7].
- Hemarthrosis
- Osteonecrosis
- Complete ligament tear

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2 RHEUMATOID ARTHRITIS

2

UTHIRA VATHA SURONITHAM / RHEUMATOID ARTHRITIS

Uthira Vatha Suronitham

NAMASTE Code : Z64

WHO ISMT Code : ISMT-4.24.155

ICD 11 code: SP10

Rheumatoid Arthritis

ICD 10 code: M06.9

ICD 11 code: FA20.0

ICD 11 code: SP10

CASE DEFINITION [1,2]

[Rheumatoid arthritis - https://icd.who.int/browse11/l-m/en and Uthira Vatha Suronitham - http://namstp.ayush.gov.in/#/index]

Rheumatoid Arthritis (RA) is a progressive, disabling, chronic multi system disease which is characterized by pain, swelling and stiffness of the synovial joints, often worse in the morning and after periods of inactivity. It exhibits symmetrical, destructive, and deforming polyarthritis affecting small and large synovial joints with extra articular manifestations, including fatigue, subcutaneous nodules, lung involvement, pericarditis, peripheral neuropathy, vasculitis, and hematologic abnormalities. It is associated with systemic disturbance and presence of circulating antiglobulin antibodies.

Uthira Vatha Suronitham is a chronic as well as systemic inflammatory arthritis that mainly affects the tissues and organs due to the escalation of Pitham humour along with Vatham. The disease is characterized by pain and swelling in the ankle joint, knee joint, heel of the foot, and joints of fingers, which is followed by dizziness, and anorexia.

INTRODUCTION (*incidence/ prevalence, morbidity/mortality, Risk factors)*

Uthira Vatha Suronitham (UVS) is inclusive of autoimmune inflammatory arthritis caused due to vitiated Pitham humour with features consistent of Rheumatoid arthritis. It is synonymously known as Vali azhal Keel vayu in Siddha system[3]. Uthira Vatha Suronitham is one among the 80

types of Vatha disease classified by Sage Yugi in his treatise Yugi Vaidhya Chinthamani. The symptoms of Uthira Vatha Suronitham are characterized by swelling in both knee joint, wrist joint, ankle joint, and dorsum of feet and severe pain in minor joints, patient endures distress and loses interest in oral intake which is due to vitiation of Vali & Azhal humors. According to the Siddha system, the pain and redness are caused by excessive consumption of Vatha prone foods such as potato, mutton, fish, egg, shark, undigested food products, exposure to cold air and rain, frequent consumption of alcohol and lack of physical activity [3]. These undigested foods cause belching, flatulence, constipation, and obesity.

The reported prevalence of RA in Indian population as per criteria of revised American College of Rheumatology (ACR) is 0.75%.[4] RA affects approximately 0.3–1% of the adult population worldwide with a peak onset of the disease between 40 years and 70 years of age and the prevalence rises with age.[5] In 2019, 18 million people worldwide were suffering from rheumatoid arthritis[6] .It occurs more commonly in females than in males with a ratio of 3:1.2 About 70% of people living with rheumatoid arthritis are women, and 55% are older than 55 years4. Risk factors include female sex, genetic factors (HLA-DRB1, PADI4, PTPN22, CTLA4, IL2RA, STAT[4,] TRAF1, CCR6, IRF5), environmental factors such as exposure to tobacco smoke, air pollution, occupational dust (silica), asbestos, textile dust, P. Gingivalis, high sodium, red meat and iron consumption, obesity, low vitamin D intake and levels. [7,8]

DIAGNOSTIC CRITERIA[1,2,5]

The clinical diagnosis of RA is largely based on signs and symptoms of a chronic inflammatory arthritis, with laboratory and radiographic results. 2010 American College of Rheumatology criteria (ACR) is used for early diagnosis of RA.

2010 ACR/ EULAR DIAGNOSTIC CRITERIA FOR RA*

Criterion	Score
Joint affected	
1 Large joint	0
2-10 large joint	1
1-3 small joints	2
4-10 small joint	3
>10 joints including at least one small joint	5
Serology	
Negative RF and ACPA	0
Low positive RF and ACPA	2
High positive RF and ACPA	3
Duration of symptoms	
<6 weeks	0
>6 weeks	1
Acute phase reactants	

Normal CRP and ESR	0
Abnormal CRP or ESR	1
Patients with a score ≥ 6 are considered to have definite RA	

*European League Against Rheumatism/ 2010 American College of Rheumatology criteria (RF= Rheumatoid factor, ACPA= Anti-Citrullinated Peptide Antibody; CRP= C- Reactive protein; ESR = Erythrocyte Sedimentation Rate)

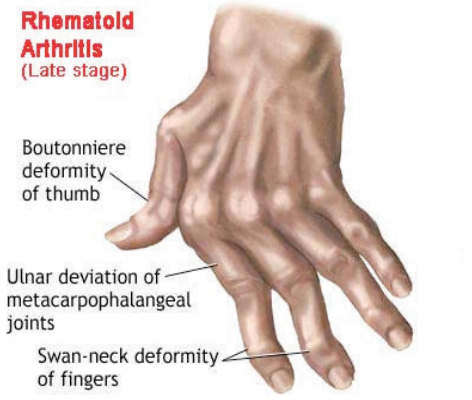
The presence of radiographic joint erosions or subcutaneous nodules may confirm the diagnosis in the later stages of the disease. This criterion does not take into account whether the patient has rheumatoid nodules or radiographic joint damage because these findings occur rarely in early RA.

CLINICAL EXAMINATION[1,2,5]

The typical presentation is with pain, swelling and morning stiffness affecting the small joints of hands, feet, and wrists. The most frequently involved joints are wrists, Metacarpophalangeal (MCP) and Proximal interphalangeal (PIP) joints. However, Distal interphalangeal (DIP) joint involvement may occur in RA, but it usually is a manifestation of co existent osteoarthritis [5]. Flexor tendon tenosynovitis is a frequent hallmark of RA and leads to decreased range of motion, reduced grip strength, and 'trigger' fingers.1

During the physical exam, the examiner should look for following Signs/ Symptoms:

- Joint pain
- Early morning joint stiffness lasting for more than 1 hour that eases with physical activity.
- Joint tenderness
- Swelling of joint
- Redness of joint
- Limited range of motion



The examiner should look for the deformities exhibited in RA, as follows:

- Ulnar drift of the hand,
- Boutonniere deformity,
- Swan neck deformity,
- Flexion deformity,
- Hallux valgus,
- Hammer toe etc.

RA may result in a variety of extra articular manifestations during its clinical course, even prior to the onset of arthritis. Some extra articular manifestations are as follows:[1,2,9]

EXTRA-ARTICULAR MANIFESTATIONS	
• **Systemic**	• Fever • Weight loss • Fatigue • Susceptibility to infection
• **Musculoskeletal**	• Muscle wasting • Tenosynovitis • Bursitis • Osteoporosis
• **Haematological**	• Anaemia • Thrombocytosis • Neutropenia • Eosinophilia • Lymphoma
• **Neurological**	• Cervical myelopathy • Peripheral neuropathy • Cervical cord compression
• **Occular**	• Keratoconjunctivitis sica • Episcleritis, • Scleritis
• **Lymphatic**	• Felty syndrome, • Splenomegaly
• **Cardiac**	• Pericarditis, • Myocarditis, • Endocarditis, • Ischemic heart disease
• **Pulmonary**	• Nodules, • Pleural effusion, • Bronchiolitis, • Interstitial lung disease
• **GI**	• Vasculitis
• **Endocrine**	• Hypoandrogenism
• **Skin**	• Rheumatoid nodules • Purpura • Pyoderma gangrenosum

SUPPORTIVE INVESTIGATIONS[1,2,10]

Essential:

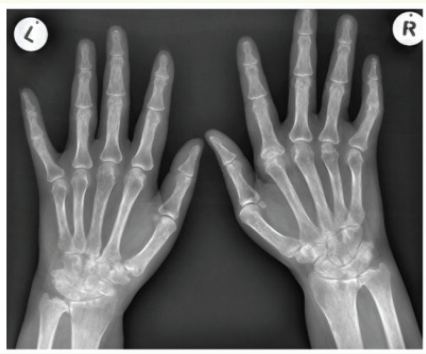
INVESTIGATION	FINDINGS
RF (Rheumatoid factor)	• Positive. • Nonspecific and may be positive in other conditions • RF is a relatively good biomarker for establishing the diagnosis of RA.
ACPA (Anti- Citrullinated Peptide Antibody)	• Positive. • It is highly sensitive and specific serological marker of RA
CRP (C- Reactive protein)	• Elevated
ESR (Erythrocyte Sedimentation Rate)	• Elevated

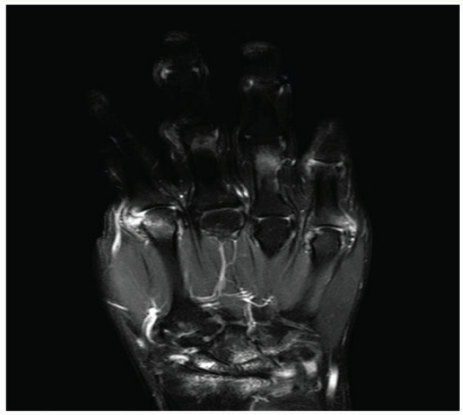
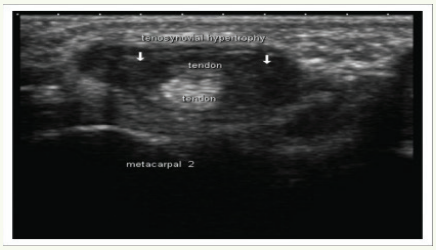
Advanced:

INVESTIGATION	FINDINGS
X-ray	• It shows reduced joint space, erosion of articular margins, subchondral cysts, juxta-articular rarefaction, soft tissue shadow at the level of the joint because of joint effusion or synovial hypertrophy, deformities of hand and fingers.
MRI (Magnetic Resonance Imaging) It may not be required in every case.	• Detect erosions earlier than an X-ray.
Ultrasound	• Ultrasound (US) is able to provide high resolution multiplanar images of soft tissue, cartilage, and bone profiles. • Ultrasound is not done for routine monitoring of disease activity in adults with RA.

Radiographic features of Rheumatoid Arthritis [11]

Fontal radiograph of both hands demonstrating bilateral symmetrical disease, marked periarticular osteopenia; widespread joint space narrowing; erosions of the radius, ulnar and carpal bones (worse on left hand); and subluxation of the second metacarpophalangeal joint on the right.



Proton density-weighted fat-saturated coronal magnetic resonance imaging showing multiple areas of enhancement of the bones corresponding to the regions of bone oedema and synovial enhancement in the second metacarpophalangeal joint.	
Transverse ultrasound image at the level of the second metacarpal demonstrating tenosynovitis of the extensor tendons of the hand.	

Siddha *Envagai Thervu* findings (Eight-Fold Clinical Assessment Methods):

Naadi - Vathapitham/ Pithavatham/ Kabavatham

Sparisam - Stiffness, and swelling in minor and major joints

Naa - Coated/ Normal

Niram - Normal

Mozhi - Low-pitched/Normal

Vizhi - Normal

Malam - Normal /Constipation

Neer

(i) Neerkuri - Straw or hay coloured urine

(ii) Neikuri - Oil may spread in the form of pearl /ring/ snake pattern indicating Kabam/ Pitham/ Vatham humours

DIFFERENTIAL DIAGNOSIS[1,2,12, 13]

Condition	Differential Features
Systemic Lupus Erythematosus	• Arthralgia, often associated with early morning stiffness. • A butterfly-shaped facial (malar)rash • Photosensitivity • Oral ulcers

Condition	Differential Features
Chronic Lyme disease	• Joint and muscle pain • Fever and headache, night sweats • Irregular red rash • Sensitivity to light
Osteoarthritis	• Insidious onset over months or years begins later in life i.e., over the age of 45, but more often over 60years. • It commonly affects large weight bearing joints such as hip and knee joint. • Symptoms tend to improve substantially after 30 minutes of moving around. • Joint pain is mainly related to movement and relieved by rest
Septic Arthritis	• Fever in the range of 101-102° F and sometimes higher is common. • Acute or subacute monoarthritis, especially knee and hip joints • The joint is usually swollen, hot and red, with pain at rest and on movement. • Decreased range of motion
Psoriatic Arthritis	• Inflammatory arthritis that characteristically occurring in individuals with psoriasis. • Inflammation of DIP (Distal interphalangeal) joint • Asymmetric oligoarthritis and Symmetric polyarthritis • Nail changes in the fingers or toes
Sjogren syndrome	• Joint pain, swelling and stiffness with onset between 40 and 50 years. • Dry mouth, dry eyes; Sandy or gritty feeling under the eyelids • Fatigue
Sarcoidosis	• Arthralgia • Erythema nodosum • Photophobia, blurred vision, dry eyes, and increased lachrymation
Fibromyalgia	• Fibromyalgia usually causes pain, stiffness, and tenderness in muscles and connective tissues throughout the body. • A person feels pain when the doctor applies pressure to the 18-24 tender joints associated with the condition. • Symptoms impact all four quadrants of the body. • Symptoms have lasted for at least 3 months without a break.
Viral arthritis	• Very acute, self-limiting pain and other symptoms associated with the particular virus involved.
Crystalline arthritis (gout and pseudogout)	• Patient over the age of 50 presenting with an inflammatory mono- or oligoarthritis. • Urate or calcium pyrophosphate crystals, in synovial fluids. • The hallmark of a crystalline arthritis is its self-limited nature.

Condition	Differential Features
Reactive arthritis	• Monoarthritis or oligoarthritis following a recent infection (e.g., urethritis, enteric). • Asymmetric pattern of joint involvement • Symptoms or signs of enthesopathy, Keratoderma blennorrhagica or circinate balanitis • Radiologic evidence of sacroiliitis and/or spondylitis • The presence of human leukocyte antigen (HLA) B27
Carpal tunnel syndrome	• Symptoms of hand swelling, burning, or numbness, typically at night or in the morning. • A positive Tinel or Phalen sign, thenar wasting, and/or demonstrate poor hand dexterity or weakness in the "pinch test."

Siddha Differential diagnosis

Condition	Differential Features
Uthiravatha Suronitham (Rheumatoid Arthritis)	• swelling in knee, ankle and dorsum of feet, and severe pain in minor joints; • patient undergoes distress and loses interest in oral intake
Peruviral Vatham (Gouty Arthritis)	• chronic inflammatory disease characterized by pain and swelling in the first metatarsophalangeal joint.
Narithalai Vatham (Synovitis with Knee joint effusion)	• Collection of serosanguineous fluid or blood in knee resembling head of fox, difficultly in movements of knee joints and in standing up from sitting position
*Iyya Keelvayu (*Infectious arthritis*)*	• evening rise of temperature with chills, joint pain, swelling of joints which does not resolves easily • stiffness, • emaciation • Continuous fever
Kalanjaga Vatham (Psoriatic arthritis)	• Diffuse pain in joints of upper and lower limbs, • inability to walk, • restriction of movements • Stiffness • Pallor • skin lesions with itching,
Azhal Keelvayu (Osteoarthritis)	• degeneration of joints due to the desiccation effect of Azhal and Vali • drying of lubrication factors leading to grating, clicking, and crackling of joints while walking

Diagnosis

It is based on the clinical sign and symptoms and laboratory investigations through the EULAR/ACR Criteria.

PRINCIPLES OF MANAGEMENT [1,2,5]

Red Flag Signs:

These signs should be assessed before initiating treatment for need for management through modern medicine.

- More visible swollen and tender joints
- Symmetrical pain
- More frequent flares
- Increased stiffness and difficulty bending joints
- Less range of motion
- Rheumatoid nodules
- Elevated inflammation markers
- Feeling more fatigued or weaker
- Having more trouble with daily activities
- Numbness/ tingling in fingers
- Extra-articular manifestations

The main goal is to control inflammation, relieve pain and reduce disability associated with Rheumatoid arthritis. Patients should be educated on their diagnosis, eating a well-balanced diet, achieving, and maintaining a healthy body weight and regular physical activity. In patients with established RA or those in whom remission can't be achieved, an alternative target of therapy would be low disease activity. If the patient is already under standard care, the physician may advice to continue the same along with add-on homoeopathy and can be assessed for the same in the follow ups for tapering or discontinue the treatment in consultation with conventional physician.

(A) Prevention management[16]

1. Patient education: Educating Patient about the disease condition and its prevention.
2. Rest
3. Exercise: Exercises can improve and maintain range of motion of the joints.
4. Physiotherapy: This consists of:
   (i) Splintage of the joints in proper position during the acute phase
   (ii) The application of heat or cold can relieve pain or stiffness.

(iii) Joint mobilization exercises to maintain joint to maintain joint functions.

(iv) Muscle building exercises to gain strength.

5. Occupational therapy: Role of occupational therapy is to help the patient cope with his occupational requirements in the most comfortable way, by modifying them.

6. **Nutrition and dietary therapy:** Weight loss may be recommended for overweight and obese people to reduce stress on inflamed joints. Obesity is a risk factor for more rapid progression of joint damage. This should be explained to obese patients and strategies must be offered on how to lose and maintain an appropriate weight.

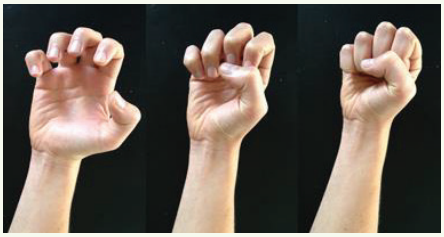
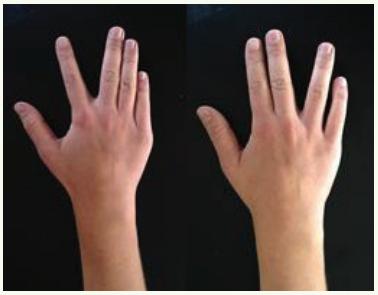
(B) Interventions

At Level 1- Solo Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited)

Clinical Diagnosis: The clinical diagnosis of RA is largely based on signs and symptoms of chronic inflammatory arthritis, with laboratory and radiographic results. Physicians must do a physical examination to check all the joints for swelling and to assess their movement. Also, look for any nodules on the skin. Some blood tests like ESR and CRP can be done to assess levels of inflammation in the body.

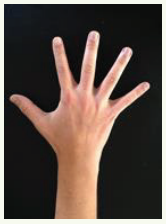
Recommended Diet and Lifestyle[17,18]

- ***Rest and exercise:*** Rest helps to decrease active joint inflammation, pain, and fatigue. In general, shorter rest breaks every now and then are more helpful than long times spent in bed. Exercise is important for maintaining healthy and strong muscles, preserving joint mobility, and maintaining flexibility. Exercise can help improve your sleep, decrease pain and maintain a healthy weight.

THE EXERCISE PROGRAM[19]	
A: Knout the hand in three stages Description: sitting with the arms resting on a table at elbow level with the palms turned upwards slowly bent each joint until a fist is formed. Strength all joint and repeated once more until full dosage has been achieved.	
B: "walk" the finger 2 to 5 against the first finger one by one with the palmar side of the hand lying on a table Description: Place the palm on a flat surface, levelled with the elbow. Move the thumb as far away from the hand as possible (abduction), then move the rest of the fingers one at a time towards the thumb. When all fingers are as fare to one side as possible, they are moved back one finger at the time starting with the little finger.	

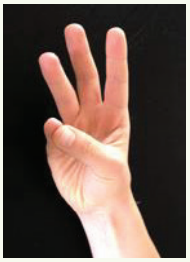
C: Spread the finger with the palmar side of the hand lying on a table

Description: Place the palm on a flat surface, levelled with the elbow. Spread all fingers out at the same time and draw then together again.



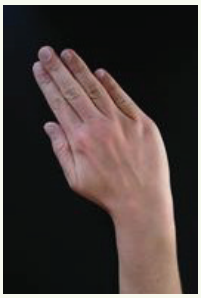
D: Put the tip of the first finger to the tip of the other 4 finger one by one

Description: Open your hand and lead thumb meet the little finger so to make a circle, repeat with the thumb and 4. finger, then thumb and middle finger and last thumb and the index finger. Remember to make a circle each time.



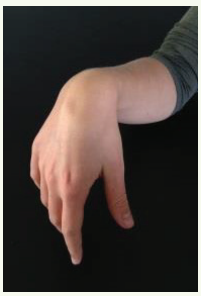
E: Bend the stretched hand from side to side

Description: place your palm and lower arm on a flat surface levelled with the elbow. Without moving the lower arm, bent the wrist to the left and then right, use approximately 2. Seconds to complete the movement.



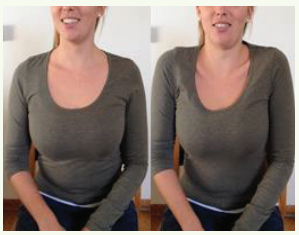
F: Make circles in the wrist joint

Description: The lower arm should be free of any support, now rotate the wrist around, change direction regularly.



G: Make circles with the shoulders

Description: Sit in a chair, with the back free of the chair and your hands placed in your lap. Look straight ahead and then lift your shoulders back, up and forward in a circle motion, after 8 repetitions go the other way around by starting with protraction of the shoulder than lift and then retraction.

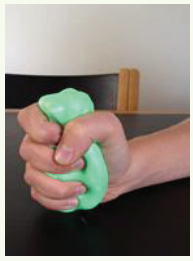


H: Put alternating from back of the head and the loin

Description: Sit in a chair with the back free of the chair, move one arm up and place the palm of your hand on the back of the head. The other arm is moved to the back and the back of the hand is placed at the loin. Simulations (If possible) shift the arms so the one that was placed on the loin now is at the back of the head and vice versa. Remember to keep the back straight. This exercise can also be done standing if this is deemed convenient.

I: Gross grip

Description: Form the theraputty as a ball and place it in the palm of your hand; now flex all fingers simultaneous and hold for 2-3 seconds. Then release the grip, reassemble the theraputty into a ball and repeat until desired sets and repetitions are reached.

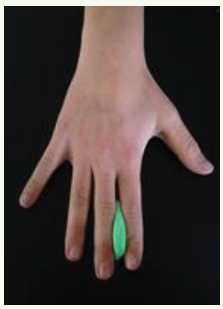


J: Finger pinch

Description: Place the theraputting on a table, pinch thumb, index and middle finger together in a flexion patter for 2-3 seconds. Then release and repeat once more until desired sets and repetitions are completed. Then perform with the other hand. Remember to flex all joints in the three fingers during the exercise.

K: Finger adduction

Description: Make a ball of the theraputting (the size of a table-tennis ball) and place it between the index and middle finger. Place your hand on a table and squeezed the middle and index finger together around the theraputting for 2 seconds. Release move the theraputting to the middle and fourth finger and repeat the squeezed. Finish with a squeezed of the theraputting between the little finger and fourth finger. Repeat until the desired number of sets and repetitions has been reached.



L: Wrist extension

Description: Place the forearm at a horizontal level and elbow into the waist. Wrap the rubber band around both hands and tighten until there is tension when the hands are approximately 30 centimetres apart. While holding this position the wrist is extended on wrist at a time until desired numbers of sets and repetitions have been reached.

M: Wrist flexions

Description: Find a heavy table with a smoot surface underneath. Sit in a chair with the hands placed under the table. Lift the hands up and try to lift the table, hold for 5 seconds. Remember to keep the back straight and elbow at the waist to decrease stress on the shoulder joint.

N: Biceps

Description: sit in a chair with the back free. Place both feet in the middle of the rubber band end wrap each end around the hands. Sit with a straight back and shorten the rubber band until there is tension when the hands are besides the knees. Keep the elbows fixed to the waist and flex in the elbow joint until the palm of the hand reached the shoulder. You can do it with one hand or both at the same time. This exercise can also be done standing if desired.

O: Triceps

Description: Sit in a chair, as far out on the edge as possible. Place your feet in the middle of the rubber band and wrap each end of the rubber band around the hands. Straighten the back and bend forward, hold the back straight until 450 flexion of the hip is reached (if possible); stay in this position during each set. Let your arm fall to the ground and tighten the rubber band until there is a small tension. Pull the elbow joint to the waist, then extend the elbow joint and move the arm forward again. This is repeated with one arm at a time until the desired sets and repetitions are reached. Remember to rest the back between sets. This exercise can be performed in a standing position by placing one foot in front of the other. The foot in front stands on the middle of the rubber band and each end is wrapped around the hands. Slightly bend the knee to get a stable stand and straighten your back and ben in the hip joint until a 450 flexion of the hip joint, keep this position during each set. Stretch the arms and tighten the rubber band. Move the elbow to the waist and then straighten the elbow joint to full extension.

- *Yoga* [20]: Various yoga practices are helpful for the management of patients with arthritis. These include *kriyas (kunjal and kapalbhati), simple joint movements, practices of sukshma vyayama, yogasanas (tadasana, katichakrasana, konasana, urdhwa hastottanasana, uttana padasana, vaksana, gomukhasana, marjari asana, ushtrasana, bhadrasana, bhujangasana, makarasana, shavasana), pranayama (nadishodana pranayama, suryabhedi pranayama, bhramari), yoga nidra practice and meditation.*
- ***Joint care:*** Using tools or devices that help with activities of daily living, using devices to help you get on and off chairs, toilet seats, and beds. Choosing activities that put less stress on your joints, such as limiting the use of the stairs or taking rest periods when walking longer distances and swimming can be adopted. Maintaining a healthy weight helps lower the stress on your joints.
- ***Stress management:*** Stress can make living with the disease more difficult. Stress also may affect the amount of pain one feels. Regular rest periods, Relaxation techniques such as deep breathing, meditating, or listening to quiet sounds or music, Movement exercise programs, such as yoga, swimming can help cope stress.
- ***Healthy diet:*** A healthy and nutritious diet that includes a balance of calories, protein, and calcium is important for maintaining overall health. A low-fat low-sodium Mediterranean diet rich in fruits, vegetables, whole grains, and nuts and poor in sugar-sweetened beverages, red and processed meat and trans fats, and the supplementation with omega-3 fatty acids, olive oil, non-essential amino acids, and probiotics [21] recommended for RA.

- *Physical therapy: can help regain and maintain overall strength and target specific joints.*
- *Occupational therapy: can help develop, recover, improve, as well as maintain the skills needed for daily living and working.*

Restricted Diet and Lifestyle

- Smoking reduction/cessation seems to have positive effects in terms of disease progression and related outcomes.
- Avoid activities causing a flare-up, find an alternative for them.
- High-impact activities, such as running or contact sports like rugby and football, are more likely to cause problems, they must be avoided.
- Avoid activities that cause your joints to become warm and swollen, or it causes severe pain.
- Overweight: losing weight is suggested as it puts extra strain on joints.

Follow Up (every 15 days or earlier as per the need)

Reviews should include: [22, 23]

- Monitoring the person's symptoms and impact of the disease on their daily activities and quality of life.
- Improving understanding of the patient about the condition and its management through verbal and written information and counter any misconceptions they may have.
- Explaining patients', the importance of monitoring their condition, and seeking rapid access to specialist care if disease worsens or they have a flare.
- Participation in existing educational activities, including self-management programmes.
- Regularly measure C reactive protein and key components of disease activity (using a composite score such as the DAS28—a disease activity score that includes assessment of 28 joints) to inform decision making about increasing treatment to control disease or cautiously decreasing treatment when disease is controlled. If the disease is of recent onset and active, measure these variables monthly until control reaches a level previously agreed with the individual.
- Assess disease activity, damage, and overall impact and to measure functional ability.
- Check for comorbidities such as hypertension, ischemic heart disease, osteoporosis, and depression.
- Assess symptoms that suggest complications, such as vasculitis and disease of the cervical spine, lung, or eyes.
- Assess the need for referral for surgery.

Referral Criteria[26]

- Non responsiveness to treatment
- Evidence of an increase in severity/complications
- Substantial impact on their quality of life and activities of daily living
- Diagnostic uncertainty
- Uncontrolled co-morbidities, such as cardiovascular disease, lung disease, gastrointestinal disease, osteoporosis or osteopenia, malignancy.

At Level 1

(Choice of medicines, doses, and duration may be altered according to the condition of the patients and severity of the disease)

Siddha Line of Treatment25, 26,27,28,29,30,31

Day 1- Ennaimuzhukku (Oil bath - Oleation)

Oleation is the practice of massaging the head with medicated oils. It is recommended to give strength to five sense organs (Panchaendrinyangal). Patients, elderly persons, children, and those who are taking oil bath should bath only in lukewarm water. Futher depending upon the season, country and state of body health, water soaked with Mangifera indica, Emblica officinalis leaves or water mixed with aromatic powder or clear water may be used for bathing according to the circumstances.

Vitiated Azhal should be corrected by an Oil bath with medicated oils that mitigate the Azhal humor.

- Chukku Thailam - Quantity sufficient (For Ext use only)
- Seeraga Thailam - Quantity sufficient (For Ext use only)

(Any one oil may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2-4- Kazhichal Maruthuvam (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

- Merugulli Thailam - 10 ml with lukewarm water at early morning in empty stomach.
- Kazharchi Thailam - 8-15ml with lukewarm water at early morning in empty stomach.

(Any one Medicine may be used)

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 5- Rest

From Day 6 onwards- Internal Medicines:

Kudineer: (for 24 - 48 days – course may be repeated as per the discretion of the physician)

- Vathasura kudineer - 30 - 60 ml, OD, before food
- Araththai kudineer - 30 - 60 ml, OD, before food.

(Any one Kudineer may be used)

Churanam: (for 48 days – course may be repeated as per the discretion of the physician)

- Thirikadugu Churanam - 1-2 gm with honey, BID, after food.
- Inji Churanam - 1-2 gm with honey, BID, after food
- Amukkara Churanam - 1-2 gm with honey, BID, after food

- Elathy Churanam - 1-2 gm with lukewarm water, BID, after food
- Parangipattai Churanam - 1-2 gm with honey, BID, after food

(Either one or two of the Churanams may be used)

Parpam: (for 48 days – course may be repeated as per the discretion of the physician)

- Sangu Parpam - 100 - 300 mg with ghee, BID, after food
- Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food

Chenduram: (for 5 - 7 days – course may be repeated as per the discretion of the physician)

- Arumuga Chenduram - 100 - 200 mg with honey, BID, after food
- Aya Chenduram - 100 - 200 mg with honey, BID, after food

(Either one Parpam and one Chenduram may be used)

Mathirai: (for 24 - 48 days – course may be repeated as per the discretion of the physician)

- Vishnu chakkaram - 1 - 2 nos with honey/Ginger juice/ Thirukadugu Churanam BID, after food
- Vatharatchasan - 1 - 2 nos with honey, BID, after food
- SoolaiKudoram -1 - 2 nos with honey, BID, after food

(Any one Mathirai may be used especially if no Chenduram is administered)

External Medicines:

Poochu (Liquid / Oil Poultice): (for 48 days – course may be repeated as per the discretion of the physician)

- Karpoorathi Thailam - Quantity sufficient (For Ext. Use only)
- Kunthiriga Thailam - Quantity sufficient (For Ext. Use only)
- Arkkathi Thailam - Quantity sufficient (For Ext. Use only)

(Any one or both oils may be used)

Patru (Semi Solid Poultice): (for 48 days – course may be repeated as per the discretion of the physician)

- Moosambara patru (Kariabolam) (Aloe littoralis)
- Aavaarai patru (Cassia auriculata)
- Ulunthu patru (Vigna mungo)
- Amukkara kilangu podi patru (Withania somnifera)
- Kavikkal patru (Red ochre)

(Any one or all of the combinations of Pattru may be used as per availability)

Level- I

Model prescription

Day 1- Chukku Thailam- Quantity sufficient (For Ext. Use only) –Ennai muzhukku (Oleation).

Day 2 - Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4 -

Inji Churanam - 3-1 gm with honey, BID, after food, for 48 - 24 days.

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Arumuga Chenduram - 100 - 200 mg with honey, BID, after food, for 24-48 days.

Kunthiriga Thailam - Quantity sufficient (Ext), for 24 - 48 days.

Amukkara kilangu podi pattru - Quantity sufficient (Ext), for 5 - 7 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

At Level 2 (CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray**)**

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh case must be evaluated thoroughly for any complications.

Investigations: The diagnosis would be primarily clinical. However, some investigations may be necessary to confirm the diagnosis and investigate complications or exclude other differential diagnoses as follows:

- Haemogram
- X-ray
- Magnetic resonance imaging
- RA Factor
- ACPA (Anti- Citrullinated Peptide Antibody)
- C-reactive protein
- Synovial fluid examination
- Serum uric acid
- Ultrasound

Management: Same as level 1.

Other procedures:

Physiotherapy: Adults with RA should have access to specialist physiotherapy, with

- periodic review to improve general fitness and encourage regular exercise, learn exercises for enhancing joint flexibility, muscle strength and managing other functional impairments, learn about the short-term pain relief provided by methods such as transcutaneous electrical nerve stimulators (TENS) and wax baths.
- **Occupational therapy:** Adults with RA should have access to specialist occupational therapy to overcome difficulties with any of their everyday activities, or problems with hand function.
- **Hand exercise programmes**: Consider a tailored strengthening and stretching hand exercise programme for adults with RA with pain and dysfunction of the hands or wrists.
- **Podiatry**: All adults with RA and foot problems should have access to a podiatrist for assessment and periodic review of their foot health needs. Functional insoles and therapeutic footwear can be used if indicated.
- **Psychological interventions:** Offer psychological interventions (for example, relaxation, stress management and cognitive coping skills [such as managing negative thinking]) to help adults with RA adjust to living with their condition.

Recommended Diet and Lifestyle: Same as level 1

Restricted Diet and Lifestyle: Same as level 1

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 1, plus
- Failure of acute exacerbation to respond to initial medical management.
- suspected persistent synovitis of undetermined cause.
- If any symptoms or signs suggesting cervical myelopathy develop (for example, paranesthesia, weakness, unsteadiness, or extensor plantar)
- Advanced stages of disease like deformities etc.

Siddha At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1- Ennai muzhukku (Oil bath - Oleation)

- Arakku Thailam- Quantity sufficient (For Ext. Use only)
- Chukku Thailam- Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Vellai Ennai - 10 - 15 ml with lukewarm water at early morning in empty stomach.
- Vathanaasa Thailam - 10-15 ml with lukewarm water at early morning in empty stomach.

(Any one Medicine may be used)

Day 3- Rest

From Day 4 - Internal Medicines:

Kudineer:

- Nilavembu kudineer - 30 - 60 ml, BID, before food for 24 days
- Kurunthotti kudineer - 30 - 60 ml, BID, before food for 24 days
- Valiangathi Kudineer - 30 – 60 ml BID before food for 24 days

(Any one Kudineer may be administered)

Churanam:

- Inji Churanam - 1-3 gm with honey, BID, after food for 48 days
- Sagalanoi Churanam - 1-3 gm with honey, BID, after food for 48 days
- Panchadeepakini Churanam - 1-3 gm with honey, BID, after food for 48 days
- Seenthil Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days
- Drakshathi Churanam - 1-3 gm with honey, BID, after food for 48 days.

(Either one or two Churanam(s) may be administered)

Parpam:

- Silasathu Parpam - 100 - 300 mg with ghee, BID, after food for 48 days.
- Palagarai Parpam - 100 - 300 mg with ghee, BID, after food for 48 days.
- Muthuchippi Parpam - 100 - 400 mg with ghee, BID, after food for 48 days.

Chenduram:

- Ayakandha Chenduram - 100 - 200 mg with honey, BID, after food for 48 days

- Ayaveera Chenduram -100 - 200 mg with honey, BID, after food for 48 days
- Linga Chenduram -100 - 200 mg with honey, BID, after food for 48 days

(Any one Parpam and one Chenduram may be administered)

Mathirai:

- Vasantha Kusumagaram - 1 - 2 nos with honey, BID, after food for 24 days
- Soolai Kudoram - 1 - 2 nos with honey, BID, after food for 24 days.
- Vishnu chakram - 1 - 2 nos with honey, BID, after food for 24 days.
- Linga boopathi - 1 - 2 nos with honey, BID, after food for 24 days

(Any one Mathirai may be used especially if no Chenduram is administered)

Ilagam :

- Panchadeepaki Ilagam - 3-5g with warm milk,BID, after food for 48 days.
- Thetrankottai Ilagam - 3-5g with warm milk,BID, after food for 48 days
- Amukkara Ilagam - 3-5g with warm milk,BID, after food for 48 days
- Vallathagi Ilagam - 3-5g with warm milk,BID, after food for 48 days
- Shanmuga Ilagam - 3-5g with warm milk BID after food for 48 days

(Any one ilagam may be used)

Mezhugu:

- Rasagandhi Mezhugu - 250 - 500 mg with palm jaggery, BID after food for 3 - 5 days
- Idivallathy Mezhugu - 250 - 500 mg with palm jaggery, BID after food 3 - 5 days Nandhi mai - 100 – 500 mg with Palm jaggery BID after food 3 - 5 days

(Any one mezhugu may be administered either before or after the course of administration of Chenduram)

External Medicines:

Poochu (Liquid / Oil Poultice):

- Ulunthu Thailam - Quantity sufficient
- Mezhugu Thailam - Quantity sufficient
- Vadhakesari Thailam -Quantity sufficient
- Kayathirumeni Thailam- Quantity sufficient

(Any one or two oils may be used)

Kattu (Compress / bandage)

- Fry the dried stems of Pirandai *(Cissus quandrangularis)* with the juice of Erukku *(Calotropis gigantia)*, crush well and apply as a compress in small joint swelling.

Level- II

Model prescription

Day 1- Arakku Thailam- Quantity sufficient (For Ext. Use only) –Ennai muzhukku (Oleation).

Day 2- Vathanaasa Thailam - 10-15ml with lukewarm water at early morning in empty stomach (Purgation)

Day 3- Rest

From Day 4 onwards-

Sagalanoi Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Muthuchippi Parpam - 100 - 400 mg with ghee, BID, after food, for 24 - 48 days.

Soolai Kudoram - 1 - 2 nos with honey, BID, after food, for 24 - 48 days

Kurunthotti Kudineer - 30 - 60 ml, OD, before food, for 24 - 48 days

Thetrankottai Ilagam - 3 - 5 gm with warm milk, BID, after food, for 24- 48days

Kayathirumeni Thailam- Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms or develop severe effusion, contractures or deformities.
- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus and hypertension etc .

At Level 3 (Ayush hospitals attached with teaching institution, District Level/Integrated/ State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities), multiple departments/facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counselling, and physiotherapy unit.

Clinical Diagnosis: Same as levels 1& 2.

Confirm diagnosis and severity with the help of investigations like magnetic resonance imaging, Ultrasound, joint aspiration, and synovial fluid examination.

Recommended Diet and Lifestyle: Same as levels 1& 2

Restricted Diet and Lifestyle: Same as levels 1& 2

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 2, plus Other modalities can be considered depending on the case and to rehabilitate properly.
- **At Level 3**

In addition to level 1& 2 management the following will be exclusively used in level 3

Internal Medicines

Day 1- Ennai muzhukku (Oil bath - Oleation)

- Arakku Thailam - Quantity sufficient (For Ext. Use only)
- Santhanathi Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam(Purgation)

- Siddhathi Ennai - 3 - 5 drops with Sombu kudineer at early morning in empty stomach.
- Kowsikar kuzhambu - 100 - 200 mg with lukewarm water at early morning in empty stomach.

(Any one Medicine may be used)

Churanam:

- Karisalai Churanam - 1-3 gm with honey, BID, after food for 48 days
- Keezhanelli Churanam - 1-3 gm with honey, BID, after food for 48 days
- Ilavangathi Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days
- Ashta Churanam - 1-3 gm with honey, BID, after food for 48 days
- Nilavaagai Churanam -1-3 gm with honey, BID, after food for 48 days

(Either one or two of the Churanam(s) may be administered)

Parpam:

- Muthu Parpam - 100 - 300 mg with ghee, BID, after food for 48 days
- Pavala Parpam - 100 - 300 mg with ghee, BID, after food for 48 days
- Naga Parpam - 100 - 300 mg with ghee, BID, after food for 48 days

Chenduram:

- Poorna chandhrothaya Chenduram- 100 - 200 mg with honey, BID, after food for 3 days
- Chanda maarutha Chenduram - 100 - 200 mg with honey, BID, after food for 5 days
- Kaalamega narayana Chenduram - 100 - 200 mg with honey, BID, after food for 3 days
- Thamira (sembu) Chenduram - 30 - 60 mg with honey, BID, after food for 5 days
- Thaalaga Chenduram -100 - 200 mg with honey, BID, after food for 7 days

(Any one Parpam and one Chenduram may be administered)

Mathirai :

- Pachai karpoora Mathirai - 1-2 tab with honey/lukewarm water, BID, after food for 14 days.
- Bramanantha bairavam -1-2 tab with honey/lukewarm water, BID, after food for 14 days.
- Maha Vasantha kusumagaram-1-2 tab with honey/lukewarm water, BID, after food for 14 days.
- Karuppu Vishnu chakram -1 - 2 tab with honey, BID, after food for 14 days.

(Any one Mathirai may be used especially if no Chenduram is administered)

Mezhugu:

- Kanagalinga Mezhugu - 65 - 100 mg with palm jaggery, BID after food for 7 days.
- Panchasootha Mezhugu- 65 - 100 mg with Kodiveliver Pattai kudineer, BID after food for 3 - 5 days.
- Nava uppu Mezhugu - 65 mg with palm jaggery, OD after food for 3 days.

(Any one mezhugu may be administered either before or after the course of administration of Chenduram)

Nei:

- Serangkottai Nei - 10 -15 drops with warm milk, BID, after food for 48 days.

Ennai:

- Vatha Ennai - Kaasedai (800 mg, approximately equal to 0.8ml) both Internal and External for 48 days.
- Kaayarajanga Thailam - 10 -15 ml with lukewarm water ,BID, after food for 5 days.

(Any one Ennai may be used)

External Medicines:

Poochu (Liquid / Oil Poultice):

- Mayana Thailam - Quantity sufficient
- Kayathirumeni Thailam - Quantity sufficient
- Mahavidamuti Thailam - Quantity sufficient
- Sadamanjil Thailam - Quantity sufficient

(Any one or two oils may be used)

Level- III

Model prescription

Day 1-Santhanathi Thailam - Quantity sufficient (For Ext. Use only)-Ennai muzhukku (Oleation).

Day 2- Siddhathi Ennai- 3 - 5 drops with Sombu kudineer at early morning in empty stomach (Purgation)

Day 3- Rest

From Day 4 onwards-

Nilavaagai Churanam -1-3 gm with honey, BID, after food for 24 - 48 days.

Pavala Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Chandamarutha Chenduram - 50 - 100 mg with honey, BID for 5 days.

Kanagalinga Mezhugu - 65 - 100 mg with palm jaggery, BID after food for 7 days.

Kayarajangam Ennai - 10 -15 ml with lukewarm water ,BID,afterfood,for 7- 14 days.

Vadhakesari Thailam - Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management .

8. Prevention Management

Table1: Recommended diet and Lifestyle (Pathiyam)

1.	**Salt**	1. Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1. Kodam puli *(Garcinia cambogia*)
3.	**Oil**	1. Nallennai *(Gingelly oil)*
4.	**Dairy products**	1. Cow & Goat (Milk & Ghee) 2. Butter milk
5.	**Sugar**	1. Panai vellam (Palm jaggery) 2. Naatu sarkarai 3. Karupatti
6.	**Spices**	1. Vendhayam *(Trigonella foenum-graecum-graecum)* 2. Lavanga pattai *(Cinnamomum verum)* 3. Milagu *(Pepper nigrum)* 4. Elam *(Elettaria cardamom)* 5. Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1. Ulunthu *(Vigno mungo)*
8.	**Millets**	1. Ragi *(Eleusine coracana)* 2. Varagu *(Paspalum scrobiculatum)* 3. Thinai *(Setaria italica)* 4. Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varieties)**	• Mani samba • Seeraga samba • Kai kuthal arisi • Puzhungal arisi
10.	**Greens**	1. Manali keerai *(Gisekia pharnaceoides)* 2. Vallai keerai *(Convolvulus repens)* 3. Kothamalli keerai *(Coriandrum sativum)* 4. Musumusukai *(Mukia maderaspatana)* 5. Ponnanganni *(Alternanthera sessilis)* 6. Mookirattai *(Boerhavia diffusa)* 7. Sirukeerai *(Amaranthus tricolour)*

11.	**Vegetables**	1. Kathiri pinju *(Solanum melongena)* 2. Avarai pinju *(Lablab purpureus)* 3. Pudalai *(Trichosanthes cucumerina)* 4. Vellari *(Cucumis sativus)* 5. Kovai *(Coccinia grandis)* 6. Murungai *(Moringa oleifera)* 7. Aththi *(Ficus racemosa)* 8. Surai *(Lagenaria siceraria)* 9. Sundai *(Solanum torvum)* 10. Pirandai *(Cissus quadrangularis)* 11. Ladies finger (*Abelmoschus esculentus)* 12. White pumpkin (*Cucurbita pepo)* 13. Lemon (*Citrus limon*) 14. Greens (Except Sesbania leaves) 15. Plantain flower (*Musa paradisiaca)* 16. Ginger (*Zingiber officinale*) 17. Cucumber *(Cucumis sativus)*
12.	**Tubers**	1. Mullangi *(Rhaphanus sativus)* 2. Karunai *(Amorphophallus paeoniifolius)* 3. Koogai (*Maranta arundinacea)* 4. Seppan kizhangu *(Colacassia esculenta)*
13.	**Non -Veg**	1. Velladu(*Goat*) 2. Kaadai (*quail)* 3. Kaanan kozhi (*White breasted waterhen)*
14.	**Fruits**	1. Figs *(Ficus racemosa)* 2. Jackfruit (*Artocarpus heterophyllus)* 3. Pomegranate *(Punica granatum)* 4. Oranges *(Citrus sinensis)* 5. Sunberry *(Solanum retroflexum)* 6. Banana *(Musa paradisiaca)* 7. Indian gooseberry *(Phyllanthus emblica)* 8. Dates *(Phoenix dactylifera)* 9. Grapes *(Vitis vinifera)* 10. Bael fruit *(Aegle marmelos)*

15.	**Pulses/cereals/ spices**	1. Javvarisi kanji (Tapioca pearls - Manihot esculenta crantz) 2. Red gram *(Cajanus cajan)* 3. Sprouted green gram *(Vigna radiata)* 4. Cashew nuts (*Anacardium occidentale)* 5. Bengal gram *(Cicer arietinum)* 6. Turmeric *(Curcuma longa)* 7. Perungayam *(Ferula asafoetida)* 8. Malli *(Coriandrum sativum)* 9. Cloves (*Syzygium aromaticum)* 10. Ajwain seeds *(Trachyspermum ammi)* 11. Ulunthu *(Vigna mungo)*

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
Karungali Acacia catechu *(Root)*	Ulunthu kali *(Vigna mungo)*	Irumurai vaditha kanji	Varagu satham *(Paspalum scrobiculatum)*	Naarathai *(Citrus medica)*	Sundai vatral *(Solanum xanthocarpum)*	Murungai keerai soup *(Moringa oleifera)*
		Arisi vaditha sudu kanji	Thinai satham *(Setaria italica)*	Kalakkai *(Carissa carandas)*	Thoothuvalai vatral *(Solanum trilobatum)*	Mudavaatu kaal (*Drynaria quercifolia)*
		Koogai mavu kanji *(Maranta arundinacea)*	Saamai satham *(Panicum sumatrense)*		Nelli vatral *(Phyllanthus emblica)*	
		Venthaya kanji *(Trigonella foenum-graecum)*			Aathondai vatral *(Capparis zeylanica)*	
		Raagi kanji *(Eleusine coracana)*			Manathakkali *(Solanum torvum)*	
		Chukku mudi kanji *(Zingiber officinale)*			Pirandai vatral *(Cissus quadrangularis)*	

Table 3 Restricted diet and lifestyle

- Vatham-inducing foods like root tubers except karunai kizhangu
- Maa porutkal (Carbohydrates-rich diet)
- Vaazhai (tender fruit of *Musa paradisiaca*)
- Urulai Kizhangu (*Solanum tuberosum*)
- Senai Kizhangu (*Amorphophallus paeoniifolius*)
- Vaer kadalai (*Arachis hypogea*)
- Pattani (*Pisum sativum*)
- Mochai (*Vicia faba*)
- Sour and astringent foods
- Sea foods except small prawns
- Smoking, tobacco chewing and alcohol
- Prolonged standing and sitting

b. Yoga

Siddhar Yoga Maruthuvam:

- Tadasanam
- Halasanam
- Puyangasanam
- Dhanurasanam
- Patchimothasanam
- Egapaadhasanam
- Savasanam

Referral Criteria

- Joint deformities
- Carpal tunnel syndrome
- Pleurisy
- Pulmonary fibrosis
- Pericarditis
- Sjogren's syndrome
- Vasculitis

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3 CERVICAL SPONDYLOSIS

3
CERVICAL SPONDYLOSIS

SAGANAVATHAM / CERVICAL SPONDYLOSIS

Saganavatham

NAMASTE Code : Z27

WHO – ISMT Code : ISMT - 4.24.138

Cervical Spondylosis

ICD 11 Code: FA80.0 – FA80.3

ICD 11 TM2 : SP45

CASE DEFINITION

[Cervical spondylosis - https://icd.who.int/browse11/l-m/en and Saganavatham http://namstp.ayush.gov.in/#/index]

Cervical spondylosis is a common progressive degenerative disorder of the human spine often caused by natural ageing. It is defined as "*vertebral osteophytosis secondary to degenerative disc disease*" 1. Postural deviations, restricted movement in the affected joints, muscle issues, and neck pain characterize cervical spondylosis (CS)2

Saganavatham is a type of Vatham disease characterized by restricted movements with severe pain in the lower neck radiating to the upper limbs, heaviness of the body, giddiness and burning sensation of the eyes3.

INTRODUCTION (*incidence/ prevalence, morbidity/mortality)*

- Saganavatham is one of the 80 types of Vatha diseases with predominant involvement of the cervical spine 4caused due to the vitiation of Vali humor. The symptoms of Saganavatham are consistently drawn parallel with that of cervical spondylopathy or spondylo-radiculopathy. According to the text of Yugi vaithiya chinthamani 800, the symptoms include pain arising from the nape of the neck upto the lumbar region, aching pain in upper extremities, heaviness of the body, dizziness, burning sensation in eyes, retention of urine, constipation, stinging or lancinating pain in the body. The altered food habits cause indigestion which is ascribed to the genesis of this disease .

- Cervical spondylosis (CS) typically manifests after an individual reaches their fifth decade of life5,6. Around 80-90% of individuals experience disc degeneration by the time they reach the age of 50 [7,8,9]
- Symptoms tend to occur more frequently in men than in women, with the highest incidence between 40 and 60[10,11,12,13].
- In the adult population, the lifetime prevalence of CS is 48.5%[14.]
- In India, peak prevalence occurred in the 40-49 age group, with a male predominance15.

DIAGNOSTIC CRITERIA

CS is typically diagnosed based on clinical assessment alone. While it mainly causes neck pain, it can radiate to various areas and worsen with neck movements. Neurological changes should be checked in the limbs, but they usually only appear when spondylosis is complicated by myelopathy or radiculopathy. Other causes like disc protrusion, thoracic outlet issues, brachial plexus disorders, malignancies, or primary neurological diseases should also be considered when assessing these symptoms. Postural deviations, restricted movement in the affected joints, muscle issues, and neck pain characterize CS.[16]

The changes in CS are primarily a result of the natural degeneration accompanying the ageing process.[17] Other risk factors include continual occupational trauma[18] a family history of neck pain, spondylosis, and congenital bone irregularities like blocked vertebrae and malformed laminae that stress nearby discs, smoking, anxiety, and depression[19]. The development of CS [20,21,22] follows a degenerative process that leads to biomechanical alterations within the cervical spine, resulting in the secondary compression of neural and vascular structures. CS primarily results from reduced disk height, which narrows the spinal canal due to herniated disks. These degenerative changes collectively lead to a loss of cervical lordosis and reduced mobility, along with a decrease in the diameter of the spinal canal.

CLINICAL EXAMINATION

CS is often diagnosed on clinical signs and symptoms alone.[23] Neck pain radiating to the arm and fingers (based on affected dermatomes), accompanied by arm/hand tingling, numbness, muscle reflex reduction, sensory issues, and muscle weakness in corresponding dermatomes/myotomes.[19]

Signs:[20,24, 25]

During the examination, the neck might appear slightly bent forward. The posterior neck muscles may be tender but not in spasm. There are often advanced degenerative changes with audible crepitation during movement.

- Poorly localised tenderness.
- Limited range of motion.
- Minor neurological changes (unless complicated by myelopathy or radiculopathy)

Symptoms:[28]

- Cervical pain aggravated by movement
- Referred pain (occiput, between the shoulder blades, upper limbs)
- Retro-orbital or temporal pain
- Cervical stiffness
- Vague numbness, tingling or weakness in upper limbs.
- Dizziness or vertigo
- Poor balance
- Rarely, syncope triggers migraine

Complications:[26]

- Myelopathy: Myelopathy results in hand clumsiness, gait issues, or both due to sensory ataxia or spastic paraparesis in the lower limbs, with later bladder problems.
- Radiculopathy: Nerve root compression, known as radiculopathy in CS, often happens at C5 and C7 levels, although higher levels can also be affected. Neurological symptoms are localized in the upper limb, with sensory issues like shooting pains, numbness, and heightened sensitivity being more prevalent than weakness. Reflexes typically decrease at the corresponding levels: biceps (C5/6), supinator (C5/6), or triceps (C7).Top of Form

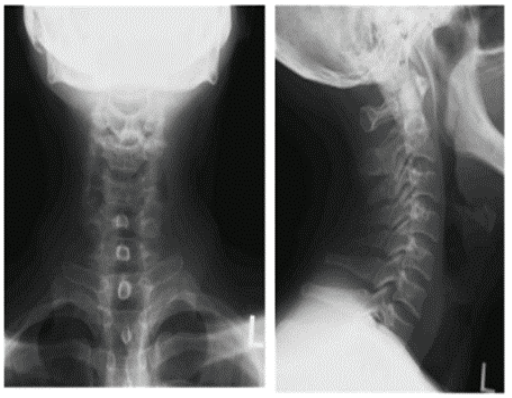
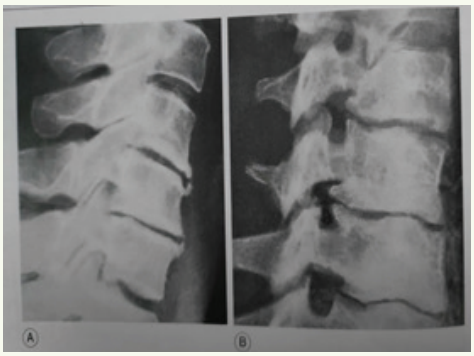
SUPPORTIVE INVESTIGATIONS:[27]

Essential Investigations:

Investigation	Findings
Plain or Digital x-ray CS (AP, Lat. Oblique)	• Narrowing the disc height • Presence of osteophytes arising from the disk margins • osteoarthritic changes in the posterior zygapophyseal joints. etc. • For patients with nontraumatic neck pain and no red flags, initial imaging typically starts with cervical spine radiographs. Recommended by ACR[31]
Blood test: Full blood count, ESR, CRP[25]	To exclude other pathologies or complications

Advanced Investigations:

Investigation	Findings
Magnetic resonance imaging (MRI)of the Cervical Spine	It's the preferred choice to rule out for myelopathy and radiculopathy

Normal Cervical Spine[26]	Cervical spondylosis
	 (Note the lateral view (A) of the narrowed intervertebral space, with marginal osteophyte formation, at C5-C6 and C6-C7. The oblique view (B) shows severe encroachment of osteophytes upon an intervertebral foramen)

Siddha *Envagai Thervu* findings (Eight-Fold Clinical Assessment Methods):

Naadi		–	Vathapitham / Kabavatham / Pithakabam
Sparisam		–	Warmth on the affected site / Tenderness over cervical spine
Naa		–	Coated
Niram		–	Normal
Mozhi		–	Low pitched / Normal
Vizhi		–	Normal
Malam		–	Normal / Constipation
Neer			
(i)	Neerkuri	–	Yellowish in colour, tamarind odour
(ii)	Neikkuri	–	Oil may spreads in the form of ring/ pearl

DIFFERENTIAL DIAGNOSIS

Clinical Syndromes Resembling CS [29]:

	Radiculopathy (Type I Syndrome)	Myelopathy (Type II Syndrome)	Axial Joint Pain (Type II Syndrome)
Acute	• Lateral Disc herniation • Brachial plexitis	• Central disc herniation • Pathologic fracture • Guillain-Barre Syndrome	• Cervical strain or sprain • Painful amphiarthrodial joint (disc) • Painful Diarthrodial joint (Facet joint)

	Radiculopathy (Type I Syndrome)	Myelopathy (Type II Syndrome)	Axial Joint Pain (Type II Syndrome)
Chronic	• Lateral disc herniation • Focal Facet hypertrophy **Shoulder pathology:** • Adhesive capsulitis • Recurrent anterior Subluxation and impingement syndrome **Entrapment neuropathy:** • Carpal tunnel syndrome • Thoracic outlet syndrome	• Central disc herniation • Cervical cane stenosis: Congenital, Metabolic, and Acquired • Spinal instability • Multiple sclerosis • Normal pressure hydrocephalus • Vitamin B_{12} deficiency • Neoplasm: Vertebral metastasis and • Infection: Discitis/ Osteomyelitis, Epidural abscess, Neurosyphilis and HTLV-1, • Syringomyelia • Arteriovenous malformation • Myopathies	• Fibromyalgia, • Nonorganic, Malingering and /or symptom magnification • Hypochondriasis and /or somatoform disorders, • Failed surgical fusion. • Referred visceral Pain: ➢ Angina pectoris ➢ Pancoast Tumour ➢ Sub-diaphragamatic pathologies.

- Other non-specific neck pain lesions-acute neck strain, postural neck ache or whiplash
- Fibromyalgia and psychogenic neck pain.
- Mechanical lesions-disc prolapsed or diffused idiopathic skeletal hyperostosis.
- Inflammatory disease-Rheumatoid arthritis, Ankylosing spondylosis, or Polymyalgia rheumatica.
- Metabolic diseases- Paget's disease, osteoporosis, gout, or pseudo gout. Infections-osteomyelitis or tuberculosis.
- Malignancy-primary tumours, secondary deposits, or myeloma.

PRINCIPLES OF MANAGEMENT

Red Flag Signs of Cervical Spondylosis:

These signs should be assessed before initiating treatment for need for management through modern medicine

- Malignancy, infection, or inflammation
    - Fever, night sweats
    - Unexpected weight loss
    - History of inflammatory arthritis, malignancy, infection, tuberculosis, HIV infection, drug dependency, or immunosuppression

- Excruciating pain
- Intractable night pain
- Cervical lymphadenopathy
- Exquisite tenderness over a vertebral body

- Myelopathy
  - Gait disturbance or clumsy hands, or both
  - Objective neurological deficit—upper motor neurone signs in the legs and lower motor neurone signs in the arms
  - Sudden onset in a young patient suggests disc prolapse
- Other
  - History of severe osteoporosis
  - History of neck surgery
  - Drop attacks, especially when moving the neck, suggest vascular disease
  - Intractable or increasing pain

Patients need education about their CS diagnosis, as there are common misconceptions and concerns about potential disability. It's important to emphasize the natural course of CS and discuss therapeutic options, which include lifestyle changes like exercise and maintaining good posture when sitting and standing. These changes should be tailored to the individual to minimize disruptions in daily activities.

(A)**Prevention management**[30]

Prevention of CS is not possible, but lifestyle modification may help to reduce the risk of disease; these are as follows:

- Avoid excessive mental, emotional, and physical stress. Stress causes headache and worsens neck pain and stiffness.
- Keep the spine straight while sitting or standing.
- Avoid forward bending exercise and jogging, running, jerking vigorously and high pillows.
- Intake of a balanced diet and to be physically active.
- Avoid carrying heavy bags and lifting heavy weights.
- Avoid trauma to the neck.

Lifestyle modifications, particularly maintaining proper spinal alignment during sitting and standing activities, can prevent the progression of CS.[31]

Apart from this, preventative management of CS incorporates non-pharmacological strategies like lifestyle adjustments, weight control, yoga, exercise, patient education, psychosocial support, assistive devices, thermal treatments, and modifications in daily activities. Additionally, reassurance, counselling, and education can reduce the impact of psychosocial factors, while thermal modalities have the potential to alleviate joint stiffness, pain, and muscle spasms, and prevent contractures.

(B) Interventions

At Level 1- Solo Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited)

Clinical Diagnosis: The diagnosis of CS relies primarily on clinical evaluation following a thorough medical history and physical examination. Occasionally, additional investigations such as a complete blood count and X-ray may be conducted.

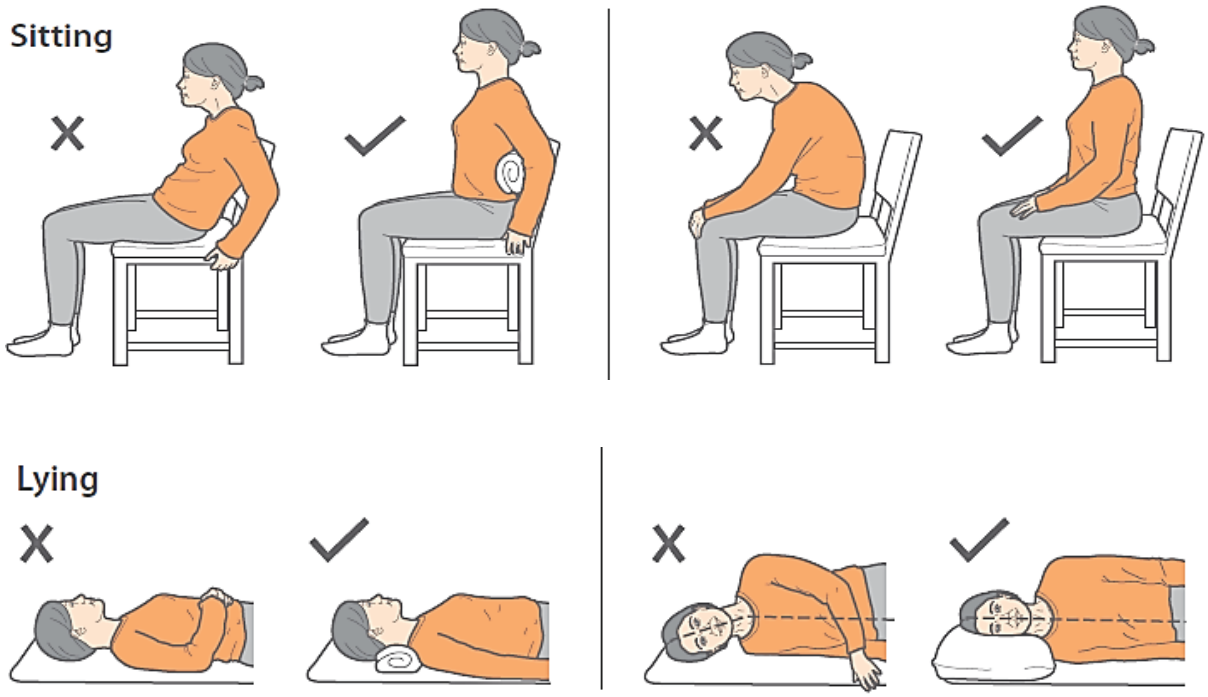
Recommended Diet and Lifestyle:[32]

After a long period of inactivity, start a routine of gentle exercises, such as yoga, to stretch and strengthen your muscles and improve posture. Incorporate age-appropriate low-impact exercises to strengthen your upper back. Remember to always stretch before any strenuous physical activity.

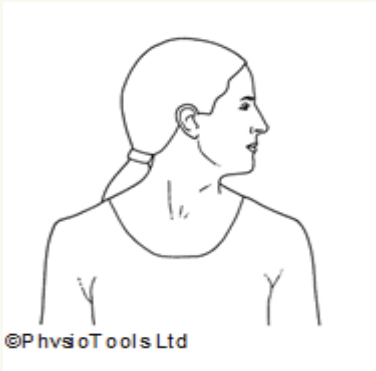
- Whether at home or in the workplace, ensure that the work surface is at a comfortable and appropriate height.
- Sit on a chair with proper lumbar support, ensuring it is at the right height for the task. Maintain proper posture with your shoulders back. Alternate your sitting positions regularly and take periodic breaks to walk around or gently stretch your muscles to relieve tension. Rest your feet on a low stool if you must sit for extended periods.
- Wear comfortable, low-heeled shoes.
- To minimize spinal curvature, sleep on your side. Always choose a firm and flat surface for sleeping.
- Ensure proper nutrition and diet to mitigate and prevent excessive weight gain. A diet with adequate daily amounts of calcium, phosphorus, and Vitamin D supports healthy bone growth.

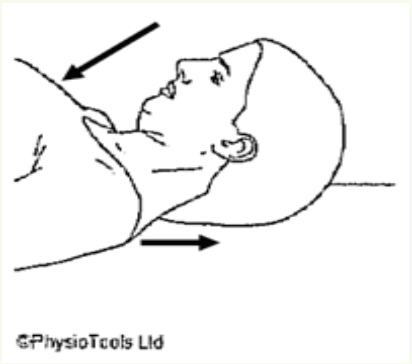
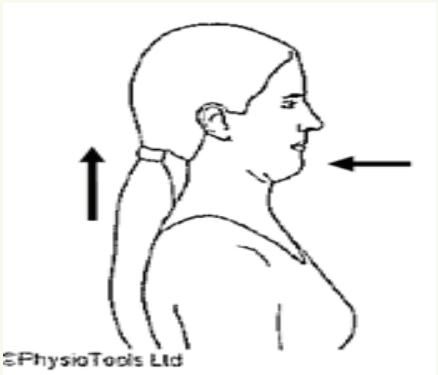
Posture[33]

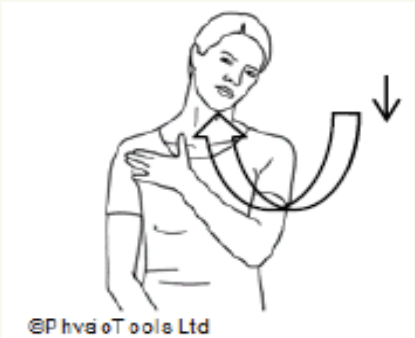
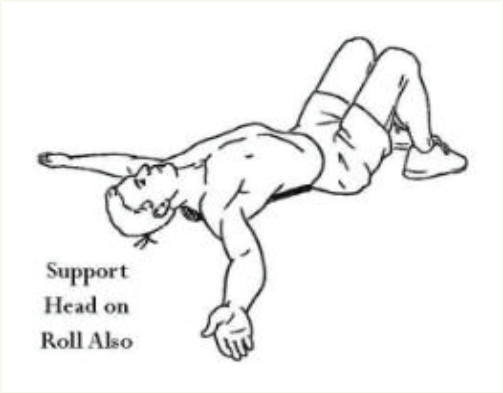
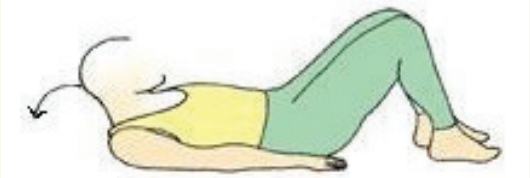
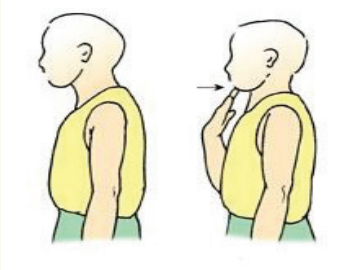
Posture is important when experiencing neck pain. Some examples of good and bad sitting and lying postures are as follows:

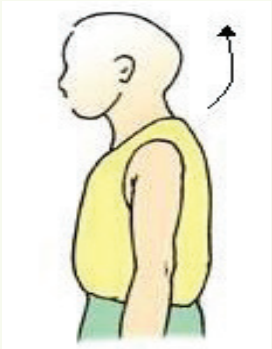


Exercises for CS:[44, 34, 35]

S.no.	Exercises	
1.	**Neck Rotation** • Sit on a chair or on the edge of the bed • Gently turn your head to look over your shoulder • Hold for 5-10 seconds • Turn your head back to the middle then turn to look over another shoulder • Hold for 5-10 seconds • Repetitions	
2.	**Lateral / Side Flexion** • Sit on a chair or on the edge of the bed • Tilt your head to lower your ear down towards your shoulder • Use your hand to gently pull your head further to the side • Feel a stretch on the opposite side • Hold for 5-10 seconds • Repetitions	

S.no.	Exercises	
3.	**Flexion/extension** **Flexion:** Sitting upright in a good posture, bend your head forwards gently pulling your chin closer to your chest. Hold for a count of 5 then relax. **Extension:** Sitting upright in a good posture, take your head slowly back until you are looking at the ceiling. Hold for a count of 5 then relax.	
4.	**Deep neck flexion** • Lie on your back with a thin pillow to support your head or do it in sitting • Nod your head downwards so your chin comes towards your chest • Hold for 5-10 seconds • Repetitions	
5.	**Chin Retraction** • Sit on a chair or on the edge of the bed • Pull your chin in towards you keeping your neck and back straight (make a double chin) • Hold the end position and feel a good stretch in your neck for 5-10 seconds • Repetitions	
6.	**Scapula Setting** • Sit on a chair or on the edge of the bed • Place your fingers on your shoulders • Roll your shoulders back • Glide your shoulder blades down and together at the back • Hold this posture for 5-10 Seconds • Repetitions • You can progress this by lying on your tummy with your arms by your side, palms facing up and lifting them off the bed.	

S.no.	Exercises	
7.	**Scalene Stretch** • Sit on a chair or on the edge of the bed • Place your right hand on your left shoulder • Tilt your head to the right, bringing your right ear to your • right shoulder (make sure the shoulder is kept still). • Slowly rotate your head to the left keeping your right ear near your right shoulder to feel more of a stretch. • Hold stretch for 5-10 seconds • Repetitions	
8.	**Pectoralis Stretch** • Lie on your back with a rolled-up towel placed lengthways under your back • Slowly bring your arms out to the side into a Y-shape • Hold stretch for 5-10 seconds • Repetitions	
9.	**Head lifts** • Lie on your back on a bed or on the floor (with a folded towel or pillow under your head, if more comfortable). • Gently press the back of your head towards the floor while pulling in your chin until you feel the stretch on your upper neck. • Hold in this position for 5 - 10 seconds then relax. • Repeat this 5 - 10 times. • Do not clench your teeth while doing this exercise.	
10.	**Chin tucks** • Sit or stand with good posture and tuck your chin in but don't look down. • Gently pull your head back as though nodding your head or trying to make a double chin. • You can put your hand on your chin for a guide if needed. • Hold in this position for 5 - 10 seconds then relax and repeat 5 - 10 times.	

S.no.	Exercises	
11.	**Shoulder lifts** • Either sit or stand and lift your shoulder towards the back of your head in a shrugging motion then relax. • Repeat 5 times.	

Yoga practices for the management of CS [44]:

Yoga can effectively manage CS patients through various practices. Some *asanas/kriyas* are: *Tadasana, Urdhwa Hastottanasana, Katichakrasana, Ardha Matsyendrasana, Tirkonasana, Vajrasana, Ustrasana, Gomukhasana, Makarasana, Bhujangasana, Dhunarasana, Bharamari, Shalabasana, Shavasana, Meditation. etc*

Restricted diet and lifestyle:[34,44]

- Refrain from lifting weights with improper posture.
- If driving, take regular breaks and avoid long hours behind the wheel.
- Use minimal pillows under your neck and shoulder while sleeping.
- Soft chair, bed should be avoided.
- Avoid leaning while standing or sitting. When standing, maintain balanced weight distribution on your feet. Reduced curvature in the back makes it better equipped to support weight.
- Steer clear of excessive stress and anxiety, as it amplifies pain intensity.
- Stop smoking. Smoking diminishes blood flow to the spine and leads to the degeneration of spinal discs.
- Avoid Fried foods, spicy, oily foods, excessive meats and refined foods like sweets, confectionery, bread, and other refined wheat products. These along with other factors contribute to the development of CS and bone demineralisation.

Follow Up (every 15 days or earlier as per the need)

Reviews should include:

- Keep track of the individual's symptoms and how the condition affects their daily life and well-being.
- Continuously monitor the condition's long-term progression.
- Administer CS management through exercises and Yoga.
- Engage in discussions with the individual about their understanding of the condition, any

worries or questions, personal choices, and access to necessary services.

- Regularly assess how well all treatments work and how well the individual can tolerate them.
- Provide guidance and support for self-management.

Referral Criteria:

- When treatment does not yield a positive response.
- When there is evidence of the condition worsening in severity or developing complications.
- When the condition significantly affects their quality of life and ability to perform daily activities.
- When there is uncertainty in making a diagnosis.
- When the condition remains uncontrolled despite efforts

Siddha Line of Treatment [36, 37, 38, 39, 40,41,42,43]:

(Choice of medicines, doses, and duration may be altered according to the condition of the patients and severity of the disease)

Level 1

Day 1: Ennai muzhukku (Oleation):

Oleation is the practice of massaging the head with medicated oils. It is recommended to give strength to five sense organs (Panchaendrinyangal). Patients, elderly persons, children, and those who are taking oil bath should bath only in lukewarm water. Futher depending upon the season, country and state of body health, water soaked with Mangifera indica, Emblica officinalis leaves or water mixed with aromatic powder or clear water may be used for bathing according to the circumstances. Vitiated Azhal should be corrected by an Oil bath with medicated oils that mitigate the Azhal humor.

- Chukku Thailam - Quantity sufficient (For Ext. Use only)
- Seeraga Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2: Kazhichal Maruthuvam (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

- Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 3: Rest

From Day 4 onwards:

Internal Medicines:

Churanam:

- Inji Churanam - 1-3 gm with honey, BID, after food for 48 days
- Amukkara Churanam (Plain) - 1-3 gm with honey, BID, after food for 48 days
- Elathy Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days
- Parangipattai Churanam - 1-3 gm with honey, BID, after food for 48 days
- Pirandai Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days.

(Either one or two of the Churanam(s) may be used)

Parpam:

- Sangu Parpam -100 - 300 mg with ghee, BID, after food for 48 days.
- Kungiliya Parpam -100 - 300 mg with ghee, BID, after food for 48 days.

Chenduram:

- Arumuga Chenduram - 100 - 200 mg with honey, BID, after food for 48 days.
- Aya Chenduram - 100 - 200 mg with honey, BID, after food for 48 days.

(Any one Parpam and one Chenduram may be administered)

Ilagam:

- Amukkura Ilagam - 3 - 5 gm with warm milk, BID after food for 48 days.
- Kesari Ilagam - 3 - 5 gm with warm milk, BID after food for 48 days.

(Any one Ilagam may be administered)

External Medicines:

Poochu (Liquid / Oil Poultice): (for 48 days – course may be repeated as per the discretion of the physician)

- Arkkathi thailam - Quantity sufficient
- Sivappu kukkil Thailam - Quantity sufficient
- Kunthiriga Thailam - Quantity sufficient

(Any one or both oils may be used)

Pattru (Semi-Solid Poultice):

- Kazharchi (*Caesalpinia bonducella*)
- Moosambaram (Kariappolam) (*Aloe littoralis*)

(Any one pattru may be used)

External Therapies:

Varmam :

- Pidari varmam
- Kaakkattai kaalam
- Saramudichi
- Ullangai vellai varmam
- Manipandha varmam
- Kai kavali Kaalam

(All or some of the points will be stimulated depending upon the symptoms)

Rules to be followed in Varma maruthuvam:

- Varmam Maruthuvam should only be done by Siddha Physician.
- Physician performing VarmamMaruthuvam should be free from sharp nails.
- Avoid approaching Varmam pressure points with nails & sharp metallic instruments.
- The better posture of the patient for VarmamMaruthuvam is sitting/ lying, so that physician will have the direct contact with patient"s eye.
- Varmam Maruthuvam can be done twice a week; in case of severity of the disease, treatment can be recommended daily.
- Varmam pressure points will vary according to the patient"s age, thega ilakkanam(Body Constitution/ Biotype) and severity of disease condition.
- Based on the severity and condition of the disease, the Siddha physician can prescribe the medicines along with Varmam maruthuvam.
- Naadi of the patient has to be analysed prior to Varmam maruthuvam.
- A male physician to male patient and a female physician to a female patient are preferable
- Varmam maruthuvam should not be done during severe systemic illness, semen ejaculation, uncontrolled passage of urine, stools, etc.,
- Varmam treatment is not advised for pregnant women. If needed, shall be decided by the Varmam expert.
- Varmam treatment is not advised for patients under the influence of alcohol, bitten by Snakes/ scorpion.

Level- I

Model prescription

Day 1- Chukku Thailam- Quantity sufficient (For Ext. Use only) - Ennai muzhukku (Oleation).

Day 2- Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4 -

Pirandai Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Aya Chenduram - 100 - 200 mg with honey, BID, after food, for 24 - 48 days.

Kunthiriga Thailam - Quantity sufficient (Ext), for 48 days.

Kazharchi (*Caesalpinia bonducella*) pattru - Quantity sufficient (Ext), for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below.

Follow up and duration:

Patients will be followed up weekly and will be treated upto 3 months depending upon the symptoms.

Referral Criteria:

- Cases in which the aforementioned treatment is ineffective or ineffectively effective, which result in worsening of symptoms.
- Patients with a variety of untreated co-morbidities who need rapid therapeutic intervention from traditional medicine.

At Level 2 (CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray)

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh one, must be evaluated thoroughly for complications.

Investigations: The diagnosis would be primarily clinical. However, some investigations may be necessary to investigate complications or exclude other differential diagnoses as follows:

- Haemogram
- X-ray
- Magnetic resonance imaging
- C-reactive protein

Management: Same as Level-1

Other procedures:

Physiotherapy Management:[44]

During acute painful episodes, prioritize rest, apply moist heat in cold weather, and use light massage to enhance paraspinal muscles' tone, circulation, and elasticity. Employ cervical traction with a 5-10-pound force, ensuring maximum comfort for the neck for 10-15 minutes. Consider ultrasonic treatment for painful trigger points in cervical and shoulder muscles and interferential therapy (IFT) for acute neck and back pain. For symptomatic relief, you can also use a removable soft cervical collar, back corset, or back belt. However, it's important to note that during acute painful situations, avoid exercise. In cases of chronic pain, focus on mobilization, strengthening exercises, moist heat, and cervical traction.

Cervical collar: Numerous authors affirm that utilizing a collar effectively reduces pain by minimizing motion and mitigating irritation of the nerve roots.[45, 46]

Recommended diet and Lifestyle: Same as Level 1

Follow Up: (every 15 days or earlier as per the need)

Referral Criteria:

- Same as mentioned earlier at level 1, Plus
- When the initial medical treatment does not produce improvement during an acute exacerbation.
- Advanced stages of disease like Lateral or central disc herniation etc

At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1- Ennai muzhukku (Oleation)

- Arakku Thailam - Quantity sufficient
- Santhanathi Thailam - Quantity sufficient

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice (*Zingiber officinale*) at early morning in empty stomach.
- Vathanaasa Thailam- 15 - 30 ml with lukewarm water at early morning in empty stomach.
- Kazharchi Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

(Any one medicine may be used)

Day 3: Rest

Day 4: **Internal Medicines:**

Kudineer Churanam:

(Kudineer should be prepared with 5 to 10gms of Kudineer Churanam by weight)

- Vatha sura kudineer - 30-60 ml, BID, before food 24 days
- Seenthil chukkupaal kudineer - 30-60 ml, BID, before food 24 days

(Any one Kudineer may be administered)

Churanam:

- Thiripala Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Amukkara Churanam - 1-3 gm with warm milk, BID, after food for 48 days

- Thirikadugu Churanam - 1-3 gm with honey, BID, after food for 48 days
- Nilavaagai Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Seenthil Churanam - 1 - 3 gm with ghee, BID, after food for 48 days.

(Any one or two Churanam(s) may be administered)

Parpam:

- Silasathu Parpam -125 - 325 mg with ghee or milk, BID, after food for 48 days.
- Muthuchippi Parpam - 200 - 400 mg with milk/ ghee, BID, after food for 48 days.
- Paal karudakal Parpam - 100 - 200 mg with milk/ ghee, BID, after food for 48 days.

Chenduram:

- Ayakantha Chenduram - 65 - 130 mg with honey, BID, after food 7-14 days
- Ayaveera Chenduram - 50 - 100 mg with honey / palm jaggery, BID, after food 7-14 days
- Maldevi (Thalaga) Chenduram- 50 - 100 mg with honey, BID, after food 7-14 days

(Any one Parpam and one Chenduram may be administred)

Mathirai:

- Sulaikudora mathirai - 1 - 2 nos with ginger juice, BID, after food for 24 days.
- Linga boobathi maathirai - 1 - 2 nos with honey or ginger juice, BID, after food for 24 days.
- Kanjirathi Maathirai - 1 - 2 nos with honey, BID, after food for 24 days.

(Any one Mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Thetrankottai Ilagam - 3 - 5 gm with warm milk, BID after food for 48 days.
- Nellikkai Ilagam - 3 - 5 gm with warm milk, BID after food for 48 days.

(Any one Ilagam may be administered)

Nei :

- Thanneervittan Nei - 5-10 gm with milk, BID after food for 48 days.
- Chitramutti Nei - 5-10 gm with milk, BID after food for 48 days.

(Any one Nei may be administered)

Ennai:

- Vatha Ennai (AnjEnnai Thailam) - Kaasedai (800 mg, approximately equal to 1ml) both Internal and External for 48 days.

Mezhugu: (for 7-14 days – course may be repeated as per the discretion of the physician)

- Idivallathi Mezhugu - 65 - 130 mg with palm jaggery, BID after food for 7 -14 days
- Navauppu Mezhugu - 65 - 130 mg with palm jaggery, BID after food for 7 -14 days

(Any one Mezhugu may be administered)

External Medicines:

Poochu (Liquid/Oil Poultice):

- Ulunthu Thailam - Quantity sufficient (For Ext. Use only).
- Arkkathi Thailam - Quantity sufficient (For Ext. Use only).
- Vatha kesari Thailam – Quantity sufficient (For Ext. Use only).

(Any one or two oils may be used)

Kattu (Compress or Bandage):

- Brahmi leaves (*Bacopa monnieri*)
- Murungai leaves (*Moringa oleifera*)
- Vaelai keerai leaves (*Cleome viscosa*)
- Vidamoongil kizhangu (*Crinum asiaticum*)

(Any one or all of the combinations may be used as per availability)

Ottradam (Fomentation):

- Kazharchi leaves (*Caesalpinia bonducella*)
- Thazhuthazhai leaves (*Clerodendrum phlomidis*)
- Notchi leaves (*Vitex negundo*)
- Vathanarayanan leaves (*Delonix elata*)
- Nuna leaves (*Morinda tinctoria*)
- Murungai leaves (*Moringa oleifera*)
- Aamanakku leaves (*Ricinus communis*)

- Vallarai leaves (*Centella asiatica*)
- Mudakattran leaves (*Cardiospermum halicacabum*)

(Some or all of the combinations may be used as per availability)

Level-II

Model prescription

Day 1- Arakku Thailam - Quantity sufficient (For Ext. Use only) - Ennai muzhukku (Oleation).

Day 2- Vathanaasa Thailam- 15 - 30 ml with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4 onwards onwards-

Thiripala Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Silasathu Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Maldevi Chenduram - 100 - 200 mg with honey, BID, after food, for 24 - 48 days.

Thetrankottai Ilagam - 3 - 5 gm with warm milk, BID after food, 24- 48 days

Arkkathi Thailam - Quantity sufficient (Ext), for 48 days.

Nuna (*Morinda tinctoria*), Murungai (*Moringa oleifera*), Aamanakku leaves (*Ricinus communis*) Ottradam - Quantity sufficient (Ext) for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms or deformities.
- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus and hypertension etc .

At Level 3 (Ayush hospitals attached to teaching institutions, District Level/Integrated/ State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities), multiple departments/facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counselling, and physiotherapy unit.

Clinical Diagnosis: Same as levels 1& 2.

Confirm diagnosis and severity with the help of investigations like magnetic resonance imaging,

Management: Same as levels 1& 2.

Recommended diet and Lifestyle: Same as levels 1& 2

Restricted Lifestyle: Same as levels 1& 2

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 2, plus
- Other modalities can be considered depending on the case and to rehabilitate properly.

At Level 3

In addition to level 1& 2 management the following will be exclusively used in level 3

Line of Treatment:

Day 1-Ennai muzhukku (Oleation)

- Notchi Thailam - Quantity sufficient (For Ext.use only)
- Arkkasheerathi Thailam - Quantity sufficient (For Ext.use only)

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Meganatha Kuligai - 1-2 pills with ginger juice (*Zingiber officinale*) at early morning in empty stomach.

Day 3- Rest

From Day 4 onwards onwards- Internal Medicines:

Churanam:

- Pirandai Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Seenthil Churanam - 1 - 3 gm with ghee, BID, after food for 48 days.
- Keezhanelli Churanam - 1 - 3gm with lukewarm water, BID, after food for 48 days.
- Ashta Churanam - 1 – 3 gm with lukewarm water, BID, after food for 48 days.

(Any one Churanam may be used)

Parpam:

- Muthu Parpam - 60 - 120 mg with Notchi leaf juice, BID, after food for 48 days.
- Pavala Parpam (uppu) - 65 - 200 mg with ghee, BID, after food for 48 days.
- Thamira (Sembu) Parpam - 30-60mg with ghee BID after food for 5 days
- Pirandai Parpam - 100 – 200 mg with ghee, BID, after food for 48 days.

(Either one or some Parpam may be used)

Chenduram:

- Chanda marutham Chenduram - 50 - 100 mg with honey, BID for 5 days.
- Poorana Chandrodhayam - 50 - 100 mg with honey/ karpoorathy Churanam, BID, after food for 3 days.
- Maldevi Chenduram - 60 - 120 mg with honey, BID, after food for 7 days.

(Any one Chenduram may be used)

Mathirai:

- Sulaikudora mathirai - 1 - 2 nos with ginger juice, BID, after food for 24 days.
- Linga boobathi mathirai - 1 - 2 nos with honey or ginger juice, BID, after food for 24 days
- Kanjirathi Mathirai - 1 - 2 nos with honey, BID, after food for 24 days

(Any one Mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Mahavallathi Ilagam - 5 - 10 gm with milk, BID after food for 24 days
- Thetrankottai Ilagam - 5 - 10 gm with milk, BID, after food for 48 days

(Any one Chenduram may be used)

Ennai:

- Vatha Ennai (Anjennai Thailam) - Kaasedai (800 mg, approximately equal to 0.8ml) both Internal and External.

Mezhugu:

- Rasagandhi Mezhugu - 250 - 500 mg with palm jaggery, BID, after food for 24 days
- Nanthi Mezhugu - 65 - 130 mg with palm jaggery, BID, after food for 24 days
- Vaan Mezhugu - 50 - 100 mg with palm jaggery, BID after food for 24 days

(Any one Mezhugu may be used)

External Medicines:

Poochu (Liquid/Oil Poultice):

- Chitramutti Thailam - Quantity sufficient (For Ext. Use only)
- Lagu vida mutti Thailam - Quantity sufficient (For Ext. Use only)
- Arkkathi Thailam - Quantity sufficient (For Ext. Use only)
- Vasavu Ennai - Quantity sufficient (For Ext. Use only)

(Any one or two oil may be used)

Suttigai (Siddha Cautery): (As directed by the physician)

- Manjal kombu (Rhizome of *Curcuma longa*)
- Uloga Suttigai (Metal Cauterization)

Attai Vidal (Leech Therapy): (As directed by the physician)

- Medicated leeches are placed on specific places at specific times over the affected area.

Level-III

Model prescription

Day 1- Notchi Thailam - Quantity sufficient (For Ext. Use only) - Ennai muzhukku (Oleation).
Day 2- Meganatha Kuligai - 1-2 pills with ginger juice (*Zingiber officinale*) at early morning in empty stomach (Purgation).
Day 3- Rest
From Day 4 onwards-
Seenthil Churanam - 1 - 2 gm with ghee, BID, after food, for 24 - 48 days.
Pirandai Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.
Thamira (Sembu) Parpam - 30 - 60 mg with ghee BID after food for 5 days. (or)
Kanjirathi Maathirai - 1 - 2 nos with honey, BID, after food for 24- 48 days (or)
Mahavallathi Ilagam - 5 - 10 gm with milk, BID after food for 24- 48 days.
Arkkathi Thailam - Quantity sufficient (Ext), for 24 - 48 days.
Manjal kombu (Rhizome of *Curcuma longa*) suttigai- External for 7- 15 days once.

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management .

Referral criteria:

Patients with severe chronic contractures or deformities including valgus deformity, full joint degeneration, severe effusion that is not eased by previous therapy, patients with indications for surgical intervention to manage osteoarthritis.

Patients who require immediate attention at higher centers because their co-morbidities cannot be handled in the Level 3 setting.

8. Prevention Management

Recommended diet and Lifestyle (Pathiyam)

TABLE 1:

1.	**Salt**	1. Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1. Kodam puli *(Garcinia cambogia)*
3.	**Oil**	1. Nall Ennai *(Gingelly oil)* 2. Kadal Ennai *(Groundnut oil)*
4.	**Dairy products**	1. Cow & Goat (Milk & Ghee) 2. Butter milk
5.	**Sugar**	1. Panai vellam (Palm jaggery) 2. Naatu sarkarai 3. Karupatti
6.	**Spices**	1. Vendhayam *(Trigonella foenum-graecum)* 2. Lavanga pattai (*Cinnamomum verum)* 3. Milagu *(Pepper nigrum)* 4. Elam *(Elettaria cardamomum)* 5. Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1. Ulunthu *(Vigno mungo)*
8.	**Millets**	1. Ragi *(Eleusine coracana)* 2. Varagu *(Paspalum scrobiculatum)* 3. Thinai *(Setaria italica)* 4. Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varieties)**	1. Mani samba 2. Seeraga samba 3. Kai kuthal arisi 4. Puzhungal arisi
10.	**Greens**	1. Manali keerai *(Gisekia pharnaceoides)* 2. Vallai keerai *(Convolvulus repens)* 3. Kothamalli keerai *(Coriandrum sativum)* 4. Mudakaruthan (*Cardiospermum halicacabum*)

		5. Sirukeerai (*Amaranthus tricolor*) 6. Thoothuvalai (*Solanum trilobatum*) 7. Mookirattai (*Boerhavia diffusa*) 8. Puliyaarai (*Oxalis corniculata*)
11.	**Vegetables**	1. Kathiri pinju *(Solanum melongena)* 2. Avarai pinju *(Lablab purpureus)* 3. Murungai pinju (*Moringa oleifera)* 4. Aththi (*Ficus racemosa*) 5. Karunai kizhangu (*Amorphophallus paeoniifolius*) 6. Sambal poosani (*Benincasa hispida*)
12.	**Tubers**	1. Mullangi *(Rhaphanus sativus)* 2. Karunai *(Amorphophallus paeoniifolius)* 3. Koogai (*Maranta arundinacea)*
13.	**Non -Veg**	1. Velladu(*Goat*) 2. Kaadai (*quail)* 3. Kaanan kozhi (*White breasted waterhen)* 4. Udumbu *(Varanus bengalensis)* 5. Kavuthari (*Francolinus pondicerianus)* 6. Ayirai meen (*Cobitis taenia*).

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
Karungali Acacia catechu *(Root)*	Ulunthu kali *(Vigna mungo)*	Irumurai vaditha kanji	Varagu satham *(Paspalum scrobiculatum)*	Naarathai *(Citrus medica)*	Sundai vatral *(Solanum xanthocarpum)*	Murungai keerai soup *(Moringa oleifera)*
		Arisi vaditha sudu kanji	Thinai satham *(Setaria italica)*	Kalakkai *(Carissa carandas)*	Thoothuvalai vatral *(Solanum trilobatum)*	Mudavaatu kaal *(Drynaria quercifolia)*
		Koogai mavu kanji *(Maranta arundinacea)*	Saamai satham *(Panicum sumatrense)*		Nelli vatral *(Phyllanthus emblica)*	
		Venthaya kanji *(Trigonella foenum-graecum)*			Aathondai vatral *(Capparis zeylanica)*	

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
		Raagi kanji *(Eleusine coracana)*			Manathakkali *(Solanum torvum)*	
		Chukku mudi kanji *(Zingiber officinale)*			Pirandai vatral *(Cissus quadrangularis)*	

Table 3 Restricted Diet

- Vatham-inducing foods like root tubers except karunai kizhangu
- Maa porutkal
- Carbohydrates-rich diet
- Vaazhai (tender fruit of *Musa paradisiaca*)
- Urulai Kizhangu (*Solanum tuberosum*)
- Senai Kizhangu (*Amorphophallus paeoniifolius*)
- Vaer kadalai (*Arachis hypogea*)
- Pattani (*Pisum sativum*)
- Mochai (*Vicia faba*)
- Sour and astringent foods
- Sea foods except small prawns

b. Lifestyle

- Regular exercise
- Applying heat or ice to the neck can ease sore neck muscles.

a. Yoga

1. *Bhujangasanam*
2. *Koomugasanam*
3. *Arthamachaasanam*
4. *Chakkarasanam*
5. *Arthachakkarasanam*
6. *Balasanam*

7. *Halasanam*
8. *Savasanam*
9. *Pranayamam*

Referral Criteria

- Diffuse idiopathic skeletal hyperostosis
- Pagets disease
- Osteomyelitis
- Tuberculosis
- Myeloma
- Tumors
- Severe ankylosing spondylosis.

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4 LUMBAR SPONDYLOSIS

4
LUMBAR SPONDYLOSIS

THANDAGA VATHAM (LUMBAR SPONDYLOSIS)

THANDAGA VATHAM

NAMASTE Code : Z34

WHO ISMT Code : ISMT-4.24.76 (Thandaga Vayu)

ICD-11 TM2 : SP42

LUMBAR SPONDYLOSIS

ICD 11Code: FA80.0 – FA8Z

CASE DEFINITION

Lumbar spondylosis may be applied nonspecifically to any and all degenerative conditions affecting the discs, vertebral bodies, and/or associated joints of the lumbar spine. Spondylosis is considered mechanistically, as the hypertrophic response of adjacent vertebral bone to disc degeneration creating clinical pain syndromes within the axial spine and associated nerves. The condition is said to be progressive and irreversible.[1,2,3]

Thandaga vatham is a kind of degenerative disease of the spinal column characterized by a lightness and pallorness (like a cotton wool) affecting the body constituents (*udal thathu)* bones, blood and muscles. It is manifested due to vitiation of Vatham characterized by neuromuscular rigidity, increased porosity of the bones, impairment of bowel and bladder functions and eventually causing debility and crippling[4].

INTRODUCTION (*incidence/ prevalence, morbidity/mortality)*

- Thandaga vatham / Thanda vayu is interpreted as "Lumbar Spondylosis - Degenerative spine disease (DSD)[2]. which is caused due to vitiation of Vali humor. Thandaga Vatham has features of spinal osteoarthrosis particularly in the lower spine. It is also correlated with features of lumbarsacral spinal conditions like lumbar canal stenosis, spondylolisthesis, etc. According to the Sage Yugi in his treatise Yugi Vaithya Chinthamani, it is categorized as one among 80 types of Vatha diseases. The lumbar pain occurs while stimulating the Mulatara chakaram (Root of existence) which is located at the base of the human spine. The symptoms are low backache, sweating,

body pain, body stiffness, pallor of the body and yellowish discoloration of stools and urine[4].

- Degenerative spine changes are remarkably common in population of aged 45–64 years to demonstrate osteophytes within the lumbar spine and as early as age of 39 and as late as age of 70 years.[1,5-7] Even younger persons are found with evidence of lumbar spondylosis. Degenerative changes have been found to be present in 3% of individuals aged 20–29 years. [2,3]
- Increased Body Mass Index (BMI), incident back trauma, daily spine loading (twisting, lifting, bending, and sustained non-neutral postures), and whole-body vibration (such as vehicular driving) to be factors which increase both the likelihood and severity of Spondylosis. [6,11,12]
- Genetic factors likely influence the formation of osteophytes and disc degeneration.[13-15]

DIAGNOSTIC CRITERIA

For the diagnosis of lumbar spondylosis previous history taking, physical examination, imaging studies are performed.[16] The initial evaluation for patients with low back pain begins with an accurate history and thorough physical exam with appropriate provocative testing.[17] Pain within the axial spine at the site of these degenerate changes is due to nociceptive pain generators identified within facet joints, intervertebral discs, sacroiliac joints, nerve root dura, and myofascial structures within the axial spine.[1,18]

A constellation of pain symptoms encompassed in the term *neurogenic claudication* which include to varying extents lower back pain, leg pain, as well as numbness and motor weakness to lower extremities that worsen with upright stance and walking, and improve with sitting and supine positioning.[1,19]

Radiographic studies, whether plain X-ray film, CT or MRI, may provide useful confirmatory evidence to support an exam finding and localize a degenerative lesion or area of nerve compression.[18]

CLINICAL EXAMINATION

All physical examinations will include the evaluation of the neurologic function for strength, sensation and reflexes of the arms, legs, bladder, and bowels.[18,19, 20,21]

Symptoms:[16,18,19]

- Lower back pain
- Stiffness after prolonged periods of inactivity
- Radiating pain from the lower back to legs or buttock region
- Reduced flexibility and movement in the lower back
- Abnormal sensations of tingling and numbness
- Weakness of leg muscles.

- Changes in sphincter capacity such as neurogenic bladder or neurologic loss can be the after-effect of spinal cord compression from extreme degeneration of lumbar spine

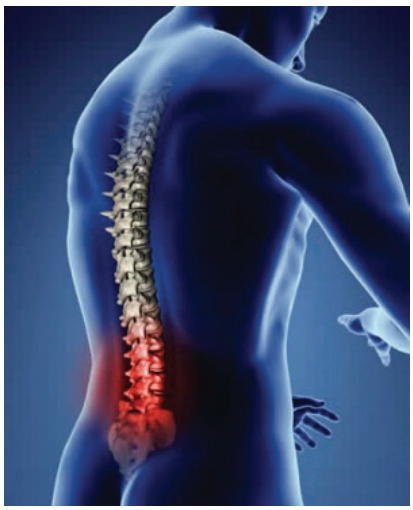
Signs:

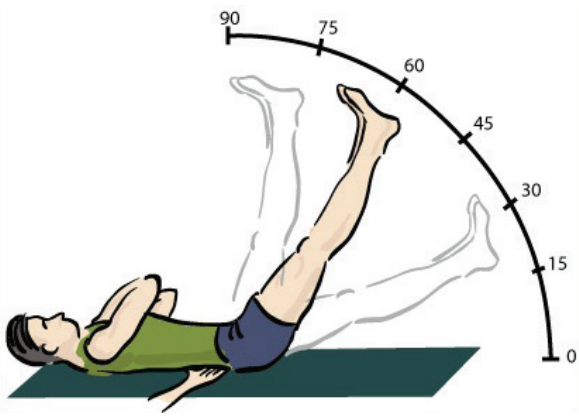
The Straight Leg Raise (SLR) test is commonly used to identify disc pathology or nerve root irritation, as it mechanically stresses lumbosacral nerve roots, hence useful for ruling out lumbo-sacral radiculopathy. It also has specific importance in detecting disc herniation and neural compression. It is also classified as a neurodynamic evaluation test as it can detect excessive nerve root tension or compression.[22] The SLR test is more sensitive than specific. Adding structural differentiation (e.g., neck flexion, ankle dorsiflexion, hip adduction) improves the reliability of the SLR test in clinical practice.[23]

- Inclusion of neck flexion in the SLR is documented as Hyndman's sign, Brudzinski's Sign, Linder's Sign, or the Soto-Hall test.
- Inclusion of ankle dorsiflexion in the SLR is documented as Lasegue's test or Bragard's test. Lasègue's sign is said to be positive if the angle to which the leg can be raised (upon straight leg raising) before eliciting pain is <45°.[24]
- Inclusion of great toe extension in the SLR (instead of ankle dorsiflexion) is documented as Sicard's Test.[25]

A true positive SLR test should include:

- Radicular leg pain (symptoms below the knee).
- Pain occurs when hip is flexed at 300 and 600 or 700 from horizontal. Neurological pain which is reproduced in the leg and lower back between 300-700 of hip flexion is suggestive of lumbar disc herniation at the L4-S1 nerve roots.[23]





Waddell Signs [26]

A comprehensive examination should also include ruling out non-organic causes of low back pain/symptoms. When the clinician suspects potential psychological causes, consideration should be given to the following:

- Nonspecific description of symptoms or inconsistency, including superficial/non-anatomic sites of tenderness on examination
- Pain with axial load/rotational movements
- Negative SLR with patient distraction (one approach includes having the patient sit in a chair and reproducing the SLR "environment")
- Non-dermatomal patterns of distribution of symptoms
- Pain out of proportion on examination

Complications

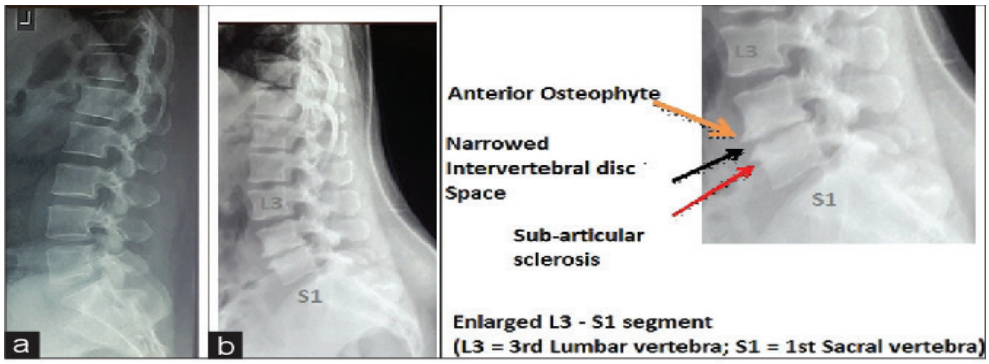
- Worsening symptoms of lumbar spondylosis
- Worsening neurological deficits
- Worsened intervertebral disc herniation
- Narrowing of spinal canal due to secondary osteophytes
- Affecting the patient's life in all aspects

SUPPORTIVE INVESTIGATIONS

Usually, clinical assessment is sufficient for diagnosis, but diagnostic imaging like X-rays, MRI, and EMG can confirm it, if necessary, demonstrating normal distal motor and sensory nerve conduction studies.[28] Radiographic studies, whether plain X- ray film, CT or MRI may provide useful confirmatory evidence to support an exam finding and localize a degenerative lesion or area of nerve compression.1 Plain X-rays are the first line of evaluation whereas CT and MRI are modalities for detailed investigation.

Essential Investigations:

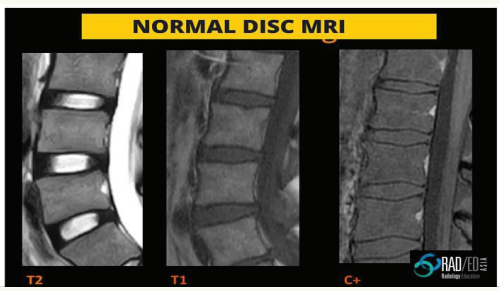
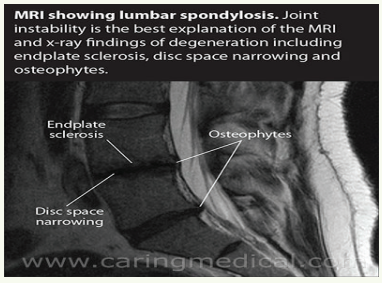
Investigation	Findings[2,3]
Plain or Digital x-ray Lumbar spine (AP, Lat.)	• Osteophytes • Thickening of facet joints • Narrowing of the intervertebral disc spaces.



Lateral radiograph of normal (a) and spondylotic (b) lumbo-sacral

Advanced investigations:

Investigation	Findings[2,3]
Magnetic resonance imaging (MRI)of the Lumbar Spine	It is the preferred choice for suspected serious conditions. With advancement, MRI is now considered as an ideal, accurate and reliable modality for the assessment and evaluation of lumbar spondylosis which involves features of degenerative disc disease, degenerative endplate changes, disc herniation, spinal compression, and consequences of instability in degenerative lumbar spondylosis. CT does not give this direct evaluation. On MRI images, diagnosis of desiccated vertebral discs and lumbar spondylosis is made by changes in the signal intensity of vertebral body end plate.[12]
Blood tests	Generally, blood tests are not required for diagnosis of lumbar spondylosis but to exclude other pathologies or complications full blood count, ESR, CRP, protein electrophoresis and other necessary tests, e.g., HLAB27.
Electromyography (EMG)	To exclude other pathologies or complications

MRI of Normal Lumbar Spine	MRI of Lumbar spondylosis[1]
	

Siddha Envagai Thervu findings (Eight-Fold System of Clinical Assessment):

Naadi - Vathapitham/Kabavatham

Sparisam - Mitha Veppam / Tenderness present in LS region/ Radiating pain present in both LLs.

Naa - Pallor/ Dryness/ Coated / Midline Fissure/ Normal

Niram - Pallor/ Normal

Mozhi - Low-pitched/ Normal

Vizhi - Normal/Pallor

Malam - Yellow hard stools/Normal

Neerkuri - Yellowish in color, tamarind odour

Neikuri - Oil may spread in the form of a snake indicating prominently Vatham or sometimes Pitham

DIFFERENTIAL DIAGNOSIS

Diagnosis with Specific Pathology	Differentiating features
Cauda equina syndrome [33]	• Back pain and sciatica as in lumbar spondylosis • Weakness and changes in sensation in the lower extremities • Bowel and bladder dysfunction • Sexual dysfunction in males • Saddle anaesthesia: Absence of sensation in the second-fifth sacral nerve roots, the perianal region
Ankylosing spondylitis [34]	• Back pain is common as in lumbar spondylosis • Onset of symptoms before the age of 40, gradual and insidious onset • Relief with exercise, lack of improvement with rest and nocturnal pain with improvement upon arising. • Spinal stiffness, limited mobility and postural changes, particularly hyperkyphosis. • Association of HLA-B27 • Elevated levels of acute phase reactants, such as erythrocyte sedimentation rate (ESR) and elevated C-reactive protein (CRP). • Radiographic features of squaring of vertebral bodies, bamboo spine sign.
Fibromyalgia / Muscle spasm [35]	• Poorly localized pain, difficult to ignore, severe in its intensity, & associated with a reduced functional capacity. • Fatigue, stiffness, sleep disturbance, cognitive dysfunction, anxiety, and depression.

Spinal cord tumor[36,37]	• Pain is the most common symptom which mimics lumbar spondylosis. • Common symptoms of spinal cord compression include muscle weakness, sensory loss, numbness in hands and legs, and rapid onset paralysis. • Bowel or bladder incontinence often occurs in the later stages of the disease.
Spinal infection[38,39]	• Back pain is the most common presenting symptom as in lumbar spondylosis • Neurologic impairment including sensory loss, weakness, or radiculopathy • Fever is common in viral infections • Pain may be elicited through palpation or percussion of spinous processes overlaying spinal epidural abscess. • Vertebral osteomyelitis, spinal epidural abscess, etc.
Lumbar Spondylolisthesis40	• Typically have intermittent and localized low back pain • Pain is exacerbated by flexing and extending at the affected segment, improve in certain positions such as lying in supine position. • Other symptoms like buttock pain, numbness, or weakness in the leg(s), difficulty walking, and rarely loss of bowel or bladder control.
Lumbar Spondylolysis [41]	• Manifest symptoms constituting insidious onset of recurrent axial low back pain that increases with activity and exacerbated by lumbar hyperextension. • Increased lumbar lordosis, tight hamstrings, reduced trunk range of motion (particularly with extension), tenderness to palpation overlying the pars fracture site • A positive stork test (single leg hyperextension and rotation of the spine which reproduces the patient pain • Characteristic absence of any radiculopathy.
Intervertebral disc prolapse[42]	• Low back pain, sensory abnormalities, weakness at the lumbosacral nerve roots distribution as in lumbar spondylosis • Limited trunk flexion • Pain exacerbation with straining, coughing, and sneezing • Pain intensified in a seated position, as the pressure applied to the nerve root is increased by approximately 40% • Narrowed intervertebral space, traction osteophytes, and compensatory scoliosis on X-ray • Over 85 to 90% of patients with an acute herniated disc experience relief of symptoms within 6 to 12 weeks without any treatments

PRINCIPLES OF MANAGEMENT

Red Flag Signs of Lumbar Spondylosis:

These signs should be assessed before initiating treatment for need for management through modern medicine.

- Widespread weaknesses or loss of sensation (more than one myotome or dermatome)
- Anything that suggests myelopathy and these include: slow onset, neurological symptoms, difficulty walking, weak hand or foot movement, loss of bowel bladder or bowel function.
- Any lower motor neuron signs
- Any symptoms that suggest cancer
- History of cancer, AIDS, or infection
- Tenderness of low back vertebrae suggesting trauma or fracture
- History of violent trauma, before the low back pain
- Recent surgery of the low back
- Risk of osteoporosis (not exclusive to the low back)
- Vascular signs and symptoms such as dizziness, black outs and drop attacks.

Patients need education about their LS diagnosis, as there are common misconceptions and concerns about potential disability. Patients over-emphasize the value of radiological studies and have mixed perceptions of the relative risk and effectiveness of surgical intervention and conservative management. It's important to emphasize the natural course of LS and discuss therapeutic options, which include lifestyle changes like exercise and maintaining good posture when sitting and standing. The treatment is required for back pain and radicular pain rather than lumbar spondylosis. Simple first line care like advice, reassurance, and self-management with a review at 1-2 weeks is required and should be given non-pharmacologic treatments for pain relief such as lifestyle adjustments, weight control, yoga, exercise, patient education, psychosocial support, assistive devices, thermal treatments, and modifications in daily activities, etc. If patients need second line care, non-pharmacological treatments (e.g., physical, and psychological therapies) should be tried before pharmacological therapies. If pharmacological therapies are used, they should be used at the lowest effective dose and for the shortest period of time possible. Exercise and/or cognitive behavioral therapy, with multidisciplinary treatment may be required for more complex presentations.[43-45] If the patient is already under standard care (anti-inflammatory/analgesics/steroids), the physician may advise to taper the same gradually along with add-on Siddha therapy and can be re-assessed in the follow-ups for discontinuing the standard treatment in consultation with a conventional physician.

(A)**Prevention management** [46,47]

While lumbar spondylosis is often associated with aging, there are some lifestyle modifications which can help to reduce the risk of disease:

- Avoid excessive psychological and physical stress. Stress may cause exacerbation of pain and stiffness.
- Maintain healthy body weight through balanced diet along with regular physical activity and exercises. Excess weight can place added stress on the spine.
- Maintain good posture, both while sitting and standing which can reduce strain on the lower back.
- Avoid forward bending exercise and jogging, running, jerking vigorously.
- Avoid carrying heavy bags and lifting heavy weights.
- Avoid trauma to the back.
- Avoid smoking. Smoking can contribute to disc degeneration.
- Proper ergonomics in the workplace and at home can reduce the risk of developing lumbar spondylosis.

(B) Interventions

At Level 1- Solo Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited)

Clinical Diagnosis: The diagnosis of LS relies primarily on clinical evaluation following a thorough medical history and physical examination. Occasionally, additional investigations such as X-ray / MRI and a complete blood count.

Recommended Diet and Lifestyle:[55]

After a long period of inactivity, start a routine of gentle exercises, such as yoga, to stretch and strengthen muscles and improve posture. Incorporate age-appropriate low-impact exercises to strengthen the lower back. Remember to always stretch before any strenuous physical activity.

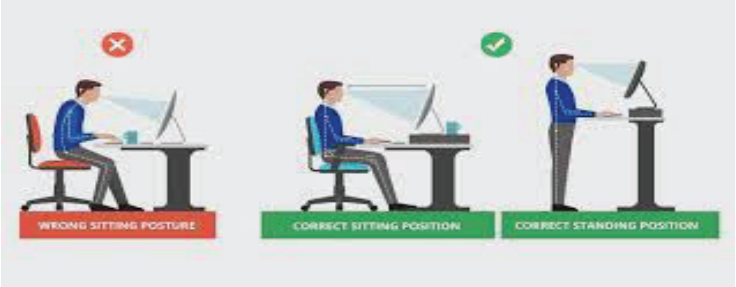
- Whether at home or in the workplace, ensure that the work surface is at a comfortable and appropriate height.
- Sit on a chair with proper lumbar support, ensuring it is at the right height for the task. Maintain proper posture with shoulders back. Alternate sitting positions regularly and take periodic breaks to walk around or gently stretch muscles to relieve tension. Rest feet on a low stool if one must sit for extended periods.
- Wear comfortable, low-heeled shoes.

- To minimize spinal curvature, sleep on the side. Always choose a firm and flat surface for sleeping.
- Ensure proper nutrition and diet to mitigate and prevent excessive weight gain. A diet with adequate daily amounts of calcium, phosphorus, and Vitamin D supports healthy bone growth.

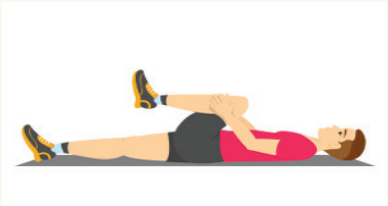
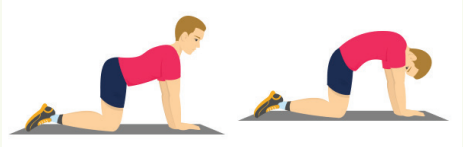
Posture [56]

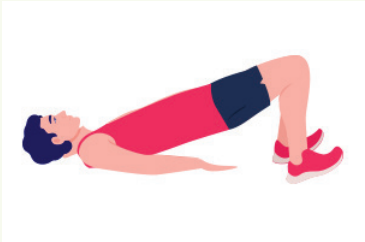
Posture is important when experiencing neck pain. Some examples of good and bad sitting and lying postures are as follows:

Prolonged sitting is generally accepted as an important risk factor, and it is frequently suggested that a lordotic posture should be maintained in the lumbar spine while sitting.



Exercises recommended for LS:[57,58]

Exercises	Procedure	Demonstration
Pelvic - tilt	• Lie on your back with your knees bent. • Tighten your stomach muscles and push your lower back towards the floor. • Hold for 5-10 seconds. • Relax. • Repeat 10 times.	
Knee-Chest	• Lie on your back with your knees bent • Bring one knee towards your chest • Hold for 5-10 seconds • Repeat with the other knee • Repeat 10 times for each knee	
Cat – cow Stretches	• Start on your hands and knees • Arch your back and look up (cow stretch) • Round your back and look down (cat stretch) • Repeat 10 times	

Exercises	Procedure	Demonstration
Hamstring Stretch	• Lie on your back with one leg straight and the other bent • Keep the straight leg raised and hold onto the back of your thigh • Hold for 10-15 seconds • Repeat with the other leg	
Bridging	• Lie on your back with your knees bent • Lift your hips up towards the ceiling • Hold for 5-10 seconds • Lower down • Repeat 10 times	

Yoga practices for the management of LS:[59-61]

Various yoga practices are helpful for the management of patients with low back pain. Some of the asanas are *Dhanurasana, Natarajasana, Setu Bandhasana, Matsyasana, Naukasana, Marjarisana, Ardha Setu Bandhasana, Shashankasana, Anahatasana, Paschimottanasana, Bhujangasana, Malasana, etc*. These asanas are helpful in strengthening lower back and abdominal muscles, increasing flexibility of the spine, enhancing the blood circulation in hip joints.

Restricted diet and lifestyle:[46,57,62]

- Do not take excess of salt, sweets, dessert, hydrogenated fat, soft drink, refined grain, tea and coffee.
- Do not take stress.
- Avoid food that causes overweight.
- Avoid exercising during flare up or acute pain.
- Do not sit on a low soft couch with a deep seat and when getting up from sitting, keep the normal curves in back.
- Avoid half bent positions while standing.
- Avoid lifting heavy weights.
- Do not sleep on stomach.
- Seat must be close enough to the wheel to keep the natural curves of the back.

- Avoid Fried foods, spicy, oily foods, excessive meats and refined foods like sweets, confectionery, bread, and other refined wheat products. These along with other factors contribute to the development of CS and bone demineralization.

Follow Up (Every 15 days or earlier as per the need of the patient)

Reviews should include:

- Monitoring the person's symptoms and the ongoing impact of the condition on their everyday activities and quality of life.
- Monitoring the long-term course of the condition.
- Management of LBP in terms of exercise, and physiotherapy.
- Discussing the person's knowledge of the condition, any concerns they have, their personal preferences, and their ability to access services.
- Reviewing the effectiveness and tolerability of all treatments.
- Self-management support.

Referral Criteria

- Non responsiveness to treatment
- Evidence of an increase in severity/complications such as progressive or severe neurological deficit in the lower extremity
- Substantial impact on their quality of life and activities of daily living
- Diagnostic uncertainty
- Uncontrolled co-morbidities, such as diabetes, hypertension or associated cardiac disease.

At Level 1:

Siddha Line of treatment[64-71]:

Day 1- Ennai Muzhukku (Oil bath - Oleation)

Oleation is the practice of massaging the head with medicated oils. It is recommended to give strength to five sense organs (Panchaendrinyangal). Patients, elderly persons, children, and those who are taking oil bath should bath only in lukewarm water. Futher depending upon the season, country and state of body health, water soaked with Mangifera indica, Emblica officinalis leaves or water mixed with aromatic powder or clear water may be used for bathing according to the circumstances.

- Chukku Thailam - Quantity sufficient (For Ext. Use only)
- Arakku Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2: Kazhichal Maruthuvam (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

- Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.
- Siddhadhi Ennai - 3 - 5 ml with Sombu (*Foeniculum vulgare*) decoction or Neeragaram (Fermented Rice Water) at early morning in empty stomach.

(Any one medicine may be administered)

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 3: Rest

Day 4: Internal medicines:

Kudineer Churanam:

(Kudineer should be prepared with 5 to 10gms of Kudineer Churanam by weight)

- Arathai kudineer -30-60 ml, BID, before food for 24 days
- Nilavembu kudineer -30-60 ml, BID, before food for 24 days

(Any one Kudineer may be administered)

***Churanam*:**

- Amukkara Churanam - 1- 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Elathy Churanam- 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Thirikadugu Churanam-1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days.

(Any one or two Churanam(s) may be administered)

Parpam:

- Kungiliya Parpam -100-500 mg, with ghee/ milk, BID, after food for 48 days
- Silasathu Parpam -125 - 325 mg with ghee, BID, after food for 48 days

Chenduram:

- Arumuga Chenduram -100-200 mg with honey/ Thirikadugu Churanam, BID, after food for 48 days.
- Aya Chenduram- 100-200 mg with honey/ Ghee BID, after food for 48 days.

(Either one Parpam or one Chenduram may be administered)

External Medicine:

Poochu (Liquid / Oil Poultice):

- Kunthirika Thailam– Quantity sufficient
- Chitramutti Thailam– Quantity sufficient

(Any one or both oils may be used)

Pattru (Semi-Solid Poultice):

Aavarai Ulunthu pattru (Cassia auriculata with Vigna mungo) 1:1 ratio (*Cassia auriculata* and *Vigna mungo*) with egg white or drumsticks leaves juice.

External Therapies:

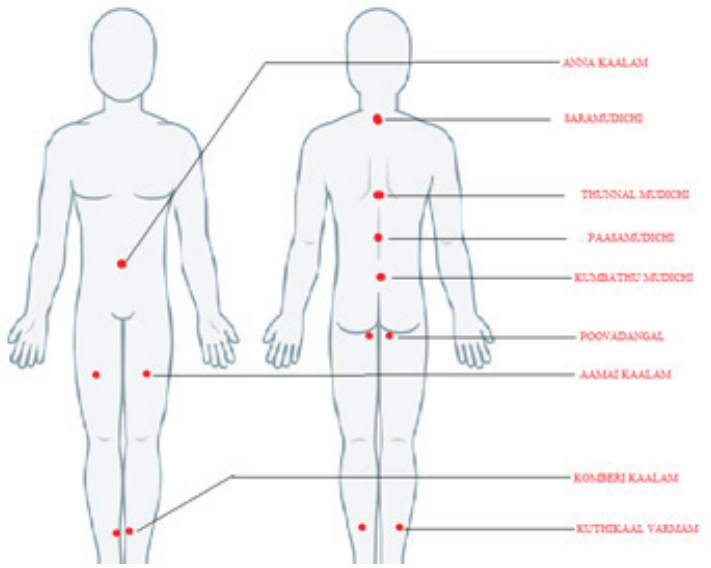
Varmam:

- Anna kalam : Situated over the umbilicus
- Saramudichi
- Thunnal mudichi
- Paasamudichi
- Kumbathu mudichi
- Poovadangal
- Aamai kaalam
- Komberi kaalam
- Kuthikaal varmam

(All or Some of the Varmam Points may be stimulated depending upon the symptoms)

Rules to be followed in Varma maruthuvam:

- Varmam Maruthuvam should only be done by Siddha Physician.
- Physician performing VarmamMaruthuvam should be free from sharp nails.
- Avoid approaching Varmam pressure points with nails & sharp metallic instruments.
- The better posture of the patient for VarmamMaruthuvam is sitting/ lying, so that physician will have the direct contact with patient‟s eye.
- Varmam Maruthuvam can be done twice a week; in case of severity of the disease, treatment can be recommended daily.
- Varmam pressure points will vary according to the patient‟s age, thega ilakkanam(Body Constitution/ Biotype) and severity of disease condition.
- Based on the severity and condition of the disease, the Siddha physician can prescribe the medicines along with Varmam maruthuvam.
- Naadi of the patient has to be analysed prior to Varmam maruthuvam.
- A male physician to male patient and a female physician to a female patient are preferable
- Varmam maruthuvam should not be done during severe systemic illness, semen ejaculation, uncontrolled passage of urine, stools, etc.,
- Varmam treatment is not advised for pregnant women. If needed, shall be decided by the Varmam expert.
- Varmam treatment is not advised for patients under the influence of alcohol, bitten by Snakes/ scorpion.



Level- I

Model prescription

Day 1- Chukku thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4-

Thirikadugu Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Arumuga Chenduram - 200 - 100 mg with honey, BID, after food, for 24 - 48 days.

Kunthiriga thailam - Quantity sufficient (Ext), for 48 days.

Aavarai Ulunthu pattru – for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below.

Followup and duration:

Patients will be followed up weekly and will be treated upto 3 months depending upon the symptoms.

Referral Criteria:

- Cases in which the aforementioned treatment is ineffective or ineffectively effective, which result in worsening of symptoms.

- Patients with a variety of untreated co-morbidities who need rapid therapeutic intervention from traditional medicine.

At Level 2 (CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray**)**

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh one, must be evaluated thoroughly for complications.

Investigations: The diagnosis would be primarily clinical. However, some investigations may be necessary to investigate complications or exclude other differential diagnoses as follows:

- Haemogram
- X-ray
- Magnetic resonance imaging
- C-reactive protein

Management: Same as Level - 1

Other procedures:

Physiotherapy Management:[1]

- **Transcutaneous electrical nerve stimulation (TENS):** A 'TENS' unit is a therapeutic modality involving skin surface electrodes which deliver electrical stimulation to peripheral nerves in an effort to relieve pain noninvasively.
- **Lumbar supports:** Lumbar back supports may provide benefit to patients suffering chronic LBP secondary to degenerative processes through several potential, debated mechanisms. Supports are designed to limit spine motion, stabilize, correct deformity, and reduce mechanical forces. They may further have effects by massaging painful areas and applying beneficial heat.
- **Traction:** Lumbar traction applies a longitudinal force to the axial spine through use of a harness attached to the iliac crest and lower rib cage to relieve chronic low back pain. The forces, which open intervertebral space and decrease spine lordosis, are adjusted both with regard to level and duration and may closely be measured in motorized and bed rest devices.
- **Spine manipulation:** Spine manipulation is a manual therapy approach involving low-velocity, long lever manipulation of a joint beyond the accustomed, but not anatomical range of motion.
- **Massage therapy:** Massage therapy for chronic LBP appears to provide some beneficial relief.

Recommended diet and Lifestyle: Same as Level 1

Follow Up: (every 15 days or earlier as per the need)

Referral Criteria:

- Same as mentioned earlier at level 1, Plus
- When the initial medical treatment does not produce improvement during an acute exacerbation.
- Advanced stages of disease like lateral or central disc herniation etc.

At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1: Ennai Muzhukku (Oleation)

- Seeraga Thailam - Sufficient quantity
- Santhanathi Thailam - Sufficient quantity

(Any one oil may be used)

Day 2: Kazhichal Maruthuvam (Purgation)

- Meganatha kuligai (65 - 130 mg) - 1- 2 pills with warm water at early morning in empty stomach.

Day 3: Rest

Day 4: Internal medicines

Churanam:

- Amukkara Churanam - 1- 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Pancha deepakini Churanam - 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Lavangathi Churanam -1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days.

(Any one or two Churanam(s) may be administered)

Parpam:

- Muthuchippi Parpam - 200 - 400 mg with ghee/ butter, BID, after food for 48 days.
- Sangu Parpam - 200 - 400 mg with butter/ghee, BID, after food for 48 days.

Chenduram:

- *Ayaveera Chenduram -100 - 200 mg with honey, BID,after food for 48 days*
- Linga Chenduram -50-100 mg with palm jaggery/honey, BID,after food for 48 days

- Thamira (Sembu) parpam 30 mg with ghee BID after food for 5 days (when radiculopathy is presented) for 48 days.

(Any one Parpam and one Chenduram may be administered)

Mathirai:

- Karuppu vishnu chakkaram Mathirai - 1-2 pills with ginger juice *(Zingiber officinalis)* , Honey, BID, after food for 24 days
- Vishnu chakkaram Mathirai - 1- 2 pills with ginger juice *(Zingiber officinalis)* , Honey, BID, after food for 24 days.
- Pachaikarpoora Mathirai (65 mg) - 1-2 pills with ginger juice (Zingiber officinalis), BID, after food for 24 days.

(Any one mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Amukkara Ilagam - 3 - 5 gm with warm milk , BID, after food for 48 days.
- Thetrankottai Ilagam - 3 - 5 gm with warm milk, BID, after food for 48 days.

(Any one Ilagam may be administered)

Nei:

- Senkottai Nei - 5 - 15 ml with warm water/ warm milk, BID, after food for 48 days.
- Chitramutti Nei - 5 - 15 ml with warm water/ warm milk, BID after food for 48 days.

(Any one Nei may be administered)

Mezhugu:

- Panchalavana mezhugu - 3 - 5 gm with warm water / milk for 3 to 5 days
- Sitranda mezhugu – 250 - 500 mg with honey, BID, after food for 3 to 5 days
- Malakudara mezhugu - 3 - 5 gm with warm water / milk for 3 to 5 days

(Any one mezhugu may be administered either before or after the course of administration of Chenduram)

Thailam:

- Vatha ennai - 1 to 3 ml with seeraga kudineer (*Cuminum cyminum*), BID, after food for 48 days.

External Medicine:

Poochu (Liquid/Oil Poultice):

- Kayathirumeni Thailam– Quantity sufficient
- Vadhakesari Thailam– Quantity sufficient
- Arkkathi thailam – Quantity sufficient

(Any one or two oils may be used)

External Therapies: (All for 48 days or as per the discretion of the physician)

Ottradam (Fomentation)

- Vathanarayanan Ilai (*Delonix elata)*
- Erukku ilai *(Calotropis gigantea)*
- Mudakaruthan Ilai (*Cardiospermum halicacabum)*
- Manjanathi Ilai (*Morinda pubescens)*
- Thazhudhazhai Ilai *(Clerodendrum phlomidis*)
- Notchi ilai (*Vitex negundo*)

(Some of the above leaves may be used as per availability)

Pattru (Semi-Solid Poultice):

- Avarai Ulunthu pattru (*Cassia auriculata* with *Vigna mungo*)
- Moosambara pattru (*Aloe barbadensis)*
- Murungai (*Moringa oleifera*)
- Amanakku (*Ricinus communis*)
- Nuna ilai (Morinda tinctoria)

(Any one Pattru may be used)

Patti kattal (Oil Bandaging):

Medicated oil may be heated, applied on the affected area and wrapped with sterile cotton gauze piece, then irrigated with oil once in a while. It is advised for 3-5 days depending upon the severity of the symptoms.

Peechu (Enemata):

Medicated oil is made warm amd injected per rectum using enema syringe. This therapy is advised to balance the vitiated vatha humor. It is advised for 5-7 days depending upon the severity of the symptoms.

Puravalaiyam (Oil damming):

Batter made of Ulunthu/Wheat is rolled into a rim and it is fixed firmly on the low back (lumbo-sacral) region with medicated oil was heated passively with double boiling method and poured in the rims of the dough to avoid the unexpected discomfort due to heated oil. When oil cools down, the oil should be removed using cotton, warmed up again and should be refilled. Temperature of oil should be maintained uniformly throughout the procedure by replacing it with warm oil. The therapy is advised for 5-7 days depending upon the symptoms for 20-45 minutes.

Level- II

Model prescription

Day 1- Seeraga Thailam- Quantity sufficient - Ennai muzhukku (Oleation).
Day 2- Meganatha Kuligai (65 - 130 mg) - 1- 2 pills with warm water at early morning in empty stomach (Purgation)
Day 3- Rest
From Day 4-
Amukkara Churanam - 1-3 gm with milk, BID, after food, for 24 - 48 days.
Muthuchippi Parpam - 200 - 400 mg with ghee, BID, after food, for 24 - 48 days.
Karuppu vishnu chakkaram Mathirai - 1-2 pills with ginger juice *(Zingiber officinalis)* Honey, BID, after food,for 24 - 48 days.
Chitramutti Nei - 5 - 15 ml with warm water/ warm milk, BID after food,for 7 - 14 days.
Thetrankottai Ilagam - 3 - 5 gm with warm milk, BID, after food, for 24- 48days
Kayathirumeni Thailam / Arkkathi thailam - Quantity sufficient (Ext), for 48 days.
External application for 60 days (Leaves paste)

- Murungai (*Moringa oleifera*)
- Amanakku (*Ricinus communis*)
- Nuna ilai (Morinda tinctoria)

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms.

- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus, hypertension etc .

At Level 3 (Ayush hospitals attached to teaching institutions, District Level/Integrated/ State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities), multiple departments/facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counselling, and physiotherapy unit.

Clinical Diagnosis: Same as levels 1& 2.

Confirm diagnosis and severity with the help of investigations like magnetic resonance imaging.

Management: Same as levels 1& 2.

In addition to level 1 and level 2 management strategies, homoeopathy offers some uncommonly prescribed medicines to alleviate pain and other symptoms in patients with end-stage In those who haven't responded to treatment due to various reasons such as the absence of symptoms, coexisting medical conditions, or the use of other medications like immunosuppressive, oral hypoglycemic agents, or antihypertensive, medications can be prescribed as a part of supportive management based on the sphere of action or keynote prescription for these conditions and other advanced pathological states. As part of an integrative approach to therapy, complementary treatments like massage, cupping, acupressure, and acupuncture may also be used simultaneously to reduce pain and enhance flexibility.

Recommended diet and Lifestyle: Same as levels 1 & 2

Restricted Lifestyle: Same as levels 1& 2

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 2, plus
- Other modalities can be considered depending on the case and to rehabilitate properly.

At Level 3

In addition to level 1& 2 management the following will be exclusively used in level 3

Line of Treatment:

Day 1: Ennai Muzhukku: (Oil bath - oleation)

- Chukku Thailam - Sufficient quantity
- Arakku Thailam - Sufficient quantity

(Any one oil may be used)

Day 2: Kazhichal Maruthuvam: (Purgation)

- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice *(Zingiber officinalis)* at early morning in empty stomach.
- Murukkan vithai Mathirai - 1- 2 pills with warm water.

(Any one medicine may be used)

Day 3: Rest

Day 4: Internal Medicines:

Churanam:

- Inji Churanam -1- 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Amukkara Churanam - 1- 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Elathy Churanam - 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Sarvaanga vatha Churanam - 1-3 gm with lukewarm water,BID,after food for 48 days
- Parangipattai Churanam - 1-3 gm with milk /honey/warm water,BID,after food for 48 days.

(Any one or two Churanam(s) may be administered)

Parpam:

- Paal karudakkal Parpam - 100 - 200 mg with milk/ ghee, BID, after food for 48 days
- Palagarai Parpam - 100 - 200 mg with milk/ ghee, BID, after food for 48 days
- Velli Parpam - 50-100 mg with butter/ghee, BID, after food for 7 days
- Thamira (Sembu) Parpam - 30 mg with ghee / butter BID after food for 5 days

Chenduram:

- Chanda marutham Chenduram - 50 - 100 mg with honey/ ginger *(Zingiber officinalis)* juice/ palm jaggery/ Thirikadugu churanam, BID for 5 days.
- Poorana Chandrodhayam - 50 - 100mg with honey/ Karpoorathy churanam for 3 days.
- Ayakandha Chenduram -100-200 mg with honey, BID,after food for 48 days.

(Either one Parpam and / or one Chenduram may be administered for 15 days or otherwise specified and as per the discretion of the physician)

Mathirai:

- Vatharatchasan Mathirai - 1-2 pills with ginger juice *(Zingiber officinalis)*, Honey, BID, after food for 24 days
- Soolai boobathi Mathirai - 1- 2 pills with ginger juice *(Zingiber officinalis)*, Honey, BID, after food for 24 days
- Soolai kudoram Mathirai - 1- 2 pills with ginger juice *(Zingiber officinalis)*, Honey, BID, after food for 24 days

(Any one mathirai may be used especially if no Chenduram is administered)

Nei:

- Senkottai Nei - 5- 15 ml with warm milk, BID, after food for 48 days
- Chitramutti Nei - 5- 15 ml with warm water, warm milk, BID after food for 48 days

(Any one Nei may be used)

Ilagam:

- Maha vallathagi Ilagam - 3 - 5 gm with warm milk, BID, after food for 48 days

Mezhugu:

- Rasagandhi mezhugu – 250-500 mg with palm jaggery, BID, after food 3 to 5 days
- Idivallathi mezhugu - 250-500 mg with palm jaggery, BID, after food 3 to 5 days
- Vaan mezhugu - 65 mg with palm jaggery, BID, after food 3 to 5 days
- Kanagalinga Mezhugu 130 mg with Palm jaggery BID after food 3 to 5 days

(Any one mezhugu may be administered either before or after the course of administration of Chenduram)

Ennai:

- Vatha ennai - 1 to 3 ml with seeraga kudineer (*Cuminum cyminum*), BID, after food for 48 days.
- Kayarajangam ennai - 10 -15 ml with lukewarm water ,BID,after food for 5 days
- Kayasarvaanga ennai - 10 -15 ml with lukewarm water ,BID,after food for 5 days
- Soolaikudora ennai - 10 -15 ml with lukewarm water ,OD,Early morning 3 days.

(Any one Ennai may be administered)

External Medicine:

Poochu (Liquid/Oil Poultice):

- Kayathirumeni Thailam– Quantity sufficient
- Vadhakesari Thailam – Quantity sufficient
- Laguvidamutti Thailam - Quantity sufficient
- Arkkathi thailam - Quantity sufficient

(Any one or two oils may be used)

External Therapies:

Suttigai (Cautery):

- Manjal kombu (Rhizome of Curcuma longa)
- Uloga Suttigai (Metal Cauterization)

Peechu (Enemata):

Medicated oil is made warm amd injected per rectum using enema syringe. This therapy is advised to balance the vitiated vatha humor. It is advised for 5-7 days depending upon the severity of the symptoms.

Puravalaiyam (Oil damming):

Batter made of Ulunthu/Wheat is rolled into a rim and it is fixed firmly on the low back (lumbo-sacral) region with medicated oil was heated passively with double boiling method and poured in the rims of the dough to avoid the unexpected discomfort due to heated oil. When oil cools down, the oil should be removed using cotton, warmed up again and should be refilled. Temperature of oil should be maintained uniformly throughout the procedure by replacing it with warm oil. The therapy is advised for 5-7 days depending upon the symptoms for 20- 45 minutes.

Navara kizhi (Rice fomentation bundle):

The rice is boiled with roots of Chitramutti (Sida acuta) along with milk and water which is mashed with banana fruits and packed as fomentation bundle. The bundle is dipped in warm milk drained from the cooked rice. The therapy is advised for 7 days depending upon the symptoms for 20- 45 minutes.

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management .

Level- III

Model prescription

Day 1- Chukku thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice *(Zingiber officinalis)* at early morning in empty stomach (Purgation)

Day 3- Rest

From Day 4-

Sarvaanga vatha Churanam - 1-3 gm with milk, BID, after food, for 24 - 48 days.

Palagarai Parpam - 100 - 200 mg with ghee, BID, after food, for 24 - 48 days.

Chanda marutham Chenduram - 50 - 100 mg with honey/ ginger *(Zingiber officinalis)* juice/ palm jaggery/ thirikadugu Churanam, BID for 5 days (or)

Thamira (Sembu) Parpam - 30 mg with ghee / butter BID after food for 5 days **(in radiculopathy conditions)** (or)

Idivallathi mezhugu - 250-500 mg with palm jaggery, BID, after food,for 7- 14 days

Kayarajanga ennai - 10 -15 ml with lukewarm water ,BID,after food,for 5 days.

Vadhakesari Thailam- Quantity sufficient (Ext), for 24 - 48 days.

External application for 60 days (Leaves paste)

- Murungai (*Moringa oleifera*)
- Amanakku (*Ricinus communis*)
- Nuna ilai (Morinda tinctoria)

If the pain persists after 8 days, external therapies are advised in the following manner along with internal medications

- Peechu for 5-7 days
- Puravalaiyam for 5-7 days
- Navara kizhi for 7 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Referral criteria:

- Patients with severe pain and with indications for surgical intervention to manage lumbar spondylosis.
- Patients who require immediate attention at higher centers because their co-morbidities cannot be handled in the Level 3 setting.

8. Prevention Management

Recommended and restricted diet and Lifestyle (Pathiyam)

TABLE 1:

1.	**Salt**	1.Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1.Kodam puli *(Garcinia cambogia)*
3.	**Oil**	1.Nallennai *(Gingelly oil)* 2.Kadalennai *(Groundnut oil)*
4.	**Dairy products**	1.Cow & Goat (Milk & Ghee) 2.Butter milk
5.	**Sugar**	1.Panai vellam (Palm jaggery) 2.Naatu sarkarai 3.Karupatti
6.	**Spices**	1.Vendhayam *(Trigonella foenum)* 2.Lavanga pattai (*Cinnamom verum)* 3.Milagu *(Pepper nigrum)* 4.Elam *(Elettaria cardamom)* 5.Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1.Ulunthu *(Vigno mungo)*
8.	**Millets**	1.Ragi *(Eleusine coracana)* 2.Varagu *(Paspalum scrobiculatum)* 3.Thinai *(Setaria italica)* 4.Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varieties)**	1.Mani samba 2.Seeraga samba 3.Kai kuthal arisi 4.Puzhungal arisi
10.	**Greens**	1.Manli keerai *(Giseka pharnaceoides)* 2.Vallai keerai *(Convolvulus repens)* 3.Kothamalli keerai *(Coriandrum sativum)*
11.	**Vegetables**	1.Kathiri pinju *(Solanum melongena)* 2.Avarai pinju *(Lablab purpureus)* 3.Murungai pinju (*Moringa oleifera)* 4.Avarai pinju(*Dolichos lablab)*
12.	**Tubers**	1.Mullangi *(Rhaphanus sativus)* 2.Karunai *(Amorphophallus paeoniifolius)* 3.Koogai (*Maranta arundinacea)*
13.	**Non -Veg**	1.Velladu(*Goat*) 2.Kaadai (*quail)* 3.Kaanan kozhi (*White breasted waterhen)*

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
Karungali *Acacia catechu* (Root)	Ulunthu kali *(Vigna mungo)*	Irumurai vaditha kanji	Varagu satham *(Paspalum scrobiculatum)*	Naarathai (*Citrus medica*)	Sundai vatral (*Solanum xanthocarpum*)	Murungai keerai soup (*Moringa oleifera*)
		Arisi vaditha sudu kanji	Thinai satham *(Setaria italica)*	Kalakkai (*Carissa carandas*)	Thoothuvalai vatral (*Solanum trilobatum*)	Mudavaatu kaal (*Drynaria quercifolia*)
		Koogai mavu kanji *(Maranta arundinacea)*	Saamai satham *(Panicum sumatrense)*		Nelli vatral (*Phyllanthus emblica*)	
		Venthaya kanji (*Trigonella foenum)*			Aathondai vatral (*Capparis zylanica*)	
		Raagi kanji *(Eleusine coracana)*			Manathakkali (*Solanum torvum*)	
		Chukku mudi kanji (Zingiber officinale)			Pirandai vatral (*Cissus quadrangularis*)	

Table 3

Restricted Diet

- Vatham-inducing foods like root tubers except karunai kizhangu
- Maa porutkal (Carbohydrates-rich diet)
- Vaazhai (tender fruit of Musa paradisiaca)
- Urulai Kizhangu (Solanum tuberosum)
- Senai Kizhangu (Amorphophallus paeoniifolius)
- Vaer kadalai (Arachis hypogea)
- Pattani (Pisum sativum)
- Mochai (Vicia faba)
- Sour and astringent foods

- Sea foods except small prawns
- Smoking, tobacco chewing and alcohol
- Prolonged standing and sitting

b. Yoga

Siddhar Yoga Maruthuvam:

- Tadasanam
- Halasanam
- Puyangasanam
- Dhanurasanam
- Patchimothasanam
- Egapaadhasanam
- Savasanam

Referral Criteria:

- Osteoporotic fractures
- Spinal stenosis
- Traumatic fractures
- Osteomyelitis
- Septic discitis
- Paraspinal abscess
- Epidural abscess
- Metastatic carcinoma
- Primary vertebral tumors

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5 FIBROMYALGIA

5
FIBROMYALGIA

Vatha Soolai

NAMASTE Code : ZAA1.1

WHO ISMT Code : ISMT-4.24.50

Fibromyalgia

ICD-10 code M79.7

ICD-11 code MG30.01

CASE DEFINITION

Fibromyalgia (FM) is a syndrome characterized by chronic widespread pain (CWP) of musculoskeletal origin and tenderness without any specific underlying organic disease. Although FM is defined primarily as a pain syndrome, patients also commonly complain of associated neuropsychological symptoms such as fatigue, unrefreshing sleep, cognitive dysfunction, anxiety, and depression.[1,2]

Vatha soolai is a painful condition that includes the features manifested due to vitiation of Vatham which is characterized by pain, swelling, stiffness in the extremities, excessive sleep, rigor and glistening of skin. The body becomes taut like a bowstring accompanied by a gnawing painful sensation[3].

INTRODUCTION *(INCIDENCE/PREVALENCE, MORBIDITY/MORTALITY)*

Vathasoolai includes the painful condition " Fibromyalgia" which is caused primarily due to vitiation of Vatham. It is one among the fifteen types of Soolai that is a condition characterized by chronic widespread musculoskeletal pain, numbness, excessive sleep, hypothermia, heftiness of the body with a glossy appearance, fatigue, cognitive disturbance, dysuria and multiple somatic symptoms often accompanying it. The exact etiology and pathophysiology of Fibromyalgia per se is unknown and there is no evidence of tissue inflammation despite soft tissue pain[3]. The diet which induces Vatha humor may trigger or exaggerate the symptoms of this disease.

The prevalence of Fibromyalgia (FM) in the general population varies between 2% and 8%[4,5] In India, it is estimated to be 0.05% (Rural-3.77% and urban-1.7%).[6]

- The disease has a female: male ratio of 2:1, similar to other chronic pain conditions.[4,5]
- Age of onset is typically between 20 and 60 years, with an average age of 35 years. Prevalence increases with age and the risk also appears greater in women.[7]

DIAGNOSTIC CRITERIA [7,8]

Fibromyalgia is a chronic pain syndrome diagnosed by the presence of widespread body pain (front and back, right, and left, both sides of the diaphragm) for at least 3 months in addition to tenderness (digital palpation at an approximate force of 4 kg) of at least 11 out of 18 designated tender point sites as defined by the American College of Rheumatology 1990 classification criteria.

However, the newer 2016 ACR diagnostic criteria define FM as a CWP condition associated with a patient satisfying the following diagnostic criteria:

1) Widespread pain index (WPI) > or =7 and symptom severity (SS) scale score > or =5 or WPI 4–6 and SS scale score > or =9. (Tables 1 and 2)

Table 1: The WPI scoring index is as per the 5 areas and 19 points to identify pain:

*Left upper region	*Right upper region	*Axial region	*Left lower region	*Right lower region
L jaw	R jaw	Neck	L Hip (buttock/ trochanter)	R Hip (buttock/ trochanter)
L Shoulder girdle	R Shoulder girdle	Upper back	L upper leg	R upper leg
L Upper arm	R Upper arm	Lower back	L lower leg	R lower leg
L Lower arm	R Lower arm	Chest		
		Abdomen		

*Total score will be between 1-19. Each point is scored as 1.

Table 2: Symptom Severity Index is as below:

Fatigue	Waking unrefreshed	Cognitive symptoms
0 = No problem	0 = No problem	0 = No problem
1 = Slight or mild problems; Generally mild or intermittent	1 = Slight or mild problems; Generally mild or intermittent	1 = Slight or mild problems; Generally mild or intermittent
2 = Moderate; considerable Problems; often present and/or at a moderate level	2 = Moderate; considerable Problems; often present and/or at a moderate level	2 = Moderate; considerable Problems; often present and/or at a moderate level
3 = severe: pervasive, continuous, Life disturbing problems	3 = severe: pervasive, continuous, Life disturbing problems	3 = severe: pervasive, continuous, Life disturbing problems

2) Generalized pain: pain in 4/5 regions.

3) Symptoms have been present > or = 3 months.

4) The fibromyalgia diagnosis can now be made irrespective of other diagnoses (no need to rule out all other conditions that could explain the symptoms, if criteria 1-3 are all met).

CLINICAL PRESENTATION [1]

Pain and tenderness: Patient commonly report "pain all over" which is poorly localized, difficult to ignore, severe in its intensity, & associated with a reduced functional capacity (see figure 1).

Neuropsychological symptoms: In addition to widespread pain, fatigue, stiffness, sleep disturbance, cognitive dysfunction, anxiety, and depression.

Overlapping syndromes: Headaches, facial/jaw pain, regional myofascial pain particularly involving the neck or back, and arthritis.

Co-morbid conditions: FM is often co-morbid with chronic musculoskeletal, infectious, metabolic or psychiatric conditions.

Psychosocial considerations: Symptoms often have their onset and are exacerbated during periods of high-level real or perceived stress.

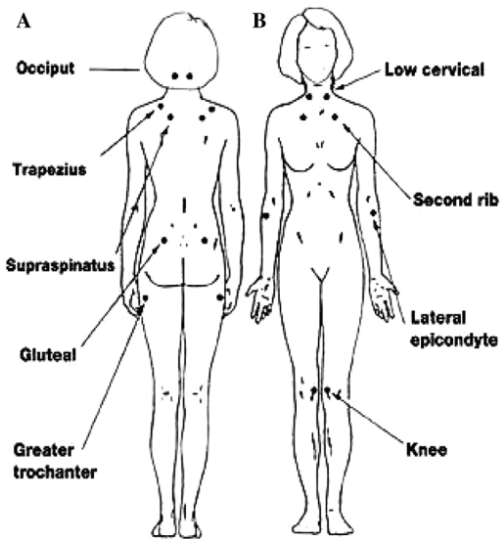


Figure 1: Tender points assessment in patients with fibromyalgia [4]

Functional impairment: Functional assessment should include physical, mental and social domains.

Many assessment tools are widely used for the diagnosis and evaluation of improvement of FM and the core symptom domain in the process of the treatment [5,9]

SUPPORTIVE INVESTIGATIONS [7]

Essential:

There is no x-ray or laboratory test for fibromyalgia; the diagnosis is strictly a clinical one.

Advanced:

If the patient does not meet clinical criteria for a diagnosis of fibromyalgia, then the following tests can be done for further evaluation:

- CBC and ESR
- TFT
- CRP
- Vitamin D levels
- Rheumatoid factor (RF)
- Anti-cyclic citrullinated protein antibody (anti-CCP antibody)

- ANA may be obtained if patients have a history suggestive of an inflammatory disorder.

Note: - The positive results of the above-mentioned investigations do not rule out fibromyalgia, if the patient meets the clinical criteria/diagnostic criteria for fibromyalgia. Instead, a positive test would indicate that another disorder is also present.

Siddha Envagai Thervu (Eight-Fold System of Clinical Assessment):

Naadi - Vathapitham / Vathakabam

Sparisam - Warmth / painful

Naa - Coated / Normal

Niram - Normal / pallor

Mozhi - Low-pitched / Normal

Vizhi - Normal

Malam - Normal / constipation

Neer:-

(i) Neerkuri - Yellowish /Reddish in colour

(ii) Neikuri - Oil in the urine may spreads in the vatham pattern

DIFFERENTIAL DIAGNOSIS [7]

Several disease conditions cause pain, muscle aches, and fatigue just like FM as below:

Disease	Features not present in fibromyalgia	Pitfalls in diagnosis
Rheumatoid arthritis	Joint swelling, elevated ESR and CRP	"False positive" rheumatoid factor in FM occasionally
Systemic lupus erythematosus	Rash and renal, cardiac, pulmonary, and neurologic features	"False positive" antinuclear antibody in some with FM and many symptoms
Polymyalgia rheumatica	Severe stiffness in the morning and when sedentary, elevated ESR and CRP, usual onset >60 years, rapid response to glucocorticoids	Like FM, often no abnormal physical findings in polymyalgia rheumatica
Polymyositis	Muscle weakness, elevated muscle enzymes, abnormal EMG/NCV	FM patients often feel weak (but have normal strength)
Spondyloarthritis	Restricted spinal motion, elevated ESR or CRP	May be no peripheral joint abnormality in spondyloarthritis
Lyme disease	Characteristic rash, joint swelling, serologic tests confirmatory	"Post-Lyme" FM symptoms, false positive serologic tests, early flu-like symptoms

Disease	Features not present in fibromyalgia	Pitfalls in diagnosis
Hypothyroidism	Abnormal thyroid function tests, pain not prominent	Hypothyroidism may present with a myopathy/mild myalgia
Neuropathy	Sensory or motor deficits, abnormal EMG/NCV	Subtle neurologic disorders, small fiber neuropathy in some with FM

ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; FM: fibromyalgia; EMG: electromyogram; NCV: nerve conduction velocity.

PRINCIPLES OF MANAGEMENT[10]

Red Flag Signs of Fibromyalgia:

These signs should be assessed before initiating treatment for need for management through modern medicine

- Widespread pain
- Hypersensitivity to touch
- Muscle cramps
- Joint and muscle stiffness
- Persistent headaches or migraines
- Gastrointestinal (GI) disorders
- Elevated reaction to sensory triggers
- Severe fatigue and weakness
- Fibro fog
- Depression and anxiety disorders

As in other chronic conditions requiring ongoing management, education plays an essential role in fibromyalgia management and can be integrated into a treatment plan after diagnosis and continued throughout follow-up. Confirming the diagnosis and describing its clinical picture can positively impact patients with fibromyalgia, giving them validation and reassurance. It must be emphasized that FM is not a life-threatening disease and to be advised to continue an active lifestyle. Because widespread pain and tenderness, along with associated symptoms such as fatigue, sleep disturbance, cognitive difficulties, and mood disturbances, are characteristics of fibromyalgia, a multi-disciplinary treatment approach must be considered for a treatment plan [10]. Thus, a comprehensive multidisciplinary modal treatment plan (MMTP) is recommended, integrating (1) education to patients, (2) Intervention, and (3) non-pharmacological therapie[s 11].

Education of the patient: Patient education is an integral part of the treatment of FM. It should include the cause, course, and treatment information along with assurance. A one-time education is not sufficient, and the patient should periodically be given continuous

education and reassurance in the follow-up visits regularly with a systematic approach. The focus should be on providing the right information and removing any myths and fears about the disease.[12]

(A) Prevention management[13]

Fibromyalgia is one of the most significant causes of chronic widespread musculoskeletal pain, heavily burdening both individual patients and the healthcare system. Hence, reducing the prevalence of the disorder is of paramount importance. There are numerous risk markers that are associated with an increased probability of the disease, such as obesity, psychological and physical stress, exposure to traumatic life events, and psychiatric disorders. Targeting preventable risk factors may suppress consequent emergence of fibromyalgia such as maintenance of a normal body mass index, regular physical exercise, and psychological techniques such as cognitive behavioral therapy.

(B) Interventions

At Level 1

Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited).

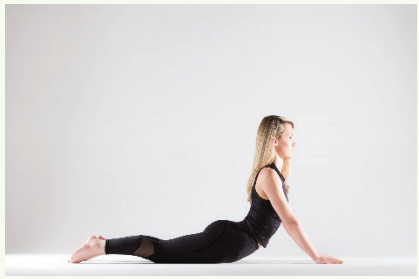
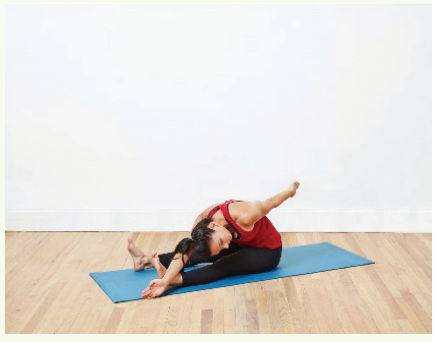
Clinical Diagnosis:

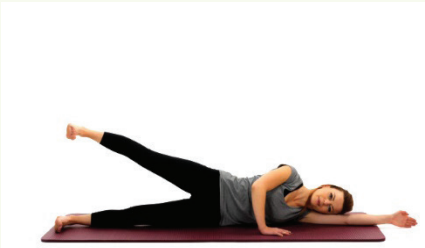
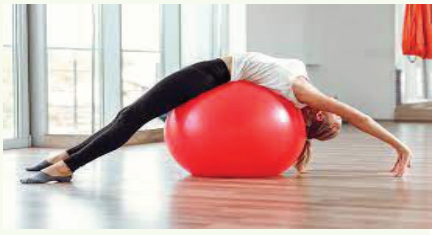
Diagnosis of FM is primarily clinical and made after a complete medical history and physical examination. However, some investigations, like a complete hemogram and X-ray, may be done to exclude the condition.

Recommended Diet and Lifestyle [25-28]:

The physicians may advice the patients as follows:

- High consumption of vegetables, fruits, vegetable/olive oils and nuts, and low consumption of red meats.
- To consume a gluten-free diet.
- To intake low carbohydrate and high protein diets that seems to alleviate pain.
- Yoga therapy primarily focuses on strengthening the muscles and stress relief through yoga practices. The patient when given special yoga postures under the supervision of trained yoga therapist improves the flexibility and movement of joints. Various practices that help are *Mountain pose (Vrikshasana), Standing forward asana (Uttanasana), Cat cow asana (Marjaryasana, Bitilasana), Child pose (Balasana)* increase the flexibility of the muscles and joints to free the movement and also corpse pose (Yoga nidra and meditation) help to calm the soul and improve sleep along with improved cognitive functioning.[25,26]
- Aerobic exercises such as swimming, running, walking, and stretching exercises along with Mat Pilates group exercises are found to be beneficial and are given below: [28,29]

S.no.	Exercise	Benefit	Posture
1.	**Swan** Lying on prone position, hands resting in the direction of the shoulders. Extend the elbows, keeping head aligned with the spine, stretching the trunk. Return back.	Strengthens the pectoral, triceps and anterior deltoid muscles	
2.	**One leg up-down** Lying on supine position, arms outstretched along the body. Raise the leg in extension with the feet in plantar flexion.	Strengthens the rectus femoris, iliopsoas and sartorius muscles	
3.	**Leg circles** Lying in the supine position, arms outstretched alongside the body and supported on the ground. Raise the leg in extension, with the feet in plantar flexion. Make circles with the leg.	Strengthens the rectus femoris, sartorius, adductor and gluteus medius muscles.	
4.	**Single leg stretch** Lying in the supine position, flex the right leg by placing the left hand on the right knee and the right hand on the right ankle, flexing as much as possible towards the chest. The left leg will be extended at an angle of 30°. Slowly switch the leg	Strengthens the abdomen and stretches the glutes and the lumbar spine.	
5.	**Saw** Sitting with the back straight and the legs apart at hip width, and the arms extended and apart at shoulder height. Slowly from the waist, twist the spine to the left. Move the right arm towards the left foot and the left arm back at shoulder height. Return to the initial position and switch sides.	Stretches the trunk rotators, the hamstrings and the quadratus lumborum muscles. Strengthens the rectus abdominis, external and internal oblique muscles.	

S.no.	Exercise	Benefit	Posture
6.	**Sidekicks front & back:** Lying straight in lateral decubitus, arm flexed and hand resting under the head. Keep your upper leg aligned with the hips and slowly bring the extended leg forward. Return to the initial position	Strengthens the rectus femoris, iliopsoas, sartorius, gluteus medius, gluteus maximus and abdominal muscles in isometry.	
7.	**The Hundred** Lying in the supine position, elbow extended with the shoulder, hips and knees at 90°. Knee extension at approximately 45°. Slight bending of the trunk (removing the shoulder blades from the mat) and chin towards the chest. 3. Return to the initial position	Strengthens the abdominal, oblique, transverse and rectus femoris muscles.	
8.	**Pelvic lift on the ball** Lying in the supine position, legs flexed at 90°, with heels on the ball. Raise the hips from the mat, extending the legs. Return to the initial position.	Strengthens the gluteus maximus, biceps femoris, semitendinosus, semimembranosus, gastrocnemius, and quadriceps femoris muscles. Mobilises the spine.	
9.	**Sits up on the ball** Lying in the supine position holding the ball over the head and legs at 45°. Bring the ball towards the legs and hold it. Return to the initial position.	Strengthens rectus abdominis and external oblique muscles.	
10.	**Stretching on the ball** Lying in lateral, ventral and dorsal decubitus on the ball.	Stretching and muscle relaxation.	

Restricted Diet and Lifestyle: [27]

- Red meat consumption needs to be restricted.
- Avoid consumption of food additives.
- Avoid consumption of tinned and processed foods.

- Avoid consumption of genetically modified foods.
- Avoid severe exercises during episodes of pain.

Follow Up (every 15 days or earlier as per the need)

Reviews [30,31] should include:

- Monitoring the person's symptoms and the ongoing impact of the condition on their everyday activities and quality of life.
- Monitoring the long-term course of the condition.
- Management of FM in terms of yoga.
- Discussing the person's knowledge of the condition, any concerns they have, their personal preferences, and their ability to access services.
- Reviewing the effectiveness and tolerability of ongoing treatment and if the patient is improving, continue treatment and if not, review the totality for further prescription.
- Self-management support.

Referral Criteria

- Non responsiveness to treatment
- Evidence of an increase in severity/complications
- Substantial impact on their quality of life and activities of daily living
- Diagnostic uncertainty
- Uncontrolled co-morbidities, such as diabetes, hypertension or associated cardiac disease.

(Choice of medicines, doses and duration may be altered according to the condition of the patients and severity of the disease)

At Level 1

Siddha Line of Treatment[33-40]

Day 1 - Ennai muzhukku (Oil bath - Oleation)

Oleation is the practice of massaging the head with medicated oils. It is recommended to give strength to five sense organs (Panchaendrinyangal). Patients, elderly persons, children, and those who are taking oil bath should bath only in lukewarm water. Futher depending upon the season, country and state of body health, water soaked with Mangifera indica, Emblica officinalis leaves or water mixed with aromatic powder or clear water may be used for bathing according to the circumstances. Vitiated Mukkutram should be corrected by an Oil bath with medicated oils.

Chukku Thailam - Quantity sufficient (For Ext. Use only)
Seeraga Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2 - Kazhichal Maruthuvam (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

Kazharchi Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

Merugulli Thailam - 10 -15 ml with lukewarm water at early morning in empty stomach.

(Anyone can be used)

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 3 – Rest

Day 4 - Internal Medicines:

Kudineer

(Kudineer should be prepared with 5 to 10gms of Kudineer Churanam by weight)

- Vatha Sura Kudineer - 30 - 60 ml, OD, before food for 24-48 days
- Araththai Kudineer - 30 - 60 ml, OD, before food for 24-48 days.

(Anyone Kudineer may be used)

Churanam:

Thirikadugu Churanam - 1-3 gm with honey, BID, after food for 48 days

Amukkara Churanam - 1-3 gm with milk, BID, after food for 48 days

Inji Churanam - 1-3 gm with milk, BID, after food for 48 days

Elathy Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days

Drakshathi Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days

Keezhanelli Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days

(Either one or two Churanam(s) may be used)

Parpam:

Sangu Parpam - 100 - 300 mg with ghee, BID, after food for 48 days

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food for 48 days

Silasathu Parpam - 100 - 300 mg with milk, BID, after food for 48 days

Thamira (Sembu) parpam - 30 mg with ghee after food, BID for 5 days

(For 48 days and the course may be repeated for maintenance therapy)
(Either one may be used).

Chenduram:

Arumuga Chenduram - 100 - 200 mg with honey, BID, after food for 7-14 days

Annabethi Chenduram - 100 -200 mg with honey, BID, after food for 7-14 days

Gowri chindamani Chenduram - 100 - 200 mg with honey, BID, after food for 7-14 days

(Either one Parpam and one Chenduram may be used)

External Medicines:

Poochu (Liquid / Oil Poultice):

Karpooradi Thailam - Quantity sufficient

Kunthiriga Thailam - Quantity sufficient

Arkkathi thailam - Quantity sufficient

Laguvidamutti thailam – Quantity sufficient

Vatha ennai - Quantity sufficient

(Any one or both oils may be used)

External Therapies:

Varma maruthuvam:

Pidari kaalam

Sevikutri varmam

Vilangu varmam

Kaikavuli varmam

Annakaalam

Kaal viruthi kaalam

Kuthikaal varmam

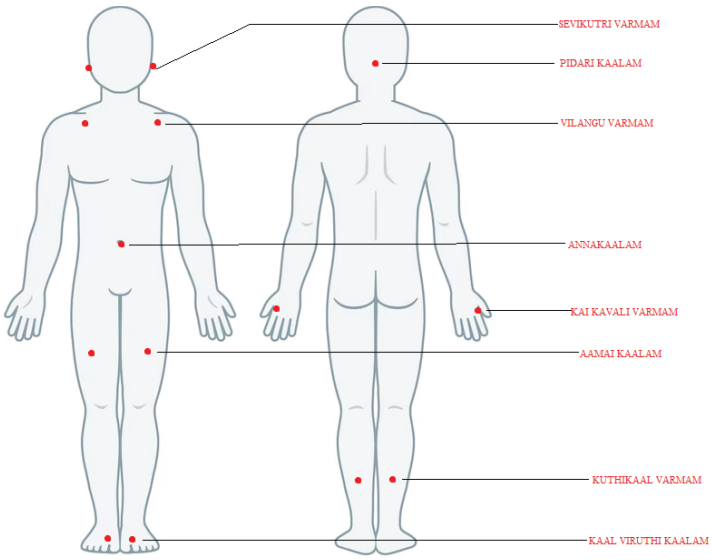
Aamai kaalam

Ullankaal vellai varmam

(All or Some of the Varmam Points may be stimulated depending upon the symptoms)

Rules to be followed in Varma maruthuvam:

- Varmam Maruthuvam should only be done by Siddha Physician.
- Physician performing VarmamMaruthuvam should be free from sharp nails.
- Avoid approaching Varmam pressure points with nails & sharp metallic instruments.
- The better posture of the patient for VarmamMaruthuvam is sitting/ lying, so that physician will have the direct contact with patient‟s eye.
- Varmam Maruthuvam can be done twice a week; in case of severity of the disease, treatment can be recommended daily.
- Varmam pressure points will vary according to the patient‟s age, thega ilakkanam(Body Constitution/ Biotype) and severity of disease condition.
- Based on the severity and condition of the disease, the Siddha physician can prescribe the medicines along with Varmam maruthuvam.
- Naadi of the patient has to be analysed prior to Varmam maruthuvam.
- A male physician to male patient and a female physician to a female patient are preferable
- Varmam maruthuvam should not be done during severe systemic illness, semen ejaculation, uncontrolled passage of urine, stools, etc.,
- Varmam treatment is not advised for pregnant women. If needed, shall be decided by the Varmam expert.
- Varmam treatment is not advised for patients under the influence of alcohol, bitten by Snakes/ scorpion.\



Level- I

Model prescription

Day 1- Chukku Thailam - Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Merugulli Thailam - 10-15 ml with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4-

Thirikadugu Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Arumuga Chenduram - 200 - 100 mg with honey, BID, after food, for 24 - 48 days.

Kunthiriga / Arkkathi Thailam - Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may vary depending upon the patients' condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below.

Follow up and duration:

Patients will be followed up weekly and will be treated upto 3 months depending upon the symptoms.

Referral Criteria:

- Cases in which the aforementioned treatment is ineffective or ineffectively effective, which result in worsening of symptoms.

- Patients with a variety of untreated co-morbidities who need rapid therapeutic intervention from traditional medicine.

At Level 2

CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray)

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh case must be evaluated thoroughly for any complications.

Investigations:

The diagnosis would be primarily clinical. However, some investigations may be necessary to investigate complications or exclude other differential diagnoses as follows:

- Haemogram
- X-ray
- Anti-CCP antibodies
- C-reactive protein
- Serum uric acid
- RA Factor
- ANA profile

Management: Same as Level 1 and in addition few other procedures may be helpful as given below:

- Physiotherapy including exercises, massage, transcutaneous electrical nerve stimulation (TENS), thermotherapy, and braces may be done as per the case's need under a physiotherapist's guidance.
- Cognitive Behavioural Therapy: Therapeutic activities to promote cognitive functioning thereby improving functional abilities with daily tasks such as self-care, home management, and work and leisure activities under the guidance of a clinical psychologist.

Recommended Diet and Lifestyle: Same as level 1

Restricted Diet and Lifestyle: Same as level 1

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 1 and in addition,
- Failure of acute pain exacerbations to respond to initial medical management.

At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1 - Ennai muzhukku (Oleation)

Santhanathi Thailam - Quantity sufficient (For Ext.use only)

Arakku thailam - Quantity sufficient (For Ext.use only)

(Any one oil may be used)

Day 2 - Kazhichal Maruthuvam (Purgation)

Vathanaasa Thailam- 15 - 30 ml with lukewarm water at early morning in empty stomach.

Agasthiyar kuzhambu - 100 - 200 mg with ginger juice (*Zingiber officinalis*) at early morning in empty stomach.

(Any one may be used)

Day 3: Rest

Day 4: Internal Medicines:

(The course of the treatment may be repeated for maintenance as per the discretion of the physician)

Kudineer

Vathasura Kudineer - 30 - 60 ml, OD, before food for 24-48 days.

Nilavembu Kudineer - 30 - 60 ml, OD, before food for 24-48 days.

Kurunthotti Kudineer - 30 - 60 ml, OD, before food for 24-48 days.

(Any one Kudineer may be used for 48 days)

Churanam:

Inji Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.

Nilavaagai Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.

Pirandai Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.

Seenthil Churanam - 1-3 gm with lukewarm water, BID, after food for 48 days.

(Any one or two Churanam(s) may be administered for 48 days)

Parpam:

Muthu Parpam - 60 - 120 mg with ghee, BID, after food for 48 days

Pavala Parpam - 65 - 200 mg with ghee, BID, after food for 48 days

Muthuchippi Parpam - 200 - 400 mg with milk/ ghee, BID, after food for 48 days

Thamira (Sembu) Parpam - 30mg with ghee BID for 5 days after food

Paal karudakal Parpam - 100 - 200 mg with milk/ ghee, BID, after food for 48 days

Chenduram:

Linga Chenduram - 100 - 200 mg with honey, BID, after food for 14 days

Velli Chenduram - 50 - 100 mg with honey, BID, after food for 7 days

Rasa Chenduram -100-200 mg with honey, BID, after food for 14 days.

(Either one Parpam and / or one Chenduram may be administered for 15 days or otherwise specified and as per the discretion of the physician)

Mathirai:

Pachai Karpoora mathirai - 1 - 2 nos with honey, BID, after food for 24 days

Soolai Kudaram mathirai - 1 - 2 nos with honey, BID, after food for 24 days.

(Any one mathirai may be used especially if no Chenduram is administered)

Nei:

- Thanneervittan Nei - 5-10 gm with milk, BID after food for 48 days.
- Chitramutti Nei - 5-10 gm with milk, BID after food for 48 days.

(Any one Nei may be used)

Ilagam:

- Mahavallathi ilagam - 5 - 10 gm with milk, BID after food for 48 days.
- Vilwathi ilagam - 3 - 5 gm with warm milk, BID after food for 48 days.

(Any one Ilagam may be administered)

Mezhugu:

Panchasootha Mezhugu - 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.

Nandhi Mezhugu- 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.

Kanagalinga Mezhugu 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.

(Any one mezhugu may be administered either before or after the course of administration of Chenduram)

External Medicines:

Poochu (Liquid / Oil Poultice):

Vatha kesari thailam - Quantity sufficient

Ulundhu thailam - Quantity sufficient

Vasavu ennai - Quantity sufficient

(Any one or two oils may be administered)

Ottradam (Fomentation):

Kazharchi leaves (Caesalpinia bonducella)

Thazhuthazhai (Clerodendrum phlomidis)

Notchi leaves (Vitex negundo)

Vathanarayanan leaves (Delonix elata)

Aamanakku leaves (Ricinus communis)

Vallarai leaves (Centella asiatica)

Mudakattran leaves (Cardiospermum halicacabum)

(Some of the above leaves may be used as per availability)

Level- II

Model prescription

Day 1- Santhanathi Thailam - Quantity sufficient - Ennai muzhukku (Oleation).

Day 2-Vathanaasa Thailam- 15 - 30 ml with lukewarm water at early morning in empty stomach (Purgation)

Day 3- Rest

From Day 4-

Pirandai Churanam - 1-3 gm with milk, BID, after food, for 24 - 48 days.

Muthuchippi Parpam - 200 - 400 mg with ghee, BID, after food, for 24 - 48 days.

Kanagalinga Mezhugu – 100mg with milk & Palm jaggery for 3-5 days or

Pachai Karpoora Mathirai - 1 - 2 nos with honey, BID, after food.for 24 - 48 days.

Chitramutti nei - 5 – 10g with warm water/ warm milk, BID after food,for 7 - 14 days.

Vilwathi Ilagam - 3 - 5 gm with warm milk, BID after food. for 24- 48days

Vatha kesari Thailam / Vasavu ennai - Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may vary depending upon the patient's condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms.
- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus, hypertension etc .

At Level 3

Ayush hospitals attached with teaching institutions, District level/Integrated/State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities, and multiple departments/ facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counseling, and physiotherapy units.

Clinical Diagnosis:

Same as levels 1& 2.

Management:

Same as levels 1 & 2.

Other non-pharmacological therapies

There are many therapies that can be given as an add-on to the pharmacotherapy to the FM patient. As part of integrative therapy, additional therapies including massage, cupping, acupressure, and acupuncture may also be utilized simultaneously to lessen pain and improve flexibility. A few of them are as follows:

i) Mindfulness – meditation to maintain proper sleep hygiene.

ii) Hydrotherapy – for pain reduction, research evidence shows a moderate effect of this therapy on FM patients. [32]

Recommended Diet and Lifestyle: Same as levels 1 & 2

Restricted Diet and Lifestyle: Same as levels 1 & 2

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

Same as mentioned earlier at levels 1 and 2.

At Level 3

In addition to level 1& 2 management the following will be exclusively used in level 3

Line of Treatment:

Day 1 - Ennai muzhukku (Oleation)

Chukku Thailam - Quantity sufficient (For Ext.use only)

Notchi Thailam - Quantity sufficient (For Ext.use only)

(Any one oil may be used)

Day 2 - Kazhichal Maruthuvam (Purgation)

Meganatha kuligai - 1 - 2 pills with ginger juice (*Zingiber officinalis*) at early morning in empty stomach.

Day 3 - Rest

Day 4 - Internal Medicines:

Churanam:

- Inji Churanam - 1-3 gm with Lukewarm water, BID, after food for 48 days
- Kazharchi Churanam - 1-3 gm with Lukewarm water, BID, after food for 48 days
- Mookirattai Churanam - 1-3 gm with Lukewarm water, BID, after food for 48 days
- Parangipattai Churanam - 1-3 gm with honey, BID, after food for 48 days
- Ashta Churanam - 1 - 3gm with lukewarm water, BID, after food for 48 days.
- Sagalanoi Choornam - 1-3 gm with honey, BID, after food for 48 days.

(Any one Churanam(s) may be administered)

Parpam:

Naga Parpam - 100 - 300 mg with ghee, BID, after food for 48 days

Thamira (Sembu) Parpam - 30mg with ghee BID for 5 days after food

Sangu Parpam -100 -300 mg with ghee, BID, after food for 48 days

Sandarasa Parpam - 100 - 300 mg with honey, BID, after food for 15 days

(Either one Parpam may be administered)

Chenduram:

Chandamarutha Chenduram - 65 - 130 mg with honey, BID, after food for 5 days.

Ayakantha Chenduram - 65 - 130 mg with honey, BID, after food for 48 days

Ayaveera Chenduram - 50 -100 mg with honey/ palm jaggery, BID, after food for 5 days.

Poornachandrothayam - 100 - 200 mg with honey or Karpoorathy Churanam, BID, after food for 3 days

(Any one Chenduram may be administered)

Mathirai:

- Soolai Boobathi mathirai - 1 - 2 nos with honey, BID, after food for 24 days.
- Karuppu vishnu chakram - 1 - 2 nos with honey, BID, after food for 24 days.

(Any one mathirai may be used especially if no Chenduram is administered)

Mezhugu:

Rasagandhi mezhugu - 250 - 500 mg with palm jaggery, BID after food for 3 - 5 days.

Vaan mezhugu - 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.

Mahaveera Mezhugu - 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.

Pathangam:

Neelakanda vaalai rasa Pathangam – 5 mg with palm jaggery and milk, BID, after food for 24 days

Kalandhaga Gowri rasa Pathangam - 5 mg with palm jaggery and milk, BID, after food for 24 days

Thirumoorthi Pathangam - 100 - 200 mg with palm jaggery, BID, after food for 7 days

Parangipattai Pathangam - 100 - 200 mg with palm jaggery, BID, after food for 7 days

(Either one mezhugu or pathangam may be administered)

N.B Any one mezhugu / pathangam / Chenduram may be administered in separate courses each for the specified days)

External Medicines:

Poochu (Liquid/Oil Poultice):

Chitramutti Thailam – Quantity sufficient

Lagu Vidamutti thailam – Quantity sufficient

Arkkathi thailam – Quantity sufficient

Vasavu ennai - Quantity sufficient

(Any one or both oils may be used)

Pattru (Semi-Solid Poultice):

Kavikkal (Red ochre)

Kazharchi (Caesalpinia bonducella)

Moosambaram -Kariabolam (Aloe littoralis)

(Any one pattru may be used)

Thokkanam: (Therapeutic Manipulation)

May be advised depending upon the severity of the condition for specified days.

Suttigai (Cautery cauterization):

Gandhi suttigai

Level- III

Model prescription

Day 1- Chukku Thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Meganatha Kuligai - 1 - 2 pills with ginger juice (*Zingiber officinalis*) at early morning in empty stomach.(Purgation)

Day 3- Rest

From Day 4-

Parangipattai Churanam- 1-3 gm with milk, BID, after food, for 24 - 48 days.

Sangu Parpam - 100 - 200 mg with honey, BID, after food, for 24 - 48 days.

Poornachandrothayam - 100 - 200 mg with honey or Karpoorathy Churanam, BID, after food for 3 days.

Karuppu Vishnu chakkara Mathirai - 1-2 pills with ginger juice *(Zingiber officinalis)* Honey, BID, after food,for 24 - 48 days.

Laguvidamutti Thailam - Quantity sufficient (Ext), for 24 - 48 days.

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management .

Referral criteria:

- Patients with severe pain and with indications for surgical intervention to manage fibromyalgia.

- Patients who require immediate attention at higher centers because their co-morbidities cannot be handled in the Level 3 setting.

8. Prevention Management

Recommended diet and Lifestyle (Pathiyam)

TABLE 1:

1.	**Salt**	1.Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1.Kodam puli *(Garcinia cambogia)*
3.	**Oil**	1.Nallennai *(Gingelly oil)*
4.	**Dairy products**	1.Cow & Goat (Milk & Ghee) 2.Butter milk
5.	**Sugar**	1.Panai vellam (Palm jaggery) 2.Naatu sarkarai 3.Karupatti
6.	**Spices**	1.Vendhayam *(Trigonella foenum)* 2.Lavanga pattai (*Cinnamom verum)* 3.Milagu *(Pepper nigrum)* 4.Elam *(Elettaria cardamom)* 5.Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1.Ulunthu *(Vigno mungo)*
8.	**Millets**	1.Ragi *(Eleusine coracana)* 2.Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varieties)**	1.Mani samba 2.Seeraga samba 3.Kai kuthal arisi 4.Puzhungal arisi
10.	**Greens**	1. Manali keerai *(Giseka pharnaceoides)* 2. Vallai keerai *(Convolvulus repens)* 3. Kothamalli keerai *(Coriandrum sativum)* 4. Musumusukai *(Mukia maderaspatana)* 5. Ponnanganni *(Alternanthera sessilis)*\ 6. Mookirattai *(Boerhavia diffusa)*
11.	**Vegetables**	1. Kathiri pinju *(Solanum melongena)* 2. Avarai pinju *(Lablab purpureus)* 3. Avarai pinju(*Dolichos lablab)* 4. Pudalai *(Trichosanthes cucumerina)* 5. Murungai *(Moringa oleifera)* 6. Aththi *(Ficus racemosa)* 7. Sundai *(Solanum torvum)*

		8. Pirandai *(Cissus quadrangularis)* 9. Ladies finger (*Abelmoschus esculenthus)* 10. White pumpkin (*Cucurbita pepo)* 11. Lemon (Citrus limon) 12. Greens (Except Sesbania leaves) 13. Plantain flower (*Musa paradisiaca)* 14. Ginger (*Zingiber officinalis*)
12.	**Tubers**	1. Mullangi *(Rhaphanus sativus)* 2. Karunai *(Amorphophallus paeoniifolius)*
13.	**Non -Veg**	1.Velladu(*Goat*) 2.Kaadai (*quail)* 3.Kaanan kozhi (*White breasted waterhen)*
14.	**Fruits**	1. Figs *(Ficus racemosa)* 2. Jackfruit (*Artocarpus heterophyllus)* 3. Pomegranate *(Punica granatum)* 4. Oranges *(Citrus sinensis)* 5. Banana *(Musa paradisiaca)* 6. Indian gooseberry *(Phyllanthus emblica)* 7. Dates *(Phoenix dactylifera)* 8. Grapes *(Vitis vinifera)* 9. Bael fruit *(Aegle marmelos)*
15.	**Pulses/cereals/ spices**	1. Javvarisi kanji (Tapioca pearls - Manihot esculenta crantz) 2. Red gram *(Cajanus cajan)* 3. Sprouted green gram *(Vigna radiata)* 4. Cashew nuts (*Anacardium occidentale)* 5. Bengal gram *(Cicer arietinum)* 6. Turmeric *(Curcuma longa)* 7. Perungayam *(Ferula asafoetida)* 8. Malli *(Coriandrum sativum)* 9. Cloves (*Syzygium aromaticum)* 10. Ajwain seeds *(Trachyspermum ammi)* 11. Ulunthu *(Vigna mungo)*

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	DRIED FOOD	SOUP
Karungali *Acacia catechu* (Root)	Ulunthu kali *(Vigna mungo)*	Irumurai vaditha kanji	Varagu satham *(Paspalum scrobiculatum)*	Sundai vatral (*Solanum xanthocarpum*)	Murungai keerai soup (*Moringa oleifera*)
		Arisi vaditha sudu kanji	Thinai satham *(Setaria italica)*	Thoothuvalai vatral (*Solanum trilobatum*)	Mudavaatu kaal (*Drynaria quercifolia*)
		Raagi kanji *(Eleusine coracana)*	Saamai satham *(Panicum sumatrense)*	Nelli vatral (*Phyllanthus emblica*)	Mudakattran leaves soup (*Cardiospermum helicacabum*)
		Venthaya kanji *(Trigonella foenum)*		Aathondai vatral (*Capparis zylanica*)	
		Chukku mudi kanji (Zingiber officinale)		Manathakkali (*Solanum torvum*)	
				Pirandai vatral (*Cissus quadrangularis*)	

Table 3

Restricted Diet

- Vatham-inducing foods like root tubers except karunai kizhangu
- Carbohydrates-rich diet
- Vaazhai (tender fruit of Musa paradisiaca)
- Urulai Kizhangu (Solanum tuberosum)
- Senai Kizhangu (Amorphophallus paeoniifolius)
- Vaer kadalai (Arachis hypogea)
- Pattani (Pisum sativum)

- Mochai (Vicia faba)
- Sour and astringent foods
- Sea foods except small prawns

b.Yoga

Siddhar Yoga Maruthuvam:

- Surya Namaskaram (advised as per the severity of the disease)
- Tadasanam
- Marjariasanam
- Shasanka bhujangasanam
- Shasangasanam
- Matchasanam
- Sarvangasanam
- Naadisuthi – Pranayamam
- Savasanam

Referral Criteria:

- Frequent fatigue
- Anorexia nervosa
- Paget's disease
- Myeloradiculopathy

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6 ADHESIVE CAPSULITIS

6
ADHESIVE CAPSULITIS

NAME OF THE DISEASE

KUMBAVATHAM (PERIARTHRITIS / FROZEN SHOULDER)

KUMBAVATHAM

NAMASTE Code : Z11

WHO ISMT Code : ISMT-4.24.126

PERIARTHRITIS / FROZEN SHOULDER

ICD 10 Code: 75.0;

ICD 11 Code: FB 53.0

ICD -11 TM2: SP15

CASE DEFINITION

Adhesive capsulitis is characterized by pain and restricted movement of the shoulder and is also known as "Frozen Shoulder".[1] It is a condition of uncertain aetiology that occurs in the absence of a known intrinsic shoulder disorder.[2] The American Shoulder and Elbow Society (ASES) put forward a consensus definition of ACS as follows: "a condition characterized by functional restriction of both active and passive shoulder motion for which radiographs of the glenohumeral joint are essentially unremarkable".[3]

Kumbavatham is a disease characterized by pain in the shoulder and upper limbs which results in limitation of shoulder movements with irritation and burning sensation of eyes and cheeks.

INTRODUCTION (incidence/prevalence, morbidity/mortality)

The symptoms pertinent to the shoulder joint and the referred areas can be considered equivalent to the condition Kumbavatham described in Siddha literature. It can be correlated to Adhesive capsulitis in modern medicine, which is one among the 80 types of Vatha diseases classified by Sage Yugi in his treatise Yugi Vaidhya Chindhamani [1, 2]. It is manifested due to vitiation of Vatham humour in and around the shoulder joint causing depletion of the structures or tissues around it and vasoconstriction of vessels leading to pain and stiffness

of the joints resulting in restricted shoulder movement. Adhesive capsulitis is synonymously known as "Frozen shoulder syndrome (FSS)[3] or Painful stiff shoulder or Periarthritis" or the Spectrum of Vali disease affecting the Neck and Shoulder [4]. Kumbavatham is characterized by boring pain in the shoulders and upper limbs with difficulty in abduction and adduction of the affected shoulder, burning sensation in cheeks and eyes, giddiness, fever, pain below the umbilicus, inflammation below the tongue, etc [2, 4].

A study from India reported that approximately 50% people suffering from shoulder pain and stiffness presents with diabetes.[6] Globally, prevalence of 10-22% is reported among diabetic patients.[7] Inflammatory markers such as an elevated C-reactive protein can be independent risk factors for adhesive capsulitis.[9]The peak incidence of onset is in between 40 and 60 years of age and seldom occurs outside this age group and in manual workers.[4,10] The mean age of onset of the disease is 55 years.[11]Adhesive capsulitis is slightly more common in women (1.4:1).[11] In about quarter of the patients the disease is bilateral.[3]

DIAGNOSTIC CRITERIA

Frozen shoulder is classified into primary and secondary with secondary frozen shoulder further subdivided into intrinsic, extrinsic, and systemic categories.[13]

Primary/idiopathic frozen shoulder: An underlying etiology or associated condition cannot be identified.

Secondary frozen shoulder: An underlying etiology or associated condition can be identified.

- ***Intrinsic:*** In association with rotator cuff disorders (tendinitis and partial-thickness or full-thickness tears), biceps tendinitis, or calcific tendinitis
- ***Extrinsic:*** In association with previous ipsilateral breast surgery, cervical radiculopathy, chest wall tumour, previous cerebrovascular accident, or more local extrinsic problems, including previous humeral shaft fracture, scapulothoracic abnormalities, acromioclavicular arthritis, or clavicle fracture
- ***Systemic:*** Diabetes mellitus, hyperthyroidism, hypothyroidism, hypoadrenalism, etc.[8,13,14]

The diagnosis of shoulder pain is essential to direct intervention and inform prognosis.[5]

- Idiopathic frozen shoulder is characterised by spontaneous and sudden onset of severe pain and it may follow minor trauma.[15]
- Night pain is usually noticed in the affected shoulder that may interfere with sleep.
- On palpation, the shoulder is tender with restriction of both active and passive movement[1] (elevation <100°, external rotation >50% restriction).[3]
- Local tenderness is often felt anteriorly over the rotator interval.
- Loss of external rotation is the pathognomonic sign of frozen shoulder which differentiates it from rotator cuff disease.[15]

Clinical course:

The clinical course of frozen shoulder can be divided into three stages as follows:[2,15,16]

Stage 1 – Painful phase/freezing: This can last for 2–9 months. The severity of shoulder pain, especially at night, continues to increase and the patient uses the arm less and less. The very severe pain may often be unrelieved by analgesics.[15] This phase is characterized by an acute synovitis of the glenohumeral joint.[16]

Stage 2 – Stiffening/frozen phase: This can last for 4–12 months and is associated with a gradual reduction in the range of movement of the shoulder. The pain usually resolves during this period, although it is commonly felt as an ache, especially at the extremes of the reduced range of movement.15 There is restriction of external shoulder rotation followed by shoulder flexion, and internal rotation.16

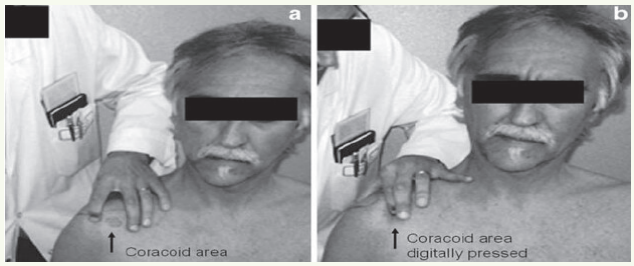
Stage 3 – Thawing phase: This lasts for a further 4–12 months and is associated with a gradual improvement in the range of motion.

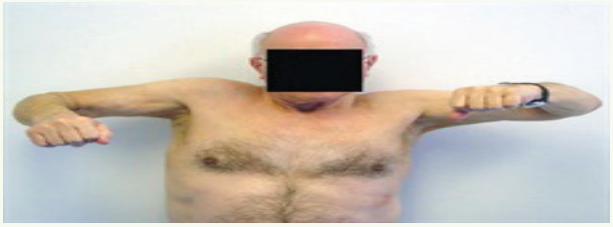
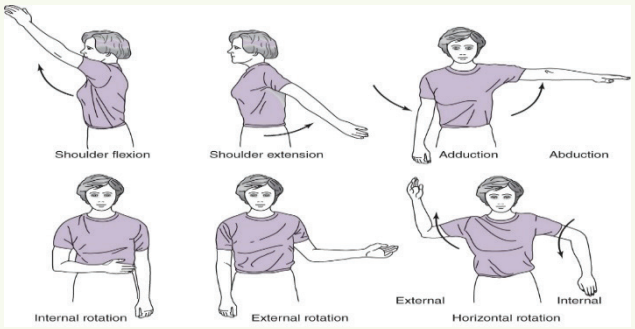
The idiopathic frozen shoulder usually resolves without any long-term sequelae after running its clinical course runs over a period of 1–3 years.[15] In some cases it can persist, presenting symptoms like mild pain which is the most common complaint or with some limitation of shoulder motion.2 However, secondary adhesive capsulitis will warrant further course of action keeping in mind the appropriate management of the underlying cause.

The clinical course resolves when the cause is idiopathic. However, if the cause is secondary it takes further course of action (this has to be done with appropriate management of underlying cause).

CLINICAL EXAMINATION[5]

Clinicians should measure pain, active shoulder Range of Motion (ROM), and passive shoulder ROM to assess the key impairments of body function and body structures. *It is often viewed as a diagnosis of exclusion.*

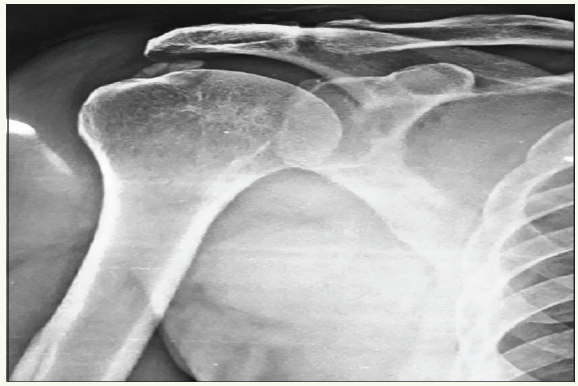
Coracoid Test	It is a highly sensitive and specific clinical examination finding for adhesive capsulitis.[17]	 Digital pressure on the coracoid area (fig b) evokes pain compared to other shoulder area (fig a)[17]

Shoulder Shrug Test	An inability to abduct the arm to 90° in the plane of the body and to hold that position briefly is considered positive.	 The right shoulder shows a shrug sign; the left shoulder is normal. The patient had to elevate the shoulder girdle for the arm to reach 90° abduction.[19]
Glenohumeral External Rotation in Adduction	The patient is positioned in supine with the upper arm comfortably by the side and the elbow flexed to 90°. The examiner passively externally rotates the glenohumeral joint until end range is reached. ROM is measured by placing the axis of the goniometer on the olecranon process. The stationary arm is aligned with the vertical position. The movable arm is aligned with the ulnar styloid process.	 Shoulder Range of Motion[20]
Glenohumeral External Rotation in Abduction	External rotation ROM may also be measured with the shoulder abducted to 45° or to 90° in the frontal plane. Placement of the axis and arms of the goniometer is similar to what is used with the adducted position.	
Glenohumeral Internal Rotation in Abduction	The patient is positioned in supine, the shoulder abducted to 90°, and the elbow flexed to 90°. If glenohumeral abduction is less than 90°, a 45° abduction angle can be used. The examiner passively internally rotates the glenohumeral joint until end range is reached. Placement of the axis and arms of the goniometer is similar to what is used with the adducted position.	
Shoulder Flexion	The patient is positioned in supine with the arm comfortably by the side. The examiner passively flexes the shoulder until end range is reached. ROM is measured by placing the axis of the goniometer on the greater tuberosity. The stationary arm is aligned with the midline of the trunk. The movable arm is aligned with the lateral epicondyle.	

Shoulder Abduction	The patient is positioned in supine with the arm comfortably by the side. The examiner passively abducts the shoulder until end range is reached. ROM is measured by placing the axis of the goniometer on the head of the humerus. The stationary arm is aligned parallel with the midline of the sternum. The movable arm is aligned with the midshaft of the humerus.	

SUPPORTIVE INVESTIGATIONS:[21]

Adhesive capsulitis is primarily diagnosed by history and physical examination, but imaging studies are needed to exclude any underlying pathology. No single imaging study is diagnostic.

Investigation	Findings	
Essential Investigations		
X-Ray	Plain radiographs (anteroposterior, lateral, and axillary views of the glenohumeral joint) are the preferred initial test to rule out other potential shoulder pathologies.[21] They are typically normal in adhesive capsulitis but can identify osseous abnormalities, such as glenohumeral osteoarthritis.[13] Radiographs of the shoulder show osteopenia.[1]	
		X-ray showing calcific deposits in suprsapinatus tendon[22]

Siddha Envagai Thervu findings(Eight-Fold System of Clinical Assessment)

Naadi	–	Vathapitham / Pithavatham
Sparisam	–	Warmth / Tenderness
Naa	–	Normal
Niram	–	Normal / Redness
Mozhi	–	Normal / Low pitched
Vizhi	–	Normal
Malam	–	Normal / Constipation

Neerkuri – Normal

Neikkuri- Oil may spread in the form of a snake indicating prominently Vatham or sometimes Pitham

DIFFERENTIAL DIAGNOSIS:21

The following conditions should be considered in the differential diagnosis when a patient presents with shoulder pain:

Condition	Differential Features
Posterior glenohumeral dislocation	• Usually occur after a traumatic event • Also traditionally attributed to electrocution or seizure. • Acute onset of pain and immediate severe loss of motion. • Posterior shoulder dislocation on axillary view plain radiograph.
Rotator cuff injury	• Pain is typically aggravated by overhead activities. • Decreased active range of motion on physical examination but should have normal or near-normal passive range of motion. • Pain and weakness on affected side elicited with provocative manoeuvres. • Shoulder radiographs are usually normal though MRI will show evidence of rotator cuff tear.
Subacromial rotator cuff impingement	• Pain with shoulder elevation between 60° and 120° • Painful arc syndrome. • Weakness due to pain. • Radiograph may show subacromial bony proliferation. • Shoulder MRI may show evidence of inflammation in the subacromial space.
Proximal biceps tendonitis	• Tenderness at bicipital groove. • Positive Speed test: Pain in the anterior region of the shoulder (resisted forward arm flexion with the elbow extended) • Positive Yergason test (resisted forward supination). • Shoulder radiographs are inconclusive. • MRI may reveal a subluxated long head of the biceps tendon or demonstrate degeneration within the proximal biceps tendon.
Superior labral tears	• Pain elicited with active compression test (resisted arm elevation with the arm 15° adducted, forward flexed parallel with the floor and maximal pronation). • Shoulder radiographs are usually normal though MRI or MR arthrograms demonstrate superior glenoid labral tears.

Condition	Differential Features
Acromioclavicular joint arthrosis	• Anterior shoulder pain. • Pain with cross arm adduction, and no limitation of passive range of motion. • Degeneration of the acromioclavicular joint, distal clavicle osteolysis, and cystic formation at the end of the clavicle on imaging. • Clinical examination can be normal.
Cervical spine neuropathy or myelopathy/ Degenerative cervical spine disease	• Accompanied by neck pain and/or radiating pain, numbness, or paraesthesia down the arm. • Weakness or difficulty with fine motor skills involving the hand. • Full sensory, motor, and reflex examinations will manifest symptoms and signs outside the shoulder. • Positive Spurling manoeuvre (one hand is placed on top of the patient's head while stabilising the shoulders, the neck is then hyperextended, and the head gently tilted towards the symptomatic site). • Degenerative changes in the cervical spine as well as vertebral body subluxation on X-Ray. • Evidence of cervical nerve root compression on MRI.
Glenohumeral arthritis	• Patients may note a sensation of "popping" or crepitus. • Decreased joint space and marginal osteophytes on X-Ray.

Diagnosis:

- Based on the clinical symptoms and laboratory investigations.

PRINCIPLES OF MANAGEMENT

Red Flag Signs of Adhesive capsulitis:

These signs should be assessed before initiating treatment for need for management/ consultation through modern medicine

- Unexplained deformity, mass or swelling with associated lymphadenopathy
- Infection: red skin, fever, systemically unwell
- Trauma causing loss of rotation, abnormal shape
- Disabling pain and significant weakness
- Unexplained wasting
- Significant sensory or motor deficit

The main objective of all treatments for adhesive capsulitis should be early pain relief and functional restoration.[3] It is important to consider the patient's symptoms, stage of the

condition, and patterns of motion loss when selecting a treatment method.16 Treatment of adhesive capsulitis requires a multi-faceted and individualized approach. A stepwise approach shall be adopted in which the physician shall begin with non-invasive treatment, and if it proves to be ineffective, then consider invasive interventions.21 If the patient is already under standard care (anti-inflammatory/analgesics/steroids), the physician may advise to taper the dose of these medicines gradually along with add-on homoeopathy and the medication can be re-assessed further in the follow-up visits for discontinuing the standard treatment in consultation with a conventional physician.

(A) Prevention Management: Primary prevention consists of managing modifiable risk factors. Prolonged immobilization has been linked to adhesive capsulitis, especially following shoulder trauma. Early active and passive range of motion can help to prevent the development of adhesive capsulitis.[27,28] Good control of diabetes may help to prevent secondary adhesive capsulitis.[29,30]

(B) Interventions

At Level 1- Solo Physician Clinic/Health Clinic/PHC (Optimal Standard of treatment where technology and resources are limited)

Clinical Diagnosis: The diagnosis of adhesive capsulitis is primarily clinical and made after a complete medical history and physical examination. However, some investigations, like X-ray, may be done.

Recommended Diet and Lifestyle

Patient Education: Patients should be educated in the chronicity of this condition. If they know and understand ahead of time that it can be several years before symptoms are completely resolved, apprehension and a feeling of urgency for functional return may be decreased.[39]

Exercise: A useful exercise that can be performed in the patient's home and with the therapist is known as the sleeper stretch, which works on improving internal rotation. In the lateral decubitus position (patient on side), with the affected shoulder down against the bed, the elbow is flexed 90° and the unaffected arm pushes it towards the bed.[21]

Yoga: Various yoga practices are helpful for the management of patients with adhesive capsulitis.40 Yoga maintains existing joint function and prevents further loss of range of movements. Some of the asanas that may be helpful in adhesive capsulitis are Garudasana and Dhanurasana.41 Few of the standing group of asanas that can be practices are *tadasana, tiriyakatadasana, katichakrasana, trikonasana, ardhakatichakrasana, dwikonasana, ardhachakrasana, natarajasana etc.*

Nutrition: Vitamin C has anti-inflammatory properties, and it may be used to treat primary frozen shoulder at an early stage or to prevent secondary frozen shoulder.[42]

Restricted Diet and Lifestyle[21,43]

Diet: Avoid diet rich in saturated fats such as butter, cheese, red meat, as hypercholesterolemia, particularly hyper-low-density lipoproteinemia have significant associations with primary frozen shoulder.

Activity modification: Patients should be advised to avoid exacerbating activities to interrupt the cycle of ongoing inflammation. This may necessitate significant time off work or away from leisure activities.

Follow Up (every 15 days or earlier as per the need)

Reviews should include:21

- Monitoring the patient's symptoms and impact on their daily activities and overall quality of life.
- Monitoring the clinical course of adhesive capsulitis over long-term.
- Management of adhesive capsulitis in terms of exercise.
- Discussing the concerns of the patients related to treatment, their knowledge of the condition, and their ability to access services.
- Reviewing the effectiveness and tolerability of all treatments.
- Self-management support.

Referral Criteria

- Non responsiveness to treatment
- Evidence of an increase in severity/complications
- Substantial impact on their quality of life and activities of daily living
- Diagnostic uncertainty
- Uncontrolled co-morbidities, such as diabetes, hypothyroidism etc.

At Level 1

Siddha Line of Treatment 49-56

At Level 1

Line of Treatment:

Day 1- Ennai Muzhukku (Oil bath - Oleation)

Vitiated Mukkutram should be corrected by an Oil bath with medicated oils.

Seeraga Thailam - Quantity sufficient

Chukku Thailam - Quantity sufficient

(Any one oil may be used)

Note :

Rules for Oleation:

- When liniments are applied on the body, three drops must be instilled into each ear and two drops into each nostril and in both eyes.
- Application of oil should start from the vertex of the head downwards to all parts of the body and gently rubbed well, without emission of heat.

Regimen on the Day of Oil-Bath:

Substance which are antagonists to medicines, synergetic and which reduce physical strength temporarily may be avoided

Food substance to be avoided	Food substances to be added
Crab (Brachyura).	Lablab Beans (Lablab purpureus)
Fish (Cisco)	Tender drumstick (Moringa oleifera)
Chicken (Gallus gallus domesticus)	Turkey berry (Solanum torvum)
Goat (mutton) (Capra aegagrus hircus)	Green gram (Vigna radiate)
Bitter gourd (Momordica charantia)	Black pepper (Piper nigrum)
Brinjal (Solanum melangena)	Nutmeg (Myristica fragrans)
Black gram (Vigna mungo)	Ridged gourd (Luffa acutangula)
Onion (Allium cepa)	Snake gourd (Tichosanthes cucumerina)
Pig (Sus scrofa domesticus)	Tender mango (Mangifera indica)
Wild cow (Bos Taurus)	Tender brinjal(Solanum melongena)
Mustard (Brassica juncea)	Meat of rabbit (Oryctolagus cuniculus)
Coconut (Cocos nucifera)	Lake fish (Coregonus clupeaformis)
Tamarind (Tamarindus indica)	Small fish
Milk	Cows ghee
Curd	Betel leaf and areca nut
Butter milk	Night shade (Solanum nigrum)
Tobacco(Nicotiana tabacum)	Brede embellage (Alternanthera sessilis)
Jaggery	Pigeon pea (Cajanus cajan)
Cold water	Indian gooseberry (Phyllanthus emblica)
Fruits	Red root amaranth (Amaranthus blitum)
Cluster bean (Cyamopsis tetragonoloba)	Asafoetida (Ferula asafoetida)
Horse gram (Macrotyloma uniform)	Curry leaf (Murraya koenigii)
Sesamum (Sesamum indicum)	Climbing brinjal (Solanum trilobatum)
Bengal gram (Cicer arientimum)	Scorpion fish (Scorpaena guttata)
Further, day sleep, sexual intercourse and exposure to Sun light, strong breeze are also to be avoided on the day of oil bath	

Day 2- Kazhichal Maruthuvam (Purgation)

Kazhichal maruthuvam is the procedure by which the vitiated kutrams are eliminated through the anal route. It is the treatment of choice for Vali/ Vatham predominant conditions. It is also used as a prophylactic treatment or for general wellbeing.

Merugulli Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

Kazharchi Thailam - 8 - 15 ml with lukewarm water at early morning in empty stomach.

(Any one medicine may be used)

Note :

Rules to be followed for purgation:

- The patient is advised to take purgative medicine early morning at 5-6 am in empty stomach.
- If bouts of purgation does not commence, ask the patient to drink hot water.
- Some patients have symptoms of nausea, profuse sweating and vomiting during this treatment.
- After the average number (5-6 times) of bowel evacuation, the patient is advised to intake butter milk/ lemon juice/ tea decoction/ fried cumin seeds kudineer.
- At the end of proper purgation, watery diarrhoea commence. This indicates that the purgation therapy has been successfully completed.
- After purgation, patient may have symptoms like tiredness, slimness, lightness of the body, tiredness of sense organs which is a good sign.
- If on the day of consuming the purgative drug, the patient responds poorly, he should be allowed to take food on that day and the purgative drugs can be administered again on the next day.

Dietary regimen during purgation:

- Milk
- Butter milk
- Rice porridge
- Double boiled porridge
- Luke warm water

Precautions:

- Avoid sleeping during day time of purgation therapy
- Should not take heavy meals before or during the procedure

Day 3- Rest

Day 4- Internal Medicines:

Kudineer Churanam:

(Kudineer should be prepared with 5 to 10gms of Kudineer Churanam by weight)

Arathai Kudineer -30-60 ml, BID, before food for 24-48 days

Nilavembu Kudineer -30-60 ml, BID, before food for 24-48 days

(Any one Kudineer may be used)

Churanam:

Panchadeepakini Churanam - 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days

Amukkara Churanam - 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days

Elathy Churanam - 1-3 gm with Milk/ Honey/Warm water,BID, after food for 48 days

(Either one or two of the Churanam(s) may be used)

Parpam:

Silasathu Parpam - 100 - 300 mg , with ghee/ milk, BID, after food for 48 days

Kungiliya Parpam - 100 - 300 mg with ghee, BID, after food for 48 days

Chenduram:

Ayakandha Chenduram - 100 - 200 mg with honey/thirikadugu Churanam, BID, after food for 48 days.

Arumuga Chenduram -100-200 mg with honey/thirikadugu Churanam, BID, after food for 48 days.

(Either one Parpam and one Chenduram may be used)

External Medicines:

Poochu (Liquid / Oil Poultice):

Vatha Kesari Thailam - Quantity sufficient

Kunthiriga Thailam - Quantity sufficient

Arkkathi thailam - Quantity sufficient

Vatha ennai - Quantity sufficient

(Any one or both oils may be used)

Pattru (Semi-Solid Poultice):

Aavarai leaves (Cassia auriculata) + Veliparuthi leaves (Pergularia daemia) + Ulunthu (Vigna

mungo) powder are taken in ratio of 1:1:2 with egg white and applied over the affected areas.

External Therapies:

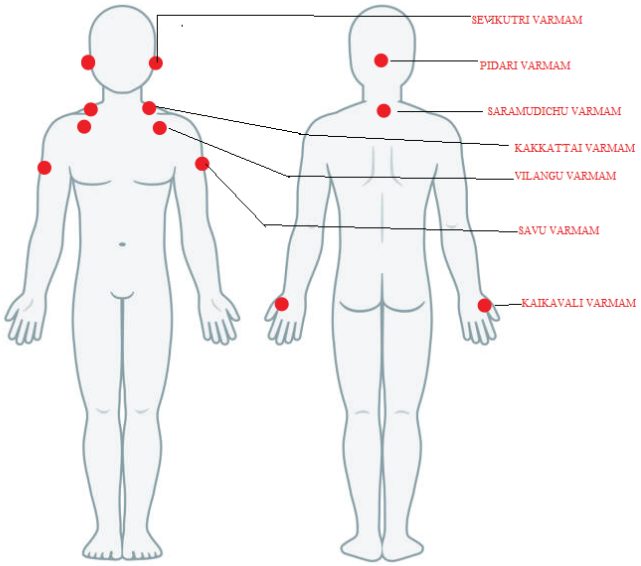
Varma Maruthuvam:

- Pidari varmam - Over the nape of the neck, in the depression directly below the occipital protuberance.
- Saramudichi - over the cervical prominence.
- Sevikutri varmam - Just below the ear lobe at the level of Temperomandibular joint.
- Kakkattai varmam - Situated at the midpoint of supra clavicular fossa.
- Vilangu varmam - Just medial 4 finger breadth to both anterior aspects of the shoulder joint.
- Savvu varmam - Situated at the midpoint of the medial aspect of the arm.
- Kaikavali varmam - Web region between thumb and index finger.

(All or Some of the Varmam Points may be stimulated depending upon the symptoms)

Rules to be followed in Varma maruthuvam:

- Varmam Maruthuvam should only be done by Siddha Physician.
- Physician performing VarmamMaruthuvam should be free from sharp nails.
- Avoid approaching Varmam pressure points with nails & sharp metallic instruments.
- The better posture of the patient for VarmamMaruthuvam is sitting/ lying, so that physician will have the direct contact with patient‟s eye.
- Varmam Maruthuvam can be done twice a week; in case of severity of the disease, treatment can be recommended daily.
- Varmam pressure points will vary according to the patient‟s age, thega ilakkanam(Body Constitution/ Biotype) and severity of disease condition.
- Based on the severity and condition of the disease, the Siddha physician can prescribe the medicines along with Varmam maruthuvam.
- Naadi of the patient has to be analysed prior to Varmam maruthuvam.
- A male physician to male patient and a female physician to a female patient are preferable
- Varmam maruthuvam should not be done during severe systemic illness, semen ejaculation, uncontrolled passage of urine, stools, etc.,
- Varmam treatment is not advised for pregnant women. If needed, shall be decided by the Varmam expert.
- Varmam treatment is not advised for patients under the influence of alcohol, bitten by Snakes/ scorpion.



Level- I

Model prescription

Day 1- Chukku thailam- Quantity sufficient - Ennai muzhukku (Oleation).

Day 2- Merugulli Thailam - 8 - 15 ml with lukewarm at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4-

Amukkara Churanam - 1-3 gm with honey, BID, after food, for 24 - 48 days.

Silasathu Parpam - 100 - 300 mg with ghee, BID, after food, for 24 - 48 days.

Arumuga Chenduram - 200 - 100 mg with honey, BID, after food, for 24 - 48 days.

Kunthriga thailam - Quantity sufficient (Ext), for 24 - 48 days.

Arkkathi Thailam - Quantity sufficient (Ext), for 24 - 48 days.

Veliparuthi + Aavarai + Ulunthu pattru for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below.

Follow-up and duration:

Patients will be followed up weekly and will be treated upto 3 months depending upon the symptoms.

Referral Criteria:

• Cases in which the aforementioned treatment is ineffective or ineffectively effective, which result in worsening of symptoms.

• Patients with a variety of untreated co-morbidities who need rapid therapeutic intervention from traditional medicine.

At Level 2 (CHC/Small hospitals (10-20 bedded hospitals with basic facilities such as routine, investigation, X-ray**)**

Clinical Diagnosis: Same as level 1. The case referred from Level 1, or a fresh case must be evaluated thoroughly for any complications.

Investigations: The diagnosis would be primarily clinical. However, some investigations may be necessary to investigate complications or exclude other differential diagnoses as follows:

- X-Ray
- Magnetic resonance imaging

Management: Same as level 1.

Other procedures:

Physiotherapy: Physiotherapy is the cornerstone of successful treatment and should be initiated as early as possible in the disease course.[44] Evidence suggests manual mobilisation techniques with exercise are effective for adhesive capsulitis.[16,43,45] Passive mobilisation and capsular stretching are two of the most commonly used techniques. Maitland technique (a high-grade mobilization technique in which to and fro movements or oscillations are applied to the affected areas) and combined mobilizations have proven beneficial effects in adhesive capsulitis.[46]

Recommended Diet and Lifestyle: Same as level 1

Restricted Diet and Lifestyle: Same as level 1

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 1, plus
- Failure of acute exacerbation to respond to initial medical management.
- Advanced stages of disease

At Level 2:

In addition to level 1 management the following will be exclusively used in level 2

Day 1- Ennai muzhukku (Oleation)

- Arakku Thailam - Quantity sufficient (For Ext. Use only)
- Santhanathi Thailam - Quantity sufficient (For Ext. Use only)

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice (Zingiber officinalis) at early morning in empty stomach.
- Vathanaasa Thailam - 15 - 30 ml with lukewarm water at early morning in empty stomach.
- Meganatha kuligai (65 - 130 mg) - 1- 2 pills with warm water

(Any one may be used)

Day 3: Rest

Day 4: **Internal Medicines:**

Churanam:

- Thirikadugu Churanam- 1 - 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days.
- Parangipattai Churanam- 1 - 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days
- Pirandai Churanam- 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Lavangathi Churanam- 1 - 3 gm with Milk/ Honey/Warm water,BID, after food for 48 days.

(Any one Churanam(s) may be administered)

Parpam:

- Sangu Parpam - 125 - 325 mg with ghee/ butter, BID, after food for 48 days
- Muthuchippi Parpam - 200 - 400 mg with milk/ ghee, BID, after food for 48 days
- Paal karudakal Parpam- 100 - 200 mg with milk/ ghee, BID, after food for 48 days

Chenduram:

- Arumuga Chenduram - 65 - 130 mg with honey, BID,after food for 48 days
- Aya Veera Chenduram - 50 -100 mg with BID, honey/ palm jaggery, BID, after food for 48 days.

(Either one Parpam or one Chenduram may be used)

Mathirai:

- Karuppu Vishnu Chakram mathirai - 1 - 2 pills with ginger juice (Zingiber officinalis) Honey, BID, after food for 24 days

- Vishnu chakram mathirai - 1- 2 pills with ginger juice (Zingiber officinalis), Honey, BID, after food for 24 days.
- Pachai karpoora mathirai - 1-2 pills with ginger juice (Zingiber officinalis), BID, after food for 24 days

(Any one mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Mahavallathy ilagam - 3 - 5 gm with warm milk , BID, after food for 48 days.
- Amukkara ilagam - 3 - 5 gm with warm milk , BID, after food for 48 days.

(Any one Ilagam may be used)

Nei :

- Panchathiktha Nei- 5-10 gm with warm water/ warm milk, BID, after food for 48 days
- Chitramutti Nei- 5-10 gm with warm water/ warm milk, BID after food for 48 days

(Any one Nei may be used)

Mezhugu:

- Pancha lavana mezhugu - 3 - 5 gm with warm water / milk for 3 to 5 days
- Sitranda mezhugu – 250 - 500 mg with honey, BID, after food for 3 to 5 days

(Any one Mezhugu may be administered either before or after the course of administration of Chenduram)

Ennai:

- Vadha Ennai - 1 to 3 ml with seeraga kudineer (Cuminum cyminum), BID, after food for 48 days.

External Medicines:

- Poochu (Liquid/Oil Poultice):
- Kayathirumeni Thailam – Quantity sufficient
- Vatha kesari Thailam – Quantity sufficient
- Chitramutti Thailam – Quantity sufficient
- Arkkathi Thailam – Quantity sufficient

(Any one or two oils may be used)

Pattru (Semi-Solid Poultice):

- Aavarai leaves (Cassia auriculata) + Veliparuthi leaves (Pergularia daemia) + Ulunthu (Vigna mungo) powder are taken in ratio of 1:1:2 with egg white and applied over the affected areas.

- Kazharchi Pattru (Caesalpinia bonducella) with egg white.

(Any one Pattru may be used as per availability)

Ottradam (Fomentation):

- Kazharchi leaves (Caesalpinia bonducella)
- Erukku leaves (Calotropis gigantea)
- Veliparuthi leaves (Pergularia daemia)
- Thazhuthazhai leaves (Clerodendrum phlomidis)
- Notchi leaves (Vitex negundo)
- Vathanarayanan leaves (Delonix elata)
- Aamanakku leaves (Ricinus communis)
- Vallarai leaves (Centella asiatica)
- Mudakattran leaves (Cardiospermum halicacabum)

(Some of the leaves may be used as per availability)

Patti kattal (Oil bandaging):

Medicated oil may be heated, applied on the affected area and wrapped with sterile cotton gauze piece, then irrigated with oil once in a while. It is advised for 3-5 days depending upon the severity of the symptoms.

Level- II

Model prescription

Day 1- Arakku Thailam- Quantity sufficient - Ennai muzhukku (Oleation).
Day 2- Agasthiyar kuzhambu - 100 - 200 mg with ginger juice (*Zingiber officinalis*) at early morning in empty stomach (Purgation).
Day 3- Rest
From Day 4-
Pirandai Churanam - 3-1 gm with milk, BID, after food, for 24 - 48 days.
Muthuchippi Parpam - 200 - 400 mg with ghee, BID, after food, for 24 - 48 days.
Chitramutti Nei - 15 - 5 ml with warm water/ warm milk, BID after food,for 7 - 14 days.
Karuppu vishnu chakkara Mathirai - 1-2 pills with ginger juice *(Zingiber officinalis)* Honey, BID, after food,for 24 - 48 days (or)
Mahavallathy Ilagam - 3 - 5 gm with warm milk, BID, after food, for 24- 48days
Kayathirumeni Thailam - Quantity sufficient(Ext), for 24 - 48 days.
Arkkathi Thailam - Quantity sufficient(Ext), for 24 - 48 days.
Veliparuthi + Aavarai+ Ulunthu pattru for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms.

Referral criteria:

- Cases that are not responding or are showing minimal response to above management or are having severe progression in symptoms.
- Diagnosis cannot be confirmed or needs further investigations.
- Patients with some other uncontrolled conditions like obesity, hypothyroidism, diabetes mellitus, hypertension etc .

At Level 3 (Ayush hospitals attached with teaching institution, District Level/Integrated/ State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities), multiple departments/facilities for diagnosis and interventions. Must provide additional facilities like dieticians, counselling, and physiotherapy unit.

Clinical Diagnosis: Same as levels 1 & 2.

Investigations:

- X-Ray
- Magnetic resonance imaging
- Arthrography
- Magnetic resonance arthrography
- Computed tomography arthrogram

Recommended Diet and Lifestyle: Same as levels 1 & 2

Restricted Diet and Lifestyle: Same as level 1& 2

Follow Up (every 15 days or earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level 2, plus
- Other modalities can be considered depending on the case and to rehabilitate properly.

At Level 3

In addition to level 1& 2 management the following will be exclusively used in level 3

Line of Treatment:

Day 1-Ennai Muzhukku (Oleation)

- Chukku Thailam - Quantity sufficient
- Keezhanelli Thailam - Quantity sufficient

(Any one oil may be used)

Day 2- Kazhichal Maruthuvam (Purgation)

- Meganatha kuligai - 1-2 tablet with lukewarm water at early morning in empty stomach.

Day 3- Rest

Day 4- Internal Medicines:

Churanam:

- Drakshathi Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Amukkara Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Ashta Churanam - 1 - 3 gm with lukewarm water, BID, after food for 48 days.
- Sarvaanga vatha Churanam- 1-3 gm with lukewarm water,BID,after food for 48 days.
- Sagala noi Churanam- 1-3 gm with lukewarm water,BID,after food for 48 days.

(Any one Churanam(s) may be administered)

Parpam:

- Paal karudakkal Parpam - 100 - 200 mg with milk/ ghee, BID, after food for 48 days
- Palagarai Parpam - 60 - 120 mg with ghee, BID, after food for 48 days
- Pavala Parpam - 65 - 200 mg with ghee, BID, after food for 48 days
- Naga Parpam - 65 - 200 mg with ghee, BID, after food for 48 days

(Any one parpam may be used)

Chenduram:

- Chanda marutham Chenduram -50 - 100 mg with honey/ ginger (Zingiber officinalis) juice/ palm jaggery/ thirikadugu Churanam, BID for 5 days.
- Annapavala Chenduram -50 - 100 mg with honey, BID after food for 48 days.
- Poorana Chandrodhayam -50 - 100 mg with honey/ karpoorathyChuranam, BID after food for 5 days.

(Any one Chenduram may be used)

Nei:

- Senkottai Nei - 5- 15 ml with warm milk, BID, after food for 24 days
- Chitramutti Nei - 5- 15 ml with warm water, warm milk, BID after food for 48 days.

(Any one Nei may be used)

Mathirai:

- Vishnu chakra mathirai - 1 - 2 pils with honey, BID, after food.
- Vatha Ratchasan Mathirai - 1-2 pills with ginger juice (Zingiber officinalis), Honey, BID, after food for 24 days
- Soolai kudoram M for 24 days athirai - 1- 2 pills with ginger juice (Zingiber officinalis), Honey, BID, after food for 24 days.

(Any one mathirai may be used especially if no Chenduram is administered)

Ilagam:

- Thetrankottai Ilagam - 5 - 10 gm with milk, BID after food for 48 days
- Mahavallathagi Ilagam - 3 - 5 gm with warm milk, BID, after food for 24 days.

(Any one Ilagam may be administered)

Mezhugu:

- Rasagandhi Mezhugu - 250 - 500 mg with palm jaggery, BID after food for 3 - 5 days.
- Nandhi Mezhugu - 65 - 130 mg with palm jaggery, BID after food, based on disease condition for 12, 25, 45 days (or) 10,20,30,40 days.
- Vaan Mezhugu - 50 - 100 mg with palm jaggery, BID after food for 3 to 5 days.
- Kanagalinga Mezhugu - 50 - 100 mg with palm jaggery, BID after food for 3 to 7 days

(Any one Mezhugu may beadministered)

Ennai:

- Kayarajanga Ennai- 10 -15 ml with lukewarm water, Early morning 3 days
- Kayasarvaanga Ennai - 10 -15 ml with lukewarm water, Early morning 3 days
- Soolaikudora Ennai - 10 -15 ml with lukewarm water, Early morning 3 days.

(Any one Ennai may be administered)

External Medicines:

Poochu (Liquid/Oil Poultice):

- Kaayathirumeni Thailam - Quantity sufficient

- Vasavu Ennai - Quantity sufficient
- Arkkathi Thailam - Quantity sufficient

(Any one oil may be used)

Suttigai (Cautery Cauterization):

- Manjal kombu (Rhizome of Curcuma longa)
- Uloga Suttigai (Metal Cauterization)

Attai Vidal (Leech Therapy):

Medicated leeches are placed on specific places at specific times over the affected area

Thokkanam: (Therapeutic Manipulation)

May be advised depending upon the severity of the condition for specified days.

Level- III

Model Prescription

Day 1- Chukku Thailam **-** Quantity sufficient -Ennai Muzhukku.

Day 2- Meganatha Kuligai - 1-2 tablet with lukewarm water at early morning in empty stomach (Purgation).

Day 3- Rest

From Day 4-

Sarvaanga vatha Churanam - 1-3 gm with milk, BID, after food, for 24 - 48 days.

Paal karudakkal Parpam - 100 - 200 mg with ghee, BID, after food, for 24 - 48 days.

Chanda marutham Chenduram - 50 - 100 mg with honey/ ginger *(Zingiber officinalis)* juice/ palm jaggery/ thirikadugu Churnam, BID for 5 days.

Rasagandhi / Kanagalinga Mezhugu - 250 - 500 mg with palm jaggery, BID after food for 7- 14 days

Kayarajanga Ennai - 10 -15 ml with lukewarm water, BID,after food,for 7- 14 days.

Kayathirumeni Thailam- Quantity sufficient (Ext), for 24 - 48 days.

Arkkathi Thailam- Quantity sufficient(Ext), for 24 - 48 days.

Veliparuthi + Aavarai + Ulunthu pattru (external) for 48 days

[Note: Administration of medicine dosage and duration may vary depending upon the patient condition]

Recommended and restricted Diet & Lifestyle – as mentioned Table 1, 2 & 3 below

Follow up and duration:

Patients will be followed up weekly and will be treated upto 6 months depending upon the symptoms. The co-morbidities will be as per necessity with integrative management.

Referral criteria:

- Patients with severe pain and with indications for surgical intervention to manage Adhesive capsulitis.
- Patients who require immediate attention at higher centres because their co-morbidities cannot be handled in the Level 3 setting.

7. Prevention Management

Recommended diet and Lifestyle (Pathiyam)

TABLE 1:

1.	**Salt**	1.Indhuppu *(Himalayan rock salt)*
2.	**Tamarind**	1.Kodam puli *(Garcinia cambogia)*
3.	**Oil**	1.Nallennai *(Gingelly oil)* 2.Kadalennai *(Groundnut oil)*
4.	**Dairy products**	1.Cow & Goat (Milk & Ghee) 2.Butter milk
5.	**Sugar**	1.Panai vellam (Palm jaggery) 2.Naatu sarkarai 3.Karupatti
6.	**Spices**	1.Vendhayam *(Trigonella foenum)* 2.Lavanga pattai (*Cinnamom verum)* 3.Milagu *(Pepper nigrum)* 4.Elam *(Elettaria cardamom)* 5.Seeragam *(Cuminum cyminum)*
7.	**Pulses**	1.Ulunthu *(Vigno mungo)*
8.	**Millets**	1.Ragi *(Eleusine coracana)* 2.Varagu *(Paspalum scrobiculatum)* 3.Thinai *(Setaria italica)* 4.Saamai *(Panicum sumatrense)*
9.	**Cereals (Rice varities)**	1.Mani samba 2.Seeraga samba 3.Kai kuthal arisi 4.Puzhungal arisi

10.	**Greens**	1.Manali keerai *(Giseka pharnaceoides)* 2.Vallai keerai *(Convolvulus repens)* 3.Kothamalli keerai *(Coriandrum sativum)*
11.	**Vegetables**	1.Kathiri pinju *(Solanum melongena)* 2.Avarai pinju *(Lablab purpureus)* 3.Murungai pinju (*Moringa oleifera)*
12.	**Tubers**	1.Mullangi *(Rhaphanus sativus)* 2.Karunai *(Amorphophallus paeoniifolius)* 3.Koogai (*Maranta arundinacea)*
13.	**Non -Veg**	1.Velladu(*Goat*) 2.Kaadai (*quail)* 3.Kaanan kozhi (*White breasted waterhen)*

TABLE 2:

INFUSED WATER	MUDDE	PORRIDGE	RICE	PICKLES	DRIED FOOD	SOUP
Karungali *Acacia catechu* (Root)	Ulunthu kali *(Vigna mungo*)	Irumurai vaditha kanji	Varagu satham *(Paspalum scrobiculatum*)	Naarathai (*Citrus medica*)	Sundai vatral (*Solanum xanthocarpum*)	Murungai keerai soup (*Moringa oleifera*)
		Arisi vaditha sudu kanji	Thinai satham *(Setaria italica)*	Kalakkai (*Carissa carandas*)	Thoothuvalai vatral (*Solanum trilobatum*)	Mudavaatu kaal (Drynaria quercifolia)
		Koogai mavu kanji *(Maranta arundinacea)*	Saamai satham *(Panicum sumatrense)*		Nelli vatral (*Phyllanthus emblica*)	
		Venthaya kanji (*Trigonella foenum)*			Aathondai vatral (*Capparis zylanica*)	
		Raagi kanji *(Eleusine coracana)*			Manathakkali (*Solanum torvum*)	
		Chukku mudi kanji (Zingiber officinale)			Pirandai vatral (*Cissus quadrangularis*)	

Table 3

Restricted Diet

a) Vatham-inducing foods like root tubers except karunai kizhangu

b) Carbohydrates-rich diet

c) Vaazhai (tender fruit of *Musa paradisiaca*)

d) Vaer kadalai (*Arachis hypogea*)

e) Pattani (*Pisum sativum*)

f) Mochai (*Vicia faba*)

g) Sour and astringent foods

h) Sea foods except small prawn

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