सत्यमेव जयते

Ministry of Ayush
Government of India

STANDARD TREATMENT GUIDELINES ON MANAGEMENT OF COMMON MUSCULOSKELETAL DISORDERS IN AYURVEDA SYSTEM OF MEDICINE

AYUSH VERTICAL
DIRECTORATE GENERAL OF HEALTH SERVICES
Government of India

STANDARD TREATMENT GUIDELINES
ON
MANAGEMENT OF COMMON
MUSCULOSKELETAL DISORDERS
IN
AYURVEDA SYSTEM OF MEDICINE

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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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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	Antero-Posterior
ASES	American Shoulder and Elbow Society
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddha, Homoeopathy
Ay./Ayu.	Ayurveda
BP	Blood Pressure
BMI	Body Mass Index
BMD	Bone Mineral Density
Ca	Calcium
CBT	Cognitive-Behavioral Therapy
CCR6	Chemokine Receptor 6
CHC	Community Health Center
CPPD	Calcium Pyrophosphate Dihydrate
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
DM	Diabetes Mellitus
DMARDs	Disease-Modifying Antirheumatic Drugs
Ed.	Edition
EMG	Electromyography
ESR	Erythrocyte Sedimentation Rate
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
HTN	Hypertension
IFT	Interferential Therapy
IL2RA	Interleukin-2 Receptor Subunit Alpha
IRF5	Interferon Regulatory Factor 5
JSN	Joint Space Narrowing
LBP	Low Back Pain
LM	50 Millesimal Potency
LS	Lumbar Spondylosis
MCP	Metacarpophalangeal Joints
MMTP	Multidisciplinary Modal Treatment Plan
MRI	Magnetic Resonance Imaging
MSG	Monosodium Glutamate
MSUM	Monosodium Urate Monohydrate Crystals
NCV	Nerve Conduction Velocity
OA	Osteoarthritis
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
TAB	Tablet
TENS	Transcutaneous Electrical Nerve Stimulation
TFT	Thyroid Function Test
TRAF1	TNF receptor-associated Factor 1
USG	Ultrasound
WPI	Widespread Pain Index

GLOSSARY

1. Abhyanga - An Ayurvedic oil massage practice.
2. Aadharniya vega - The natural urges or bodily functions that should not be suppressed.
3. Agantuka - External factor
4. Ajirna/ Ajeerna - Indigestion, weak digestion
5. Amla - Sour taste
6. Annavaha srotas - The channels for transportation of food in the body.
7. Anupana - Vehicle for medicine
8. Anuvasana (Basti) – Oil Enema
9. Apana - One of the five types of Vata, that is responsible for all the movements required for expulsion of faces, flatus, urine, menstrual fluid, semen, etc.
10. Asatmya - Unwholesome, improper, non-conducive
11. Agni - Agni is broadly referred to the digestive function of the body. The term also denotes the metabolism at cellular level thus it is also concerned with body temperature. Its function is transformation and absorption of ingested food in bio-energy.
12. Ahara - Food articles used by human
13. Ahara Rasa - It is the nutrient essence formed after the digestion process takes place in the digestive tract.
14. Ama - Ama refers to the undigested food material or toxins that accumulate in the body due to impaired Agni.
15. Basti - It refers to the per-rectal administration of medicinal mixtures or oils similar to enema therapy. It is one of the five Bio-Purification procedures called Panchakarma.
16. Churna - Powder
17. Chikitsa – Treatment
18. Dhatu - Dhatu refers to the seven fundamental tissues in the body that form the basis of its structure and function. These seven tissues of our body includes the rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra.
19. Deepaniya Natural substances that kindle the gastric fire and augment the appetite
20. Dinacharya - Daily routine to be followed in day to day practice
21. Dushti - Vitiation, Imbalance or a deviation from the optimal state
22. Ghrita (Ghee) - Clarified butter
23. Hina yoga - Insufficient, deficient, inadequate

24. Jala - Water
25. Jalauka - Leech
26. Jatharagni – Digestive Fire present in digestive tract responsible for digestion, absorption and assimilation of food and nutrients
27. Kala - Time, period, season
28. Kalka - Paste of herbs
29. Kapha - It is one of the three Doshas. It is mainly concerned with strength, union and stability of the body.
30. Kashaya - Astringent taste. Sometimes the word also refers to decoction of herbs
31. Katu - Pungent taste
32. Laghu - Light, small, minute
33. Langhana – The modality of treatment that focuses on depriving the body from nutrition.
34. Lavana - Salty taste
35. Lekhaniya - Substances that have scraping actions on body tissues
36. Madhu - Honey
37. Majja – Broadly refers to the bone marrow
38. Mala - Waste products that are meant to be excreted out of the body. It primarily includes urine, faeces and sweat.
39. Meda - Broadly refers to the fat/adipose tissue
40. Madhura - Sweet taste
41. Mamsa - Broadly refers to the muscles tissue
42. Mamsavaha Srotas - Channels of circulation that are responsible for transportation of nutrients and also metabolic products to and from the muscle tissue.
43. Medhya - Substances that have potential to enhance the cognitive functions and intellegence
44. Medovaha Srotas - Channels of circulation that are responsible for transportation of nutrients and also metabolic products to and from the adipose tissue
45. Mithyaayoga - Contrast incidence or inappropriate use
46. Nasya - Nasal administration of drugs in the form of medicated oil, ghees, decoctions, powders etc.
47. Nidana - Refers to the etiology or cause of disease or imbalance
48. Nidaana Parivarjana - Refraining from or avoiding of causative factors related to disease or imbalance

49. Nidra - Sleep
50. Nija - Innate, one's own, internal
51. Niruha (Basti) - Per-rectal administration of mixtures (in the form of emulsion) of medicinal substances like decoction, paste, oil, salt, honey etc.
52. Pachaniya- Substances that help in proper digestion
53. Panchakarma - According to Ayurveda this refers to the five cleansing therapies i.e. Vaman, Virechana, Basti, Nasya and Raktamokshana.
54. Pitta - It is one of the three Doshas (Bio-energies). Pitta is mainly concerned with all the transformation related functions in the body. It is closely associated with the functions of Agni.
55. Samavastha – The pathological conditions caused due to Ama afflicted dosha, dhatu or mala
56. Sevan – Consumption
57. Shaman – Pacification
58. Shodhan – Bio-purification
59. Snehana – Oleation
60. Swedana - Fomentation
61. Taila – Oil
62. Vata - It is one of the three Doshas (Bio-energies). Vata is mainly concerned with all the movements in the body. It is also closely associated with neurological and endocrine functions in the body.
63. Vati - Tablet

1 OSTEOARTHRITIS

1
OSTEOARTHRITIS

NAME OF THE DISEASE

- ***Sandhigata Vata* (National Ayurveda Morbidity Code:** AAE-16**)**
- **Osteoarthritis**

ICD-10: M15 to M19

ICD 11 code: FA00-FA05

ICD-11 TM 2: SP 12

CASE DEFINITION

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]

Sandhigata Vata: The disorder characterized by वातपूर्णदृतिस्पर्शः *Vatapoornadriti Sparsha* (swelling as if filled with air is felt during palpation), सन्धिशोफः *Sandhishopha* (swelling in the joints), प्रसरणाकुञ्चनयोःसवेदनाप्रवृत्तिः *Prasarana Akunchanchanayoh Pravrittishcha Savedana* (pain during flexion and extension of joint), सन्धिशूलम् *Sandhishoola* (joint pain), (सन्धि) कार्य हानिः *Karyahaani* (loss of joint mobility). Short Definition: vitiated *Vata* in *Sandhi*

INTRODUCTION

In India, nearly 80% of the population hsa OA among the patients who claimed knee pain, of which approximately 20% reported incapability in daily activities.[2] 80% of those with osteoarthritis have limitations in movement, and 25% cannot perform their major daily activities.[3]

Sandhigata Vata

Excessive intake of dry, preserved, frozen, chilled (*Ruksha, Sheeta*) food items (*Vata Vardhak Ahaar), inadequate diet or malnutrition, habit of untimely eating, old age (Vriddha avastha), inadequate sleep at night, excessive blood loss, rigorous physical activity, excessive walking, excessive weight lifting, improper bio-purification practices, continuing mental stress and anxiety (Chinta, Shoka, Bhaya), chronic illness or debilitating diseases, trauma, etc. may cause initiation of any of the two modes of pathology of this disease*. These and some other

factors like continuing indigestion may cause either *Dhatu Kshayajanya* (degenerative) or *Avaranjanya* (obstructive) pathology for vitiation of the *Vata Dosha*. This results in further degeneration of specific tissues where the vitiated *Vata Dosha* shows dominant effects, because of local causes. This stage is called *Dosha Dushya Sammurcchanaa* where manifestation of *Sandhigata Vata* begins. The tissues of joints (*Asthi, Snayu, Kandara*) and their functions are affected progressively. Appropriate interventions and refraining from indulgence in causative factors are crucial at early stages to slow down the rate of progression of disease. Old age, Obesity and *Vata* type *Prakriti* (body mind constitution) are some of the risk factors in aggravating the rate of progression of *Sandhigata Vata*.

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 related to ageing.
- Secondary OA occurs due to causes such as congenital, trauma, metabolic, endocrine, joint disease, neurological, vascular, and bone disease.[4]

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[5]

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 selectedhand 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

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) are suggestive of osteoarthritis 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.[6]

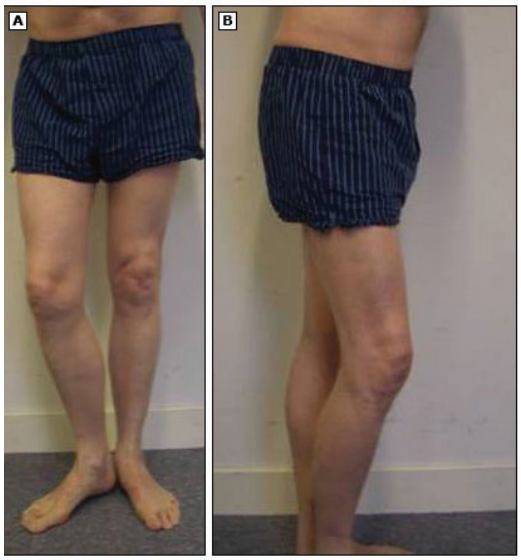


Figure 1: Patient with right hip OA, showing fixed flexion and external rotation deformity.

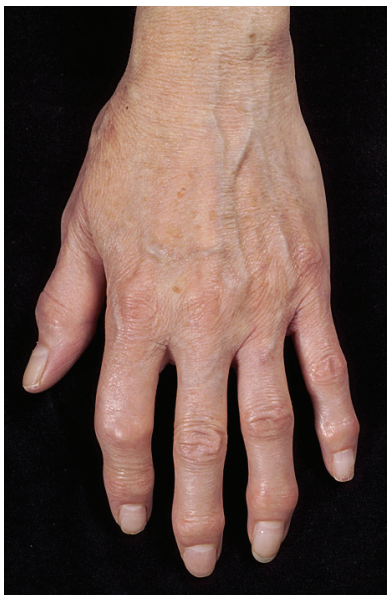


Figure 2: Heberden's nodes (thumb, middle, ring, and little finger DIP joints), Bouchard's nodes (index finger PIP joint), and lateral radial/ulnar deviation (index PIP joint, ring DIP joint) in the left hand of a person with nodal OA.

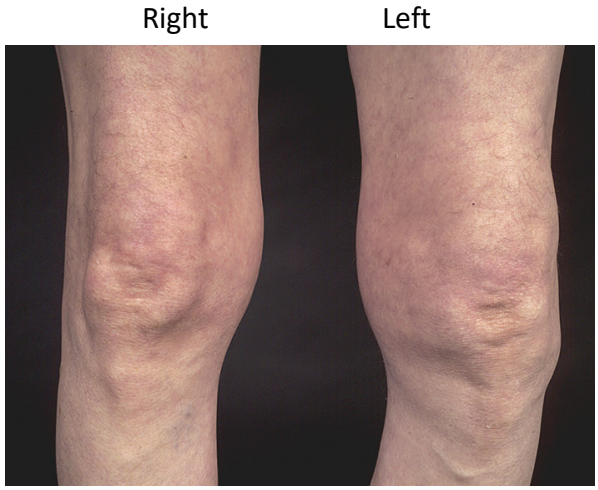
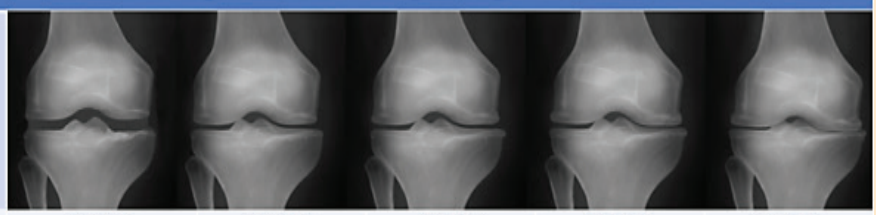


Figure 3: Unilateral knee OA: swollen left knee with varus and fixed flexion deformity in a 63-year-old man with a prior history of knee trauma. On palpation, there was marked crepitus, restricted flexion, bony swelling, and a small effusion. The cruciates were intact, but there was minor varus/valgus 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.[7] 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[8]:
<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 anteroposterior 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 (Ref. 9):
<table>
<tr><th colspan="6">Kellgren–Lawrence grading scale</th></tr>
<tr><td>X-Ray</td><td colspan="5">  </td></tr>
<tr><td>OA Grade</td><td>Grade 0 (Normal)</td><td>Grade 1 (Doubtful)</td><td>Grade 2 (Mild)</td><td>Grade 3 (Moderate)</td><td>Grade 4 (Severe)</td></tr>
<tr><td>JSN</td><td rowspan="2">No radiographic features of OA are present</td><td>Doubtful</td><td>Possible</td><td>Definite</td><td>Marked</td></tr>
<tr><td>Osteophytes</td><td>Possible</td><td>Definite</td><td>Multiple</td><td>Large</td></tr>
</table>
</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>

Clinical presentation of *Janu Sandhigata Vata*:

Sandhigata Vata is described in following chapters of major Ayurveda Classics - Ca.Ci.28/37; Su.Ni.1/28; As.Ni.15/17; Ah.Ni.15/14; Ma.Ni.22/21.

- वातपूर्णदृतिस्पर्शः [swelling as if filled with air]
- सन्धिशोफः[swelling in the joints]
- प्रसारणाकुञ्चनयोःसवेदनाप्रवृत्तिः [pain during flexion and extension of joint]
- हन्तिइतिप्रसारणाकुञ्चनयोरसामर्थ्यं करोति (Nyayachandrika) [Loss of function]
- शूल[Pain]
- आटोप [Crepitus]

When *Vata Dosha* combines with vitiated *Kapha Dosha* there can be *Stambha* (stiffness) and *Gaurava* (heaviness) along with above clinical presentation.

The severity assessment in Ayurveda is generally done on the basis of clinical features present in the disease and as per the following *Sadhya-Asadhyata* criteria.

Mild disease – When only few symptoms as per the Ayurveda classics are present and the patient is young without any co-morbidity

Moderate disease –When many symptoms are present and the patient is older and also has other co-morbidities

Severe disease –When all the clinical features of disease are present in an elderly patient who is already having crippling deformity, and in conditions associated with *Dhatu Kshaya* (debilitating illness)

- **Complications:** Pain, falls, difficulty in ambulation, joint mal-alignment, decreased range of motion of the joint and radiculopathies
- **Prognosis**: The prognosis for osteoarthritis patients depends on which joints are affected and the level of symptomatology and functional impairment. Some patients remain relatively unaffected by Osteoarthritis, while others can experience severe disability. In some cases, joint replacement surgery offers the best long-term outcome.

  Sandhigata Vata occuring due to *Dhatu Kshaya* in elderly is difficult to treat. In case it is due to *Aavaranajanya* pathology, early treatment is advisable as pathologies due to *Aavarana* become incurable or difficult to treat when neglected for one year. *Vata Vyadhi* are considered as *Mahaagada* (the diseases that are not easy to treat) by Sushrut & Vagbhat and *Sandhigatavata* is one of the *Vata Vyadhi*. *Sandhigata* diseases happen to be of *Madhyam Roga Marga* which are generally *Yapya* or *Kashtasadhya* (needs continual management and are difficult to cure).

Table No 1: Characteristics to be observed during local examination of the affected joint

Signs	
Appearance **दर्शन**	Swelling (usually bony ± fluid/soft tissue)
	Resting position (attitude)- showing inward/outward angulation
	Deformity
	Muscle wasting (global: all muscles acting over the joint)
Feel **स्पर्श**	Absence of warmth
	Swelling: bony or effusion
	Effusion if present is usually small and cool to touch
	Joint-line tenderness
	Peri-articular tenderness (especially knee, hip)
Movement **गति**	Coarse crepitus
	Reduced range of movement
	Weak local muscles

DIFFERENTIAL DIAGNOSIS[10]

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. • 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

Condition	Differential Features
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

Differential diagnosis as per Ayurveda: *Kroshtuk Shirsha, Amavata, Vatarakta, Sama Vayu, Amsashoola, Asthi-majjagata Vata, Avabahuk, Sarvangakupita Vata*

Table No.2: Details of the differential diagnosis of *Sandhigata Vata*

Presentation with	***Sandhigatvata***	***Amavata***	***Vatarakta***	***Koshtruka Shirsha***	***Sama Vayu***
Ama Lakshana	Not pathognomonic	Present	Not pathognomonic	Not pathognomonic	Present
Jwara	Absent	Present	Present	Absent	Present but Mild
Vedana	On flexion and extension of joints	Excessive pain (like scorpion bite), not related with movement. Aggravation on cloudy conditions, eastern winds and morning & night	*Mushika Damsavata Vedana* (like rat bite)	Severe pain in knee joint only	Mostly generalized mild to moderate pain associated with heaviness, stiffness and drowsiness Aggravation on cloudy conditions
Shotha	Soft swelling (*Vatapurnadritisparsha*)	Tender, may include multiple sites in the body	*Mandala yukta* (with discoloration)	With acute erythematous inflammation, knee joint appears like that of Jackal's head (*Koshtrukashirshavat*)	Fleeting, mild
Commonly affected joints	Mainly weight bearing joints large joints (knee & Hip) ,	Small joints, *trik pradesha*, mostly symmetrical joints	Small joints mainly of hand and foot	Only knee joints	Any joint/s
Upashaya	*Abhyanga*	*Ruksha sweda*	*Rakta mokshana*	*Rakta mokshana*	*Langhan, Pachan*

Presentation with	*Sandhigatvata*	*Amavata*	*Vatarakta*	*Koshtruka Shirsha*	*Sama Vayu*
Dosha	Predominantly *vata*	*Vata Pradhana tridosha*	*Vata Rakta dosha*	*Vata Rakta Dosha*	*Ama* inflicted *Vata*

PRINCIPLES OF MANAGEMENT

Red Flag Signs of OA:

These signs should be assessed before initiating treatment for evaluating the need for management/consultation 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.

General line of treatment as mentioned in Ayurveda classics:

In *Kevala* (uncombined) and *Nirupastambhita* (unobstructed) vitiation of *Vata Dosha*, the treatment protocol must start with internal oleation with any of the four types of *sneha* as per the strength and *Prakriti* of patient. After adequate oleation, regular intake of *sneha* mixed with milk or food may be advised. Local oleation and fomentation (general and local both) must be done simultaneously. The indication of adequate oleation is its appropriate presence in the excreta.

Agnikarma and hot fomentation through poultice, bandaging, massage with oil cooked with black gram and rock salt, etc. may be done as local therapy. *Basti* (Per rectal administration) of *Tikta Ksheera Sarpi* after appropriate *Panchakarma* procedures can be helping in treating diseases of bony origin.

Charak Samhita Chikitsa Sthan Chapter 28 Verse 75-83

केवलंनिरुपस्तम्भमादौस्नेहैरुपाचरेत् ॥७५॥
वायुंसर्पिर्वसातैलमज्जपानैर्नरंततः। स्नेहक्लान्तंसमाश्वास्यपयोभिःस्नेहयेत्पुनः ॥७६॥.....
.....असकृत्तंपुनःस्नेहैःस्वेदैश्चाप्युपपादयेत् ॥८२॥तथास्नेहमृदौकोष्ठेनतिष्ठन्त्यनिलामयाः ।८३।

A] For Prevention of Progression –

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.*[11]

***Ayurveda* Perspective -**

***Nidaana Parivarjan*:** Avoidance of causative factors e.g. unhealthy diet and lifestyle, postural causes etc.

Correction of *Agni*: According to Ayurveda, root cause of all diseases is *Mandagni* i.e. abnormal digestion and metabolism. This in turn leads to improper nourishment of tissues. Hence is the first line of treatment in all disorders is correction of *Mandagni* by averting its causes and few modifications in diet and lifestyle.

Table No. 3: *Pathya Apathya*

Dos	Don'ts (Disease aggravating factors)
Properly cooked fresh and favorable food intake at appropriate timing in appropriate quantity	Excessive intake of dried/preserved/frozen vegetables or foods, regular and excessive intake of lentils like peas, sprouts, raw vegetables and salads, cabbage, cauliflower, celery, brinjal, potatoes and tomatoes
Aged cereals like wheat and rice, Green gram	Refined foods such as bakery products made of white flour and vegetable oils, junk food, reheated or burnt food
Fruits like grapes, *Draksha* (Dried Grapes), *Badara* (*Zizyphus sativus*), *Amra* (*Mangifera indica*)	Excessive intake of dry food items pulses like black eyed beans, lentils, peas, yellow gram, vegetables prepared with less or no oil or ghee etc.
Vegetables like sweet potato, carrot, bottle gourd, round gourd, garlic, *Patola/paraval* (*Trichosanthes dioica*), *Shigru* (drum stick), *Jivanti* (*Leptadenia reticulate*), *Alabu*, *Kushmanda*	Excessive intake of sour and pungent food, acrid (*Atikatu)* and astringent tasting foods like chilli sauce, black pepper powder, green chilli etc.
Judicious intake of milk and Ghee especially from indigenous Cow or Goat	cold drinks, beverages, chilled food and ice cream

Dos	Don'ts (Disease aggravating factors)
Drinking Luke warm or boiled water brought to normal temperature	Insufficient sleep at night or frequent changes in sleep pattern, habitual postprandial day sleeping
Maintaining correct posture while doing movements or daily living activities.	Abrupt and excessive physical exertion through continuous walking, running, standing, climbing, swimming, crawling and sitting. Sports involving physical strain on joints and muscles. Sedentary work in bad posture continuously for long hours (e.g., working on laptop, desktop).
Oil Massage (*Abhyanga*), *Atapa Sevana* (Sun bath with mild sun rays), Comfortable mattress (*Sukha Shayya*), *Ushnodaka Snana* (warm water bath)	Frequent and long duration fasting habits, inadequate diet intake, irregular meal timings, eating untimely e.g. during late night or binge eating etc.
Appropriate exercises and adequate rest	suppression of natural urge especially of hunger, bowel, urine and emotions
	Physical injuries to musculoskeletal organs

Yoga and other exercise: As recommended by qualified yoga instructors or physiotherapist

Other – The patients may be categorized as obese and lean or based on the *Samprapti* if it is *Avarodha Janya* or *Dhatukshaya Janya* and the medicines may be selected accordingly to treat the underlying pathology and cause at every level.

B] Interventions :-

At Level 1:- (Where optimal standard of treatment in situation where technology and resources are limited e.g. Solo Physician clinic/Community wellness centres/ PHC)

- OPD level management
- Advice of *Pathya Apathya*
- Referral criteria

❖ **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.

Management:

OPD level management – If the patient shows mild features of *Sandhigata Vata,* and slight restriction of joint movement, two or more of following forms of medications (*Kwatha, Guggulu, Churna, Taila, Lepa* etc.) may be given along with diet restriction:

Table No. 4: Single drugs/Compound Formulations for internal/external medication

Sr. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
1.	*Rasnadi kwatha*[12]	Decoction	60-80 ml in two divided doses	After meal	15 days to one month	Lukewarm Water
2.	*Balarishta*	*Arishta*	50-80 ml in two divided doses	After meal	15 days to one month	Equal amount of lukewarm water
3.	*Yogaraja Guggulu*[13]	*Vati* (500 mg)	1-3 gm in 2-3 divided doses	After food	15 days to one month	*Rasna-saptaka Kwatha* / warm water
4.	*Gokshuradi Guggulu*	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After food	15 days to one month	Lukewarm water
5.	*Triphala Guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After food	15 days to one month	Lukewarm water
6.	*Ashwagandha Churna*	Powder of *Withania somnifera*	3-5 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Warm milk
7.	*Bala Churna*	Powder of *Sida cordifolia*	3-5 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Warm milk
8.	*Sitopaladi Churna*	Powder	2-5 gms in two divided doses	After meal	15 days to one month	Warm water/ honey/ ghee
9.	*Shunthi Churna*	Powder of dried rhizome of *Zingiber officinale*	1-3 gm in 2-3 divided doses	After meal	15 days to one month	Warm Water
10.	*Panchaguna Taila*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--
11.	*Nirgundi Taila*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--
12.	*Lepa gutika* or *Shunthi Churna*	Powder for external application on affected joint	5-10 gm	--	15 days to one month	Warm Water

*If the patient is obese, *Navak Guggulu* 1 gm thrice daily with *Rasnadi Kashaya* 30 ml twice daily may be added to the regimen prescribed for *sandhigata vata.* Combination of medicines may be used as per the present complaint and co-morbidities present. Considering the state of *Agni*, medicines like *Chiktrakadi Vati, Agnitundi Vati, Vaishvanara Churna* etc. may also be added.

** The *Guggulu* formulations be advised to use after crushing the tablets.

- ***Abhyanga*** (oil application/massage)**-** Massage on the affected joints with warm medicated oils like *Murchita Tila Taila*, *Panchaguna Taila, Kottamchukkadi Taila, Narayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanvantara Taila.*
- ***Swedana*** (hot fomentation) **-** with hot water bag, or any other available modality

Recommended and restricted diet & lifestyle – as mentioned above. *Shunthisiddha Jala* may be advised for drinking throughout the day as per requirement (especially during winter season).

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.[14,15,16,17,18,19]

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.	
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.	

S.no.	Exercises	
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.	
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.	

S.no.	Exercises	
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 : 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, vaksana, gomukhasana, marjari asana, ushtrasana, bhadrasana, bhujangasana, makarasana, shavasana), pranayama (nadishodana pranayama, suryabhedi pranayama, bhramari), yoga nidra practice and meditation.*[20]

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

- 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[21] - 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, beyond ones physical capacity
- 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[22]**:**

- 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 disease condition.
- Management of osteoarthritis in terms of exercise, and physiotherapy.
- Discussing the patient's knowledge of the condition and addressing 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- response 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 bed hospitals with basic facilities such as routine investigations and x-ray)

- ➢ Management with single herbs and compound formulations for internal and external use
- ➢ External therapeutic procedures
- ➢ Bio-purification procedures
- ➢ Advice of *Pathya Apathya*
- ➢ Referral criteria

❖ **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 –

For the patients referred from Level-1, treatment given in level-1 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 may also be considered while giving prescription. Any of the following medicines may be added as appropriate. Impatient management may be opted if necessary.

Table No. 5: Single herbs/ compound formulation for internal and external use

Sr. No.	Formulation	Dosage form	Dose (per day)	Time	Duration and Frequency	Adjuvants/ Anupaana
1	*Mahayogaraja Guggulu*[23]	*Vati*	0.5 – 1.5 gm in 2-3 divided doses	After meal	15 days	*Rasnadi Kwatha / Dashamula Kwatha*
2	*Trayodashanga Guggulu*[24]	*Vati*	1-3 gm in 2-3 divided doses	After meal	15 days to one month	*Rasnadi Kwatha*, Luke Warm Water
3	*Agnitundi vati*	*Vati*	1 -2 gm in 2-3 divided dose	After food	15 days to one month	Lukewarm water
4	*Dashamula Kashaya*	Decoction	60-80 ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water
5	*Sahacharadi Kashaya*	Decoction	60-80 ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water
6	*Ashwagandharishta*	*Arishta*	50-80 ml in two divided doses	After meal	1-2 months	Equal amount of water
7	*Ksheera Bala Taila*	Oil	5 ml	At bed time	1-3 months	Warm milk
8	*Shallaki Niryas*	Capsule containing gum-exudates of *Boswellia serrata*	1-3 gm in three divided doses	After meal	15 days to one month	Lukewarm Water
9	*Mahanarayan Taila*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--

- In case of initial osteoporosis, *Lakshadi Guggulu 500 mg* thrice daily after meal with warm water & *Praval/Shukti/Kapardik/Kukkutandatwak/Godanti Bhasma* 250 mg twice daily with honey or warm water may be added to the regimen prescribed for *Sandhigata Vata.*
- If the patient is obese, *Navaka Guggulu* 1 gm thrice daily with *Rasnadi Kashaya* 30 ml twice daily and *Udwartana* (rubbing dry powders on the body or affected parts) with *Triphala Churna* followed by *Bashpa Sweda* (fomentation with steam created by boiling herbs) may be added to the regimen prescribed for *Sandhigata Vata.*

External procedures as per availability of medicines and resources -

- ***Abhyanga*** (oil application) **-** on the affected joints with warm medicated oils like *Narayan Taila, Panchaguna Taila*, *Kottamchukkadi Taila, Mahanarayana Taila*, *Bala Taila, Brihat*

Saindhavadi Taila, Dhanvantara Taila, Masha Taila, Ksheerabala Taila, Ashwagandha Balalakshadi Taila etc.

- ***Swedana*** (hot fomentation) **-** with hot water bag, pouring of warm oil on the affected joints *(Parisheka), Nadi Sveda* with decoction of *Nirgundi, Dashamula, Eranda, Balamula,* etc., *Patra Pinda Sweda*[25] (local fomentation with heated herbal packs containing leaves of *Nirgundi, Eranda* etc.)
- ***Bandhana*** (bandage): Bandaging tightly with leaves of *Vatashamaka (Dashamula, Rasana, Eranda, Bala, Ashwagandha, Arka* etc.) Plants on affected joints.
- ***Lepa*** (application of medicinal paste) – *Gandhabiroja Lepa, Jadamayadi Lepa, Ellumnishadi Lepa, Kottamchukkadi Lepa,* garlic paste etc. can be applied if swelling is present.
- ***Upanaha*** (fomentation with herbal paste) – *Kolakulatthadi Upanaha, Kottamchukkadi Upanaha* if pain is more with restricted movements.
- ***Pichu***– *Murivenna, Dhanwantaram Taila, Masha Taila, Kottamchukkadi Taila, Sahacharadi Taila, Nirgundi Taila, Bala Taila* etc. they can can be used for *Sthanika Basti also.*
- ***Sthanika Basti*** (Oil pooling over affected joints or areas) e.g. *Janubasti/Greevabasti/ Katibasti* (for knee/s, cervical region or back): *Mahanarayana Taila*26*, Masha Taila, Prabhanjana Vimardana Taila* [27]*, Vishagarbha Taila* [28]*, Bala Taila*[29] *etc.*

Bio-purification procedures like Panchakarma and other procedures:

- *Basti Chikitsa* (per rectal administration of lukewarm medicated oils or emulsions) -

  Matra Basti (per rectal administration of 60 ml of any of these medicated oils) – *Ksheerabala Taila, Dhanwantaram Taila, Panchatikta Guggulu Ghrita, Pippalyadi Anuvasana Taila, Sahacharadi Taila, Saindhavadi Taila* etc.
- *Vatanulomana /Nitya Mridu Virechana* with mild laxatives like *Triphala* powder or *Avipattikara* powder or *Drakshavaleha* 5-10 gm daily at night with lukewarm water.

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 and restricted Diet & Lifestyle – as mentioned above. *Rasona Ksheera Paka* (paste of 5 gm garlic bulbs boiled with 40 ml milk and 40 ml water till 40 ml milk is left) may be advised 40 ml daily for 15 days or a month.

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

At Level 3: (Ayush hospitals attached with teaching institution, District level/State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities)

- Management with single herbs and compound formulations for internal and external use
- External therapeutic procedures
- Bio-purification procedures
- Advice of *Pathya Apathya*
- Referral criteria

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

❖ **Management:** For the patients referred from Level-1 or 2, treatment given in level-1 &/or 2 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 & 2 may be considered while giving prescription and any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

Table No. 6: Single herbs/ compound formulation for internal and external use

Sr. no.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/Anupaana
1	*Vatavidhvamsa Rasa*[30]	Tablet/ powder	500 mg in 2 divided doses	Empty stomach	15 days to one month	Warm water/ Honey/ ghee
2	*Vatari Rasa*[31]	*Vati*	250-500 mg in 1 or 2 divided doses	Empty stomach	15 days to one month	*Shunthi Kwatha/ Erandamoola Kwatha*

Sr. no.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/Anupaana
3	*Brihat vata Chintamani Rasa*	Tablet/ powder	125 (single dose) to 250 mg (in two divided doses)	Early morning or evening empty stomach	15 days	Honey
4	*Ekangaveer Rasa*	Tablet/ powder	125-375 mg in 1-3 divided doses	After meal	15 days	*Rasnadi Kashaya*/ fresh ginger juice
5	*Vatagajankush Rasa*	Powder	125-250 mg in 1-2 divided doses	After meal	15 days	*Manjishtha Kashaya*/ Honey
6	*Panchamrita Lauha Guggulu*	Tablet	500 mg to 1 gm in 1-2 divided dose	After meal	15 days to 1 month	Warm water
7	*Panchatikta Ghrita*	Ghee	10-20 gm in two divided doses	Empty stomach	1-2 months	Warm Milk
8	*Lashunadi Ghrita*	Ghee	5-10 gm	Empty stomach	15 days to one month	Warm water/Milk
9	*Ashwagandhadi Leham/Aja-ashwagandhadi Leham*	*Leham*/ Linctus	5-10 gm	Early morning or evening empty stomach	2-3 months	Warm milk
10	*Amalaki Rasayana*[32]	Powder	5-10 gm	Empty stomach	2-3 months	Warm water

- **External procedures –**
  - ***Shashtik Shali Pinda Sweda*** (local and whole body massage cum fomentation with poultice of rice cooked in milk and *Vata Shamaka* herbs)
  - ***Kashaya Dhara*** (continuously pouring warm decoctions of medicinal herbs) -
  - ***Agnikarma***[33] (Therapeutic heat application at the affected area) – Metal *Shalaka* with direct or conductive method may be used once weekly. (4-8 sittings may be done as required)
  - ***Jalaukavacharana*** (Leech therapy)[34,35] **-** should be done preferably once in a week up to six sittings
- **Bio-purification procedures like Panchkarma and other procedures:**
  - *Tikta Ksheera Basti, Yoga Basti* (Combination of *Anuvasana* and *Niruha Basti*), *Rajayapana Basti*, *Majja Basti, Anuvasana Basti* with *Ksheerabala Taila* etc.
  - *Virechana* (medically induced purgation) - Mild purgation may be preferred with *Shunthisiddha Eranda Sneha* 30-35 ml with warm water in empty stomach or *Trivrit Avaleha* 3-6 gm after meal twice a day. The dose should be based on the *Koshta* (gut sensitivity) and Rogibala (patients strength).[36]

- *Raktamokshana* (Blood-letting) – *Viddha karma* with fine needles *or Siravedha* may be done if pain is acute and severe or is not pacified with any of the therapeutic measures

Recommended and restricted Diet & Lifestyle – as mentioned above.

Follow up – Every 15 days or earlier as per the need.

Referral Criteria:

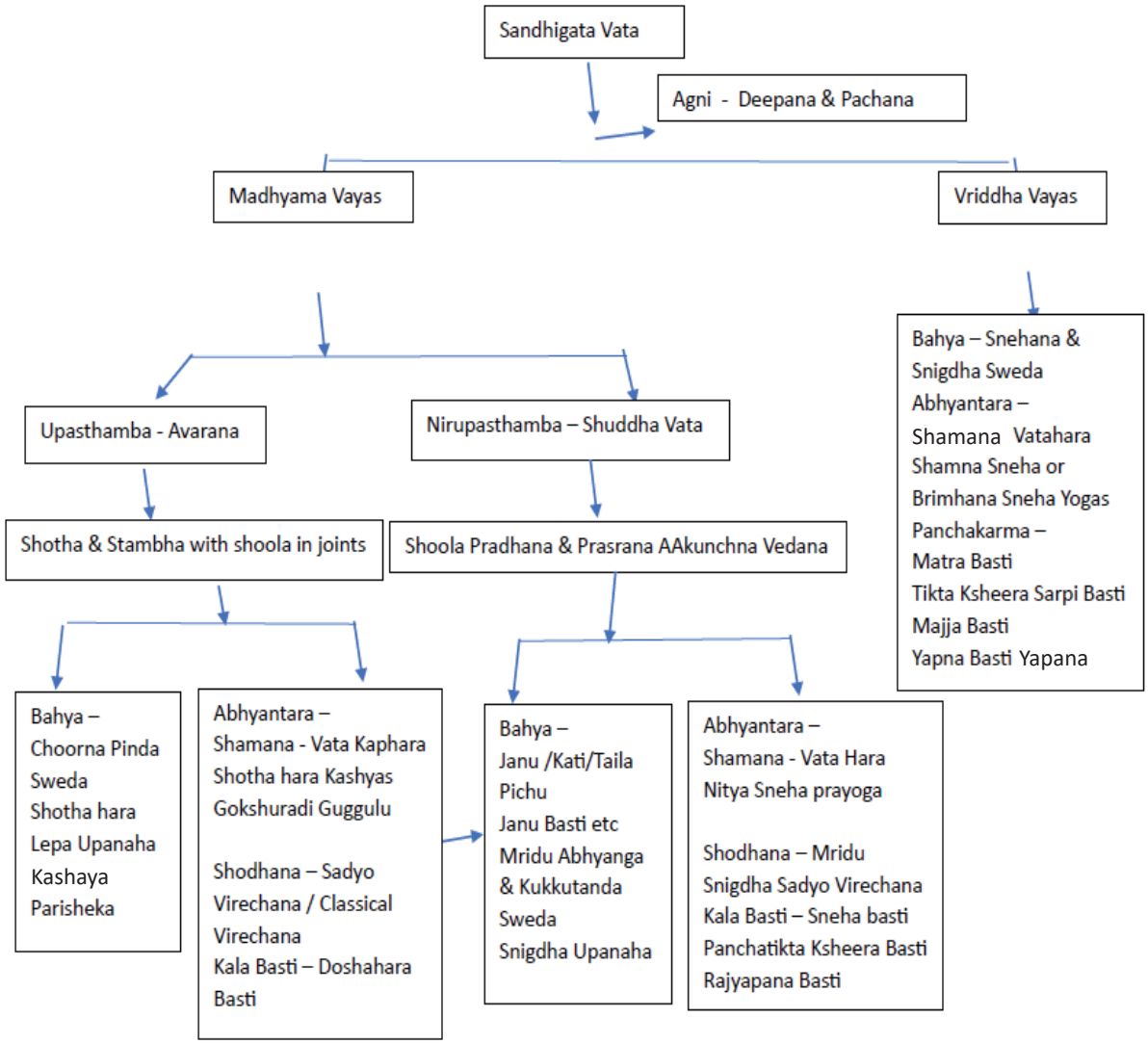
- Cases with complete joint destruction, severe effusion that is not relieved by above management, chronic and severe contractures or deformities like valgus deformity etc., patients with indication for surgical intervention to manage Osteoarthritis
- Patients whose co-morbidities are not controlled at the Level 3 setting and need urgent intervention at higher centres

Table No. 7: Stage-wise treatment plan for Sandhigatavata (Osteoarthritis) at different levels of health facility

Stage of the disease (Osteoarthritis)	Treatment plan at Level -1 health facility	Treatment plant at Level -2 health facility	Treatment plant at Level -3 health facility
Stage 1	*Samshamana* treatment + advice for *Abhyanga-Swedana/ Lepa* at home	*Samshamana* treatment + performing *Abhyanga/ Swedana/ Upanaha/ Lepa*	*Samshamana* treatment + performing *Abhyanga/ Swedana/ Upanaha/ Lepa*. If required, *Parisheka/ Pichu* may be done.
Stage 2	As above	*Samshamana* treatment + *Abhyanga/Swedana/ Upanaha/ Lepa/ Parisheka/ Pichu*	*Samshamana* treatment + performing procedures *Abhyanga/Swedana/ Upanaha/ Lepa/Sthanika Basti + Bandhana + Jalaukavcharana*
Stage 3	*Samshamana* treatment + advice for *Abhyanga-Swedana/ Lepa* at home. Referral to higher centre.	*Samshamana* treatment + *Abhyanga/ Swedana/ Upanaha/ Lepa/ Parisheka/ Pichu/ Sthanika Basti + Bandhana*	*Samshamana* treatment + performing external procedures as above along with *Mriduvirechana/ Basti Karma/ Agni Karma/ Viddha Karma/ Siravedha* if required
Stage 4	*Samshamana* treatment + advice for *Lepa* at home and referral to higher centre.	*Samshamana* treatment + advice for *Lepa* at home and referral to higher centre.	*Samshamana* treatment + External and Bio purification procedures as per expert opinion. If not relieved, refer for modern management at suitable higher centre.
Advice for *Pathya-Apathya* and Yoga/Physiotherapy as per requirement may be given at all stages			

Table No. 8: Dietary advice for *Sandhigata Vata*

Commodity	Pathya (Indicated)	Apathya (Contraindicated)
Pulses	Mung, Udad	Rajma, Chana, Chole, Matar
Cereals	Gehu, Daliya, Sooji	Jau, Besan ,Kottu
Fruits	Anar, Mango, Papeeta, Banana	Refrigerated fruits, Jamun
Vegetables	Mooli, Bhindi, Drumstick, Chukander, Parmal, Brinjal	Kheera, Aloo, Kathal, Karela
Dairy Products	Milk, Ghee, Curd, Makhana, Khoya, Paneer	Ice cream
Spices	Lahsun, Methi, Sarsoo, Ajwain, Hing, Haldi	Hara dhaniya
Sugars & Beverages	Mishri, jaggery	Honey, Alcohol, Cold drinks
Nuts	Baadam, Kaju, Akhrot	Supari
Others	Castor oil, Betel leaf	Bakery Products, fast food, fermented food



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2 RHEUMATOID ARTHRITIS

2
RHEUMATOID ARTHRITIS

NAME OF THE DISEASE

- ***AmaVata* (National Ayurveda Morbidity Code: EC-6)**
- ***VatikaAmaVata* (National Ayurveda Morbidity Code: EC-6.1)**
- ***PaittikaAmaVata* (National Ayurveda Morbidity Code: EC-6.2)**
- ***KaphajaAmaVata* (National Ayurveda Morbidity Code: EC-6.3)**
- ***AtivriddhaAmaVata* (National Ayurveda Morbidity Code: EC-6.4)**
- ***Amavatah* (ICD-11 TM 2: SP11)**
- **Rheumatoid arthritis** (**ICD-11 for mortality and morbidity statistics:** FA20)

CASE DEFINITION[1,2] [Rheumatoid arthritis- http://id.who.int/icd/entity/576319925 and *AmaVata* -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.

Amavata is a disease condition characterized by a constellation of symptoms, including अङ्गमर्दः [generalized bodyache], अरुचिः [tastelessness], तृष्णा [thirst], आलस्यम् [lethargy], गौरवम् [heaviness], ज्वरः [fever], अपाकः [indigestion], शूनता [oedema], गौरवंहृदयस्य [heaviness in the cardiac region], दौर्बल्यम् [weakness], and स्तब्धगात्रम् [stiffness of the whole body

INTRODUCTION

- The reported prevalence of RA in Indian population as per criteria of revised American College of Rheumatology (ACR) is 0.75%.[3]
- 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.[4]In 2019, 18 million people worldwide were suffering from rheumatoid arthritis[5].

- It occurs more commonly in females than in males with a ratio of 3:1. About 70% of people living with rheumatoid arthritis are women, and 55% are older than 55 years.
- Risk factors include female sex, genetic factors (HLA-DRB1, PADI4, PTPN22, CTLA4, IL2RA, STAT4, 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. [6,7]

Aetiology, Pathology and risk factors:

Ama Vata

Etiology –The etiology of the disease has been delineated as per Ayurveda classics as *Viruddha Ahara (consumption of unwholesome diet), Viruddha Chesta (engagement in erroneous habits), Mandagni (diminished Agni)), Nishchalata (sedentary habits), and engaging in exertion immediately following the intake of Snigdha Ahara (unctuous or oily food)*.

Pathology-

The etio-pathogenesis of the disease involves the intake of an unwholesome diet, adoption of an unsuitable lifestyle, and engagement in exertion immediately following the intake of unctuous food, which adversely affects the metabolism, resulting in *Agnimandya*. Subsequently, the formation of *Ama* takes place. The vitiated *Vata*, distributes *Ama* throughout the body via the *Dhamani* (channels of circulation) and finally seeks refuge in *Sleshma Sthana* (comprising locations such as *Amasaya, Sandhi*, etc.). As *Ama* accumulates in these specific sites, it results in manifestation of symptoms such as stiffness, edema, and discomfort affecting both small and large joints.

Risk Factors –Obesity, *Vata-Kapha Prakriti*, habitual intake of unwholesome food and activities, sedentary habits, indulgence in activities that result in *Mandagni* (diminution of *Agni*) can be said to be risk factors for the initiation and progression of the disease.

Clinical presentation:

According to Ayurveda –*Amavata* is described in Madhava Nidana, as a disease with the following characteristic features:[8]

- अङ्गमर्दः[generalized body ache]
- अरुचिः[Anorexia]
- तृष्णा[thirst]
- आलस्यम् [lethargy]
- गौरवम्[heaviness]
- ज्वरः[fever]
- अपाकः[indigestion]
- शूनता[oedema]
- गौरवंहृदयस्य [heaviness in the cardiac region]

- दौर्बल्यम् [weakness]
- स्तब्धगात्रम्[stiffness of the whole body]

Characteristic symptomology based on *Dosha* predominance

a) Vatika Ama Vata: The manifestation of *Amavata* with a predominance of *Vata* is characterized by the presence of pain.

- शूलम् [associated with pain].

b) Paittika Ama Vata: *Amavata* that manifests with the predominance of *Pitta* is characterized by the presence of typical symptoms of *Pitta* such as burning sensation, and/or redness.

- सदाहः [associated with burning sensation],
- रागः [redness/congestion]

c) Kaphaja Ama Vata: *Amavata* that manifests with the predominance of *Kapha* is characterized by the presence of typical symptoms of *Kapha* such as stiffness/restricted mobility, heaviness of either the affected area or generalized heaviness and itching.

- स्तिमितम् [feeling as if covered with wet cloth which can be interpreted as a heavy feeling which would translate as restricted mobility or stiffness associated with movement],
- गुरुः [heaviness],
- कण्डूः [itching]

Ativriddha Ama Vata

Advanced stage of आमवातis characterized by रुक् (pain) in हस्तसन्धि (joints of hands), पादसन्धि (joints of feet), शिरोसन्धि [joints of head], गुल्फसन्धि [ankle joint], त्रिकसन्धि [joints of the sacroiliac region], जानुसन्धि [knee joint], ऊरुसन्धि [the hip joint], शोफः (swelling) in हस्तसन्धि [joints of hands], पादसन्धि (joints of feet], शिरोसन्धि [joints of head], गुल्फसन्धि [ankle joint], त्रिकसन्धि [joints of the sacroiliac region], जानुसन्धि [knee joint], ऊरुसन्धि [hip joint], वृश्चिकविध्दइवरुजा[pain similar to scorpion bite], अग्निदौर्बल्यम् [diminution of अग्नि], प्रसेकः [excessive salivation], अरुचिः [Anorexia], गौरवम् [heaviness of body], उत्साहहानि [lack of enthusiasm], वैरस्यम् [altered taste sensation], दाहः [burning sensation], बहुमूत्रता [polyuria], कुक्षिकाठिन्यम् [hardness of abdomen], शूलम् [colicky pain in the abdomen], निद्राविपर्ययम् [altered sleep], तृट् [thirst], छर्दिः [vomiting], भ्रमः [giddiness or dizziness], मूर्च्छा [syncope/attacks of swooning], हृद्ग्रहम् [stiffness in cardiac region], विट्विबद्धता [constipation], जाड्यम् [dullness/frigidity/inactiveness], आन्त्रकूजनम् [borborygmus/gurgling sound of intestines], आनाहम् [barborygmus with distention]

Prognosis:

In Ayurveda, the prognosis of *Amavata* is deemed curable when associated with the involvement of one *Dosha*, considered incurable but manageable when two *Doshas* are implicated, and challenging to manage when characterized by generalized body swelling and the involvement of all three *Doshas* in the pathogenesis.[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.

Table No.1: 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.

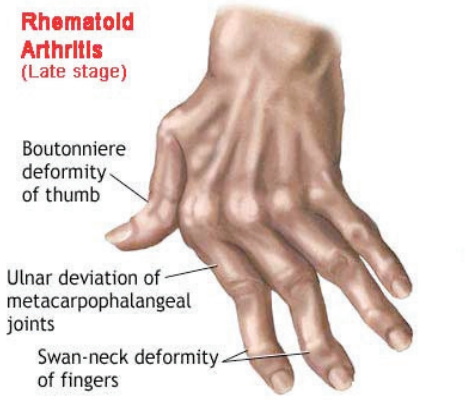
CLINICAL EXAMINATION

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.

Flexor tendon tenosynovitis is a frequent hallmark of RA and leads to decreased range of motion, reduced grip strength, and 'trigger' fingers.

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:[9]

Table No.2: 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
• **Ocular**	• Keratoconjunctivitis sica • Episcleritis, • Scleritis
• **Lymphatic**	• Felty syndrome • Splenomegaly

Table No.2: EXTRA-ARTICULAR MANIFESTATIONS	
• **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[10]

Table No.3: Essential Investigations of finding (RA.)

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

Table No.4: Advanced (RA.)

INVESTIGATION	• FINDINGS
X-ray	• It shows reduced joint space, erosion of articular margins, sub-chondral 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.

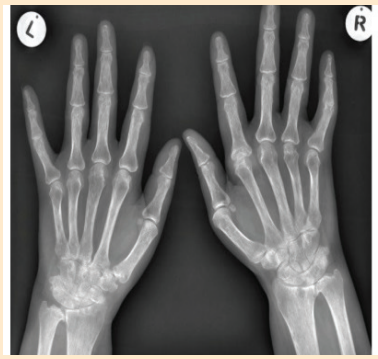
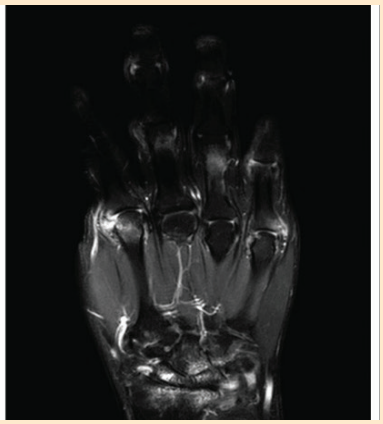
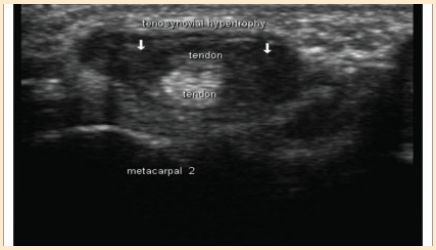
Radiographic features of Rheumatoid Arthritis[11]	
Fontal radiograph of both hands demonstrating bilateral symmetrical disease, marked periarticular osteopenia; widespread joint space narrowing; erosions of the radius, ulnar and carpal bones (worse on left hand); and subluxation of the second metacarpophalangeal 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.	

Table No5: Characteristics to be observed during local examination of the affected joint

Signs		
Appearance दर्शन	Swelling	संधिशोथ
	Deformity	संधिवक्रता
Feel स्पर्श	Joint tenderness	सन्धिरुक्/ स्पर्शासहत्वम्
Movement गति	Discomfort on movement	सन्धिरुक्
	Morning stiffness	स्तब्धगात्रम्

DIFFERENTIAL DIAGNOSIS:

Ayurveda: *Sandhigatavata*[12], *Amavata*[8], *Vatarakta*[13], *Sama Vayu, Asthi-majjagata Vata*[14].

Described in detail for mostly prevalent conditions as follows –

Table No.6: Differential diagnosis of *Ama Vata*

Presentation with	***Sandhigatavata***	***Amavata***	***Vatarakta***	***Sama Vayu***
Ama Lakshana	Not pathognomonic	Present	Not pathognomonic	Present
Jwara	Absent	Present	Present	Mild *Jwara* may manifest
Vedana	On flexion and extension of joints	Excessive pain (like scorpion bite), not related with movement. Aggravation on cloudy weather, with eastern winds and in the morning & night	*Mushika Damsavata Vedana* (like rat bite)	Mostly generalized mild to moderate pain associated with heaviness, stiffness and drowsiness, Aggravation on days with cloudy weather
Shotha	Soft swelling (*Vatapurnadritisparsha*)	Tender, may include multiple sites in the body	*May be present [Mandala yukta]* (with discoloration)	Fleeting, mild
Commonly affected joints	Mainly weight bearing joints large joints (knee & Hip),	Small joints, *Trik pradesha*, mostly symmetrical manifestation	Small joints mainly of hand and foot	Any joint/(s)
Upashaya	*Abhyanga*	*Ruksha sweda*	*Raktamokshana*	*Langhan, Pachana*
Dosha	Predominantly *Vata*	*Vata Pradhan Tridosha*	*Vata Dosha*	*Ama* inflicted *Vata*

Table No.7: Differential Diagnosis:[15,16]

Condition	**Differential Features**
Systemic Lupus Erythematosus	• Arthralgia often associated with early morning stiffness. • A butterfly-shaped facial (malar)rash • Photosensitivity • Oral ulcers
Chronic Lyme disease	• Joint and muscle pain • Fever and headache, night sweats • Irregular red rash • Sensitivity to light

Condition	Differential Features
Osteoarthritis	• Insidious onset over months or years begins later in life i.e., over the age of 45, but more often over 60 years. • 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 oligo-arthritis 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.[17]

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."[18]

PRINCIPLES OF MANAGEMENT-

Red Flag Signs:

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

- More visible swollen and tender jointsSymmetrical 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 Ayush and can be assessed for the same in the follow ups for tapering or discontinue the treatment in consultation with conventional physician.

Langhana (regulated fasting etc.), *Swedana* (sudation), intake of *Tikta* (bitter tasting), *Katu* (pungent) substances, *Virechana* (purgation), *Snehapana* and *Basti* karma-these are the measures to be adopted generally, keeping in view the needs of a particular case. In these, *Ruksha Swedan*a. sudation with dry substances like brick, and etc. and oil less *Upanahas* should be employed.

Yogaratnakara-Amavatachikitsa verse 1-2

लंघनंस्वेदनंतिक्तदीपनानिकटूनिच विरेचनंस्नेहपानंबस्तयश्चाममारुते [1]
रुक्षस्वेदोविधातव्योवालुकापोटलैस्तथा उपनाहाश्चकर्तव्यास्तेपिस्नेहविवर्जिता[2]

Given the distinctive interplay of *Dosha* involvement, particularly the intricate amalgamation of *Ama* and *Vata*, the therapeutic approach centers on *Ama Pachana*. In this context, *Snehana* procedures are generally contraindicated, as their application may lead to the exacerbation of symptoms. Internal administration of *Sneha* should be undertaken cautiously, considering the status of *Agni*. External application of oil should also be administered with care. These guidelines underscore the importance of precision and prudence in therapeutic interventions to ensure optimal outcomes in the management of conditions characterized by the amalgamation of *Ama* and *Vata Doshas*.

(A) Prevention management[19]

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:
    - Splintage of the joints in proper position during the acute phase
    - The application of heat or cold can relieve pain or stiffness.
    - Joint mobilization exercises to maintain joint to functions.
    - 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 or maintain an appropriate weight.

Correction of *Agni*: According to Ayurveda, root cause of all diseases is *Mandagni* i.e.,abnormal digestion and metabolism. So, correction of *Agni* is very crucial and that would mean intake of food and following of lifestyle that is conducive to normal functioning of *Agni*.

Table No. 8: *Pathya Apathya*

Dos	Don'ts (Disease aggravating factors)
Properly cooked fresh and favorable food intake on appropriate timing in appropriate quantity	Curd, fish, jaggery, milk, blackgram, rice flour, *virudhaahara,* heavy and sticky food items
Aged cereals like wheat and rice, green gram, *yava*, *kulatha* (horse gram), *syamaka, kodrava, raktashali*	Excessive intake of dried/preserved/ frozen vegetables or foods, regular and excessive intake of lentils like peas, sprouts, raw vegetables and salads, cabbage, cauliflower, celery, brinjal, potatoes and tomatoes
Vegetables like *Vastuka*, *Patola/ paraval*(*Trichosanthes dioica*), *Shigru*(drum stick), *Karvela(karela),* ginger, garlic	Refined foods such as bakery products made of white flour and vegetable oils, junk food, reheated or burnt food
Drinking luke warm or warm water or boiled water brought to normal temperature, water processed with *Panchakola*	cold drinks, beverages, chilled food and ice cream; Smoking
Atapa Sevana (Sun bath with mild sun rays), Comfortable mattress for sleeping (*Sukha Shayya*), *Ushnodaka Snana*(Warm water bath)	Insufficient sleep at night or frequent changes in sleep pattern, habitual postprandial day sleeping
Appropriate exercises and appropriate amount of rest	Frequent and long duration fasting habits, inadequate diet intake, irregular meal timings, eating untimely e.g., during late night or binge eating etc.; frequent overeating
	suppression of natural urge especially of hunger, bowel and urine and emotions

Yoga and other exercise: As recommended by qualified yoga instructors or physiotherapist

(B) Interventions : -

<u>At Level 1</u>- 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.

OPD level management –If the patient shows mild features of *Ama Vata,* two or more of following forms of medications (*Kwatha, Guggulu, Churna, Lepa* etc.) may be given along

with diet and lifestyle advocacy:

Table No.9: Single drugs/Compound Formulations for internal/external medication

Sr. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupana
1.	*Rasnasaptaka Kashaya Churna*[20]	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
2.	*Shadanga Kwatha Churna*[21]	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
3.	*Dashamula Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
4.	*Erandmoola Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
5.	*Rasnadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
6.	*Shunthi-Guduchi Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
7.	*Dhanyak- Nagar Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
8.	*Gandharvahastadi Kashaya*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
9.	*Maharasnadi kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water
10.	*Sanjivani vati*	*vati*	125-250 mg in 2-3 divided dose	After food	15 days to one month	Lukewarm water
11.	*Amritarishta*[22]	*Arishta*	50-80 ml in two divided doses	After meal	15 days to one month	Equal amount of lukewarm water
12.	*Punarnavasava*[23]	*Asava*	50-80 ml in two divided doses	After meal	15 days to one month	Equal amount of lukewarm water
13.	*Yograja Guggulu*[24]	*Vati*(500 mg)	1-3 gm in 2-3 divided doses	After food	15 days to one month	*Rasna-saptaka Kwatha* / Warm water
14.	*Simhanada Guggulu*[25]	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After food	15 days to one month	Lukewarm water
15.	*Punarnava Guggulu*[26]	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After food	15 days to one month	Lukewarm water
16.	*Ajamodadi Churna*[27]	Powder	3-6 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Lukewarm water
17.	*Sudarshan Churna*	Powder – Fant Kalpana	3-6 gm in two divided doses	morning or in the evening empty stomach	15 days	Luke warm water
18.	*Vaishvanara churna*	Powder	1-2 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Lukewarm water

Sr. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupana
19.	*Trikatu Churna*[28]	Powder	1-2 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Lukewarm water
20.	*Shunthi Churna*	Powder of dried tuber of *Zingiber officinale*	2-3 gm in 2-3 divided doses	After meal	15 days to one month	Warm Water
21.	*Guduchyadi Churna*	Powder of *Guduchi, Shunthi, Pathya*	2-3 gm in 2-3 divided doses	After meal	15 days to one month	Warm Water
22.	*Chitrakadi Vati*	Vati, 250 mg	1-2 gm in 2-3 divided doses	After food	15 days to one month	Lukewarm water
23.	*Dashanga Lepa*	Powder for external application on affected joint	5-10 gm	--	15 days to one month	Warm Water

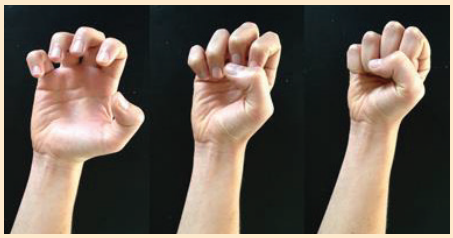
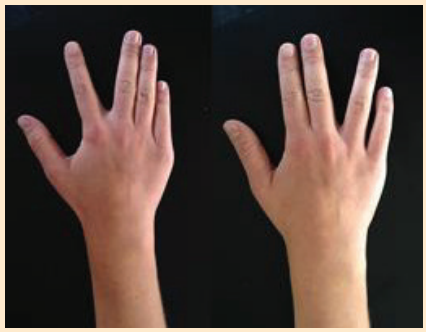
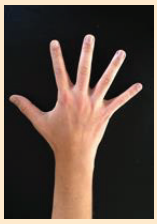
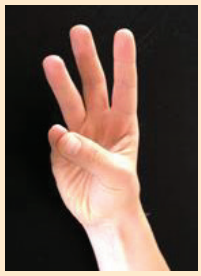
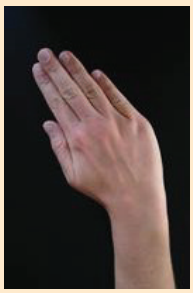
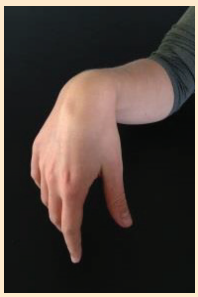
Combination of medicines may be used as per the presenting complaints and co-morbidities.

** The *Guggulu* Formulations may be advised to ingest after crushing the tablets.

- ***Swedana*** (hot fomentation) **–**Fomentation with hot water bag, or any other available modality. *Valukasveda, patrapindasveda* or *lavanapottalisveda* may be advised to the patient
- ***Lepa***(application of medicinal paste) *–Jadamayadi Lepa, Kottamchukkadi Lepa, Nagaradi lepam,* garlic paste etc. can be applied if swelling is present.
- ***Abhyanga*** (oil application/massage)**-**The application of warm medicated oils such as *Murchita Tila Taila, Panchaguna Taila, Kottamchukkadi Taila, Laghuvishagarbha Taila,* and *Brihat Saindhavadi Taila* is advised specifically for joint massage. **This intervention is suitable only subsequent to the resolution of *Ama Lakshanas*, encompassing the alleviation of symptoms like edema (local/generalized) and redness.** It is imperative to initiate the use of these oils judiciously, ensuring that the inflammatory indicators have sufficiently subsided before commencing joint massage**.**

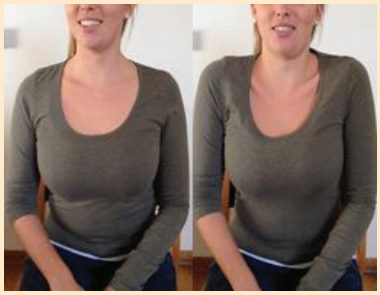
Recommended and restricted diet & lifestyle[29,30] –

- As mentioned above. *Panchakolasiddha Jala* may be advised for drinking throughout the day as per requirement.
- **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[31]	
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.

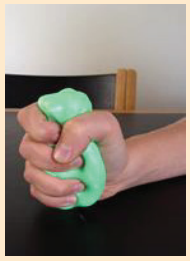


H: Put alternating from back of the head and the loin

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.

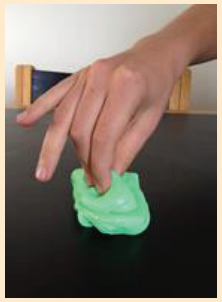
I: Gross grip

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.



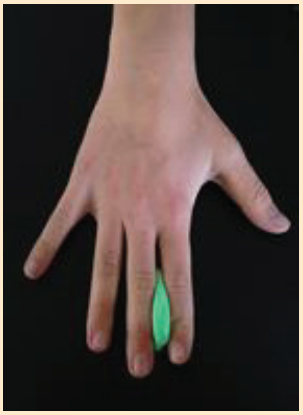
J: Finger pinch

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.



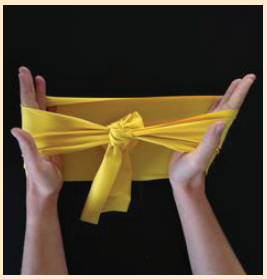
K: Finger adduction

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*[32]:** Various yoga practices are helpful for the management of patients with arthritis. These include *kriyas (kunjal and kapalbhati) , simple joint movements, practices of sukshmavyayama, yogasanas (tadasana, katichakrasana, konasana, urdhwahastottanasana, uttanapadasana, gomukhasana, marjariasana, ushtrasana, bhadrasana, bhujangasana, makarasana, shavasana), pranayama (nadi shodana 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 with 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[33] is recommended for RA.
- ***Physical therapy:*** *can help regain and maintain overall strength and target specific joints.*
- ***Occupational therapy:*** *can help develop, recover, and 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: [34,35]

- 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 address any misconceptions they may have.
- Explaining to the patients', the importance of monitoring their condition, and to seak rapid specialist care if disease worsens or they have a flare-up.
- Participation in existing educational activities, including self-management programmes.
- Regularly measure C reactive protein to inform decision making about changing or increasing treatment to control disease or cautiously decreasing treatment when disease is controlled. If the disease is of recent onset and active, measure the laboratory variables monthly until and optimal control is achieved 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[36]

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

- Management with single herbs and compound formulations for internal and external use
- External therapeutic procedures
- Bio-purification procedures
- Advice of *Pathya-Apathya*
- Referral criteria

Clinical Diagnosis: Same as level[1].The case referred from Level1,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.

For the patients referred from Level-1, treatment given in level-1 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 may also be considered while giving prescription. Any of the following medicines may be added as appropriate. Indoor management may be opted, if necessary, as appropriate, per patient health, disease severity, and amenability to bio-purification therapy etc.

Table No. 10: Single herbs/ compound formulation for internal and external use

Sr. No.	Formulation	Dosage form	Dose (per day)	Time	Duration and Frequency	Adjuvants/ Anupaana
1	*Rasna Guggulu*	*Vati*	0.5 –1.5 gm in 2-3 divided doses	After meal	15 days	*Rasnadi Kvatha /Dashamula Kwatha*
2	*Chitrakadi Vati*[37]	*Vati*	1 -2 gm in 2-3 divided dose	After food	15 days to one month	Lukewarm water
3	*Agnitundi vati*	*Vati*	125-250 mg in 2-3 divided dose	After food	15 days to one month	Lukewarm water
4	*Vettumaran Gulika*	*Gutika*	250-375 mg in 2-3 divided dose	After food	15 days to one month	Lukewarm water
5	*Tribhuvankirti Rasa*[38]	*Rasa*	125-250 mg in 2-3 divided dose	After food	15 days to one month	Lukewarm water
6	*Vatagajankusha Rasa*[39]	*Rasa*	250 mg in 2-3 divided dose	After food	15 days to one month	Lukewarm water
7	*Dashamula Kashaya*[40]	Decoction	60-80ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water
8	*DashmulaKatutraya Kwatha*[41]	Decoction	60-80ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water

➢ **External procedures as per availability of medicines and resources -**

- ***Swedana***(hot fomentation)**-** with hot water bag, *Nadi Sweda/Pariseka* with decoction of *Nirgundi, Dashamula, Eranda, Balamula, Dhanyamla Dhara, Kashaya Dhara* (pouring of fermented liquid or medicated decoctions on whole body) etc. *Rooksha Churna Pinda Sweda (*dry pottali heat with medicated powders like *Kolakulathadi Churna, Kottamchukkadi Churna, Jadamayadi Churna*), *Patra Pinda Sveda* (local fomentation with heated herbal packs containing leaves of *Nirgundi, Eranda* etc.), *Valukasveda, Pattasveda* or *Lavanapottali sveda* etc are generally indicated and *Snigdha Churna Pinda Sweda, (Pottali Sweda)* after application of suitable oil) may also be considered in cases where satisfactory response is not obtained with dry *Pottali*.
- ***Lepa*** *(*application of medicinal paste*) –Jadamayadi Lepa, Kottamchukkadi Lepa,* garlic paste/ *Shunti Lepa, Arka patra/Erandapatra* etc. can be applied if swelling is present.
- ***Upanaha*** (fomentation with herbal paste) *–Kolakulathadi Upanaha, Kottamchukkadi Upanaha* may be considered for local fomentation, in pain predominant conditions with restricted movements.
- ***Pichu****– With oils like Murivenna, Dhanwantaram Taila, Kottamchukkadi Taila, Sahacharadi Taila, Bala Taila* etc. (Only when *Ama lakshanas* are subsided and is to be judiciously prescribed with regular monitoring of symptoms and level of disease activity).

- ***Abhyanga-*** on the affected joints with warm medicated oils like, *Panchaguna Taila*, *Kottamchukkadi Taila, Bala Taila, Brihat Saindhavadi Taila, Dhanwantaram Taila, Karpuradi taila, Pinda taila*.(only when *Ama lakshanas* such as acute pain, swelling etc are subsided)
- Bio-purification procedures like *Panchakarma* and other procedures: If bio-purificatory therapies are indicated, the incorporation of *Virechana* and *Basti Chikitsa* can be contemplated as a therapeutic intervention for *Amavata*. It is advisable to assess the patient's specific requirements and tailor the type of *Virechana* and *Basti* and duration of *Basti* accordingly.
- For *Virechana, Erandataila* in the dose of 10-20ml may be given**,** as per patient *Prakrti* and *Koshta* assessment.
- *Kshara Basti* (per rectal administration of the mix of *Dhanyamla, Shunthi, Guda,Saindhava* and *Taila)*
- *Vaitarana Basti (*per rectal administration of the mix of *Guda, Saindhava, Taila, Chincha (Tamarind pulp) and Gomutra.*
- *Matra Basti* (per rectal administration of 60 ml of any of these medicated oils) – *Dhanwantaram Taila, Pippalyadi Anuvasana Taila*, *Sahacharadi Taila, Saindhavadi Taila* etc. once *Ama lakshanas* subsided.
- A Suitable *Basti* Schedule may be considered if the patient is fit for *Basti Karma* in the form of *Kala Basti/Yoga Basti/Karma Basti* with *Anuvasana* with *Dhanwantaram Taila, Pippalyadi Anuvasana Taila*, *Sahacharadi Taila, Saindhavadi Taila* and *Niruha basti* (per rectal administration with Decoction based enema can be given as *Rasnaerandadi Niruha, Dashamula Niruha,* etc.
- *Vatanulomana/Mridu Virechana* with mild laxatives like *Shunthi siddha Erandataila* 5ml with warm milk/water at night or early morning before sunrise*, Triphala* powder or *Avipattikara* powder or *Drakshavaleha* 5-10 gm daily at night with lukewarm water

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) It is essential to tailor therapeutic interventions according to the *Roga Bala* (strength of the disease) and *Rogi Bala* (patient's strength); considering the nature of *Dosha* involvement. Customized approaches ensure the optimization of therapeutic outcomes aligned with individual health profiles and disease characteristics.

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, paraesthesia, weakness, unsteadiness, etc.)
- Advanced stages of disease like deformities 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.

Management with single herbs and compound formulations for internal and external use

➢ External therapeutic procedures

➢ Bio-purification procedures

➢ Advice of *Pathya-Apathya*

➢ Referral criteria

❖ **Management:** For the patients referred from Level-1 or 2, treatment given in level-1 &/or 2 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 & 2 may be considered while giving prescription and any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

Table No. 11: Single herbs/ compound formulation for internal and external use

Sr.No.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/ Anupaana	Mode of administration
1.	*Vatavidhvamsa Rasa*[42]	Tablet/ powder	500 mg in 2 divided doses	Empty stomach	15 days to one month	Warm water/ Honey/ ghee	Oral
2.	*Vatari Rasa*[43]	*Vati*	250-500 mg in 1 or 2 divided doses	Empty stomach	15 days to one month	*Shunthi Kwatha/ Erandamoola Kwatha*	Oral
3.	*Ekangaveer Rasa*[44]	Tablet/ powder	125-375 mg in 1-3 divided doses	After meal	15 days	*Rasnadi Kashaya*/ fresh ginger juice	Oral
4.	*Vatagajankush Rasa*[39]	Powder	125-250 mg in 1-2 divided doses	After meal	15 days	*Manjishtha Kashaya*/ Honey	Oral
5.	*Vatari Guggulu*[45]	Tablet	500 mg to 1 gm in 1-2 divided dose	After meal	15 days to 1 month	Warm water	Oral

Sr.No.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/ Anupaana	Mode of administration
6.	*Simhanada Guggulu*[25]	Tablet	500 mg to 1 gm in 1-2 divided dose	After meal	15 days to 1 month	Warm water	Oral
7.	*Amrita Ghrita*[46]	Ghee	10-20 gm in two divided doses	Empty stomach	1-2 months	Warm Milk/ Warm water	Oral
8.	*Indukanta Ghrita*[47]	Ghee	10-20 gm in two divided doses	Empty stomach	1-2 months	Warm Milk/ Warm water	Oral
9.	*Panchamrita Lauha Guggulu*[48]	Tablet	500 mg to 1 gm in 1-2 divided dose	After meal	15 days to 1 month	Warm water	Oral
10.	*Panchatikta Ghrita*[49]	Ghee	10-20 gm in two divided doses	Empty stomach	1-2 months	Warm Milk	Oral
11.	*Lashunadi Ghrita*[50]	Ghee	5-10 gm	Empty stomach	15 days to one month	Warm water/ Milk	Oral
12.	*Maharasnadi kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water	Oral
13.	*Dashamula Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water	Oral
14.	*Gandharvahastadi kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water	Oral
15.	*Ranasaptakam Kwatha*	Decoction	60-80 ml in two divided doses	Before meal	15 days to one month	Lukewarm Water	Oral
16.	*Varanadikashyam*	Prepared decocotion	30ml kashyam added in 70 ml boiled than cooled water in two divided doses.	Before meal	15 days to one month	Lukewarm Water	Oral
17.	*Sahacharadi kashyam*	Prepared decocotion	30ml kashyam added in 70 ml boiled than cooled water in two divided doses.	Before meal	15 days to one month	Lukewarm Water	Oral
18.	*Dhanvanatar kashyam*	Prepared decocotion	30ml kashyam added in 70 ml boiled than cooled water in two divided doses.	Before meal	15 days to one month	Lukewarm Water	Oral
19.	*Balarishta*	*Arishta*	12-24 ml twice daily	After meal	15 days to one month	-	Oral
20.	*Abhayarishta*	*Arishta*	12-24 ml twice daily	After meal	15 days to one month	-	Oral
22.	*Ashwagandharishta*	*Arishta*	12-24 ml twice daily	After meal	15 days to one month	-	Oral
23.	*Yogaraja Guggulu*	*Vati*(500 mg)	1-3 gm in 2-3 divided doses	After food	15 days to one month	*Rasna-saptaka Kvatha* /warm water	Oral
24.	*Gandarvahasta taila*	Taila	6-12 gm	Bedtime	7 days	Lukewarm water	Oral
25.	*Panchaguna Taila*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--	External(if patient responds well to oil application)

Sr.No.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/ Anupaana	Mode of administration
26.	*Nirgundi Taila*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--	External(if patient responds well to oil application)
27.	*Laghuvishgarhba oil*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--	External(if patient responds well to oil application)
28.	*Brihat saindhavadi oil*	Warm oil for local application	5-10 ml or less as required	--	15 days to one month	--	External(if patient responds well to oil application)

- **External procedures –**
  - *Kashaya Dhara* (continuously pouring warm decoctions of medicinal herbs)
  - *Upanaha* (Sudation by poultice application)
  - *Ruksha Churna Pinda Swedana* – dry *pottali* heat with medicated powders like *Kolakulathadi Churna, Kotttamchukkadi Churna, Jadamayadi Churna.*
  - *Snigdha Churna Pinda Swedana – Pottali* heat with medicated oil and materials like leaves, powder or *Shashtik Shali rice etc.*
  - *Abyangam-* Therapeutic massage can be done with medicated oil like, *Dhanvantaram oil, karpooradi oil, chinchadi oil etc.*
  - *Pichu– Murivenna, Dhanwantaram Taila, Masha Taila, Kottamchukkadi Taila, Sahacharadi Taila, etc*. (only when *Ama lakshanas* are subsided)
- **Bio-purification procedures like Panchkarma and other procedures:**
  - *Virechana* (medically induced purgation)-Mild purgation may be preferred with *Shunthisiddha Eranda Sneha* 30-35 ml with warm water in empty stomach or *Trivrit leha* 3-6 gm after meal twice a day. The dose should be based on the *Koshta* (gut sensitivity).[32]
  - *Ksharabasti*, *Vaitarana Basti, Yoga Basti* (Combination of *Anuvasana* and *Niruha Basti*), *Rajayapana Basti, Anuvasana Basti* with *Saindhavadi Taila* etc may be opted, if the patient is deemed fit for the same as per the assessment of *Rogavastha* and *Roga Bala*

Recommended Diet and Lifestyle: Same as levels 1&2

Restricted Diet and Lifestyle: Same as levels 1&2

Follow Up (every 15 daysor earlier as per the need)

Referral Criteria

- Same as mentioned earlier at level2,plus
- Other modalities can be considered depending on the case and to rehabilitate properly.

Table No. 12: Stage-wise treatment plan for Amavata (Rheumatoid Arthritis) at different levels of health facility

Stage of the disease (Rheumatoid Arthritis)	Treatment plan at Level -1 health facility	Treatment plant at Level -2 health facility	Treatment plant atLevel -3 health facility
Stage 1	• *Samshaman* treatment + advice for *Swedana/ Lepa/ Abhyanga* at home • Baluka Sweda at home • *Mridu virechana*	• *Samshaman* treatment + performing *Abhyanga/ Swedana/ Upanaha/ Lepa* • *Mridu virechana*	• *Samshaman* treatment + performing *Abhyanga/ Swedana/ Upanaha/ Lepa*. • If required, *Kashaya* Dhara may be done. • *Mridu virechana*
Stage 2	As above	*Samshaman* treatment + *Abhyanga/Swedana/ Upanaha/ Lepa/Pichu Mridu virechana*	*Samshaman* treatment + performing procedures *Abhyanga/Swedana/ Upanaha/ Lepa* If required, *Kashaya* Dhara/ *Pichu* may be done. *Mridu virechana*
Stage 3	*Samshaman* treatment + advice for *Abhyanga/ Swedana/ Lepa* at home. Referral to higher centre.	*Samshaman* treatment + *Abhyanga/Swedana/ Upanaha/ Lepa/ Parisheka/ Pichu/ + Basti Karma*	*Samshaman* treatment + performing external procedures as above along with *Mridu virechana/ Basti Karma* if required
Stage 4	*Samshaman* treatment + advice for *Abhyanga/ Swedana/ Lepa* at home and referral to higher centre.	*Samshaman* treatment +*Basti Karma*+advice for *Abhyanga/Swedana/ Lepa* at home and referral to higher centre.	*Samshaman* treatment + External and Bio purification procedures as per expert opinion. If not relieved, refer for modern management at suitable higher centre.
Advice for *Pathya-Apathya* and Yoga/ Physiotherapy as per requirement may be given at all stages			

Table No. 13: Diet related general advice for *AmaVata*

Commodity	Pathya (Indicated)	Apathya (Contraindicated)
Pulses	Mung	Rajma, Chana,Chole, Matar, Udad
Cereals	Gehu, Daliya,Sooji	Jau, Besan ,Kottu
Fruits	Anar, Mango, Papeeta	Refrigerated fruits, Jamun

Commodity	Pathya (Indicated)	Apathya (Contraindicated)
Vegetables	Mooli, Bhindi, Drumstick, Chukander, Parmal, Karela	Kheera, Aloo, Kathal, Brinjal
Dairy Products	Ghee (in niram stage)	Milk, Curd, Makhana, Khoya, Paneer, Ice cream
Spices	Lahsun, Methi, Sarsoo, Ajwain, Hing, Haldi	Hara dhaniya
Sugars & Beverages	Mishri, jaggery	Honey, Alcohol, Cold drinks
Nuts	Baadam, Kaju, Akhrot	Supari
Others	Castor oil	Bakery Products, fast food, Fermented food

Table No. 14: Demonstration of differential choice of drugs/procedure as per condition

Procedure/ Medicine	**Oil for *Abhyanga /Pichu***	**Oil for *Kshar-abasti***	**Oil for *Matra-basti***	***Kashaya* for *Parishek***	***Upanaha***	***VataAnuloman/ MriduVirechan***	***Lepa***
DoshaAnubandha/ Disease condition							
Vataja	*Dhanwantaram taila, Sahacharadi taila*	*Brihat saindhvadi taila*	*Dhanwantaram taila, Sahacharadi taila*	*Dasamula kashaya*	*Salvana, Kolakulatthadi churna*	*Eranda taila, Gandharvahastadi Taila*	*Kola kulathadi ,Rasnadi lepa*
Pittaja	*Dhanwantaram taila*	--	*Dhanwantaram taila*	--	--	*Avipathikara churna*	*Jadamayadi Lepa, Ellumnishadi Lepa*
Kaphaja	*Kottamchukkadi, Brihat Saindhvadi taila*	*Brihat Saindhvadi taila, Murivenna*	*Brihat Saindhavadi taila, Eranda taila*	*Dasamula kashaya*	*Salvana, Kolakulatthadi churna*	*Triphala, Eranda taila, Gandharvahastadi Taila*	*Kottamchukkadi lepa*
Samaavastha	--	*Brihat Saindhvadi taila, Murivenna*	--	--	--	*Eranda taila*	*Kottamchukkadi lepa*
Ati Vriddha Avasta	*Kottamchukkadi, Brihat Saindhvadi taila, Dhanwantatram taila, Sahacharadi taila*		*Dhanwantaram taila, Sahacharadi taila*	*Dasamula Kashaya*	*Salvan, Kolakulatthadi churna*	*Eranda taila, Gandharvahastadi Taila*	

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3 CERVICAL SPONDYLOSIS

3
CERVICAL SPONDYLOSIS

NAME OF THE DISEASE

Cervical Spondylosis (ICD 11 Code: FA80.0 – FA80.3)

- ***Greevasthambha (Kevalavata)*** ग्रीवास्तम्भः(केवलवात) (National Ayurveda Morbidity Code:AAB-33) (ICD-11 TM2: SP45)
- ***Manyastambah (Kevalavata)*** मन्यास्तम्भः (केवलवात) (National Ayurveda Morbidity Code: AAB-73

CASE DEFINITION

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]

SandhigataVata: This term refers to the etiology associated with musculoskeletal degeneration.

The disorder is characterized by वातपूर्णदृतिस्पर्शः *Vatapoornadriti Sparsha* (swelling as if filled with air during palpation), सन्धिशोफः *Sandhishopha* (swelling in the joints), प्रसरणाकुञ्चनयोःसवेदनाप्रवृत्तिः *Prasarana Akunchanchanayoh Pravrittishcha Savedana* (pain during flexion and extension of joint), सन्धिशूलम् *Sandhishoola* (joint pain), (सन्धि) कार्यहानिः *Karyahaani* (loss of joint mobility).

Grivastambha and ***Manyasthambha*** are defined as neck stiffness due to *Vata Dosha* (केवलवात). This term refers to the neurological involvement associated with the neck region. The term *Greeva* and *Manya* are synonyms and refer to the neck region. The term *Stambha* literally means stiffness.

INTRODUCTION

- Cervical spondylosis (CS) typically manifests after an individual reaches their fifth decade of life.[3,4] Around 80-90% of individuals experience disc degeneration by the time they reach the age of 50.[5,6,7]
- Symptoms tend to occur more frequently in men than in women, with the highest incidence between 40 and 60.[8,9,10,11]
- In the adult population, the lifetime prevalence of CS is 48.5%.[12]

- In India, peak prevalence occurred in the 40-49 age group, with a male predominance.[13]

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.[14]

- The changes in CS are primarily a result of the natural degeneration accompanying the ageing process.[15] Other risk factors include continual occupational trauma[16], 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 .[17] The development of CS18,[19,20] 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 discs. 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.[21] 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.

Signs:[22,23]

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:

- 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:[24]

- 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

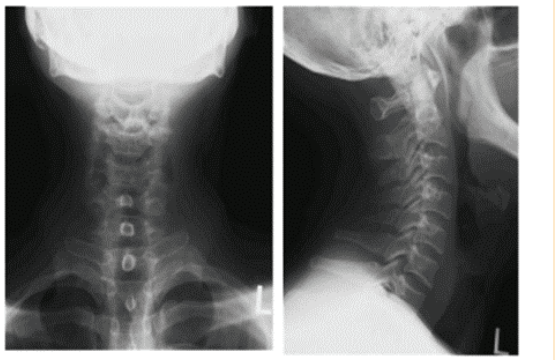
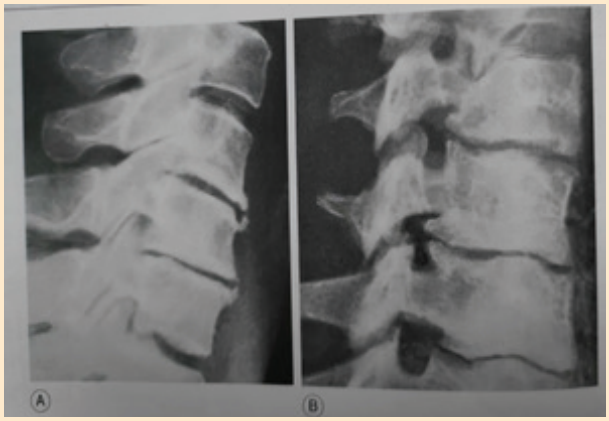
SUPPORTIVE INVESTIGATIONS[25]

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 non-traumatic neck pain and no red flags, initial imaging typically starts with cervical spine radiographs. Recommended by ACR
Blood test: Full blood count, ESR, CRP	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)

DIFFERENTIAL DIAGNOSIS

Clinical Syndromes resembling CS[27]:

	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)
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-diaphragmatic 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

Perspective of Ayurveda on Etiology –

The disease *Greeva/ Manya Stambha* or *Sandhigata Vata* comes under the umbrella of *Vata Vyadhi* so specific etiology for each *Vata Vyadhi* is not mentioned in the Ayurveda texts. The etiology of *Vatavyaadhi* is considered while planning for treatment. Etiological factors can be broadly categorized in 3 headings in Ayurveda

1. *Ahara* (Dietary causes)

2. *Vihara* (Life style and Regimen)

3. *Manasika bhava* (Psychological factors)

- *Ahara* (Dietary factors) – *Alpabhojana* (inadequate food intake) and *Abhojana* (frequent and excessive fasting), *Atyasana* (habitual over-eating), *Adhyasana* (frequently taking food before digestion of previous meal), *Kshara Sevana* (excessive intake of alkaline foods), habitual excessive intake of *Katu* (hot and spicy), *Tikta* (bitter) *Kashaaya* (astringent), *Ruksha* (dried), *Laghu* (light), *Seeta* (preserved/frozen/chilled) food items, *Vishama Asana* (untimely/irregular food intake)

  Such habits of eating can contribute to the early degeneration of components of cervical spine.

- *Vihara* (Behavioral factors)– *Ativyayama*(exercising more than one's capacity),*Abhighata* (traumatic injuries),*Balavat Vigraha* (excessive weight lifting), *RatriJaagarana*(inadequate sleep at night), *Srama*(rigorous physical activity without adequate rest), *Pradhavana (*excessive running), and *Seeta Sevana*(over exposure of cold environment), inappropriate posture while working and sleeping

- *Maanasika Bhaava* (psychological factors) -Excessive/continuously being in state of *Cinta* (worrying), *Soka* (grief), *Krodha* (anger) and *Bhaya* (fear).

- *Prakriti* (Constitution)- *Vaatik Prakriti* (*Vata* predominant physical and mental constitution) can also be one of the major risk factors for any *Vata Vyadhi*.

PRINCIPLES OF MANAGEMENT

Red Flag Signs of Cervical Spondylosis:

These signs should be assessed before initiating treatment for need for management/ consultation 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 is 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.

Ayurveda perspective on general line of treatment:

General line of treatment for *Vata vyadhi* broadly includes oleation by all possible routes (topical, oral, nasal, per-rectal etc.); fomentation (moist, dry, with poultice, etc.); use of laxatives, and per-rectal administration of medicines.

However, the precise prescription depends upon the underlying pathology of the disease condition which is inferred from the history of exposure to the etiological factors, presenting complaints, onset of disease, associated diseases or past history, Prakriti and other clinical assessments. Accordingly *Vatavyadhi* can be caused by *KevalaVata* (purely *Vata Dosha* is disturbed/vitiated due to its independent causes), *Avrita Vata* (the *Vata Dosha* is influenced by vitiation of another *Dosha*), *Samsrishta Vata* (other *Dosha* are also associated in the pathology and are vitiated due their independent causes) and *Dhatu Kshaya*.

When vitiated *Vata* is stationed in supra-clavicular region, the diseases are termed as *Urdhva Jatrugata Vyadhi.* For such disease conditions, *Nasya Karma* is specifically advocated in Ayurveda. So for *Manyasthambha, Pakshaghata* like *Vatavyadhis, Nasapana* is indicated[28]. Sushruta Samhita mentions specific line of treatment for *Manyastambha* including *Nasya* and dry fomentation "*Manyasthambhe Api Etedeva Vidhenam Viseshato Vatasleshma Hara Nasyaih, Rukshaswedairupacharet*" (Su Chi 5/32).

Apabahuka is also mentioned as a *Vatavyadhi*, so in Sushruta Samhita it is mentioned that the common line of treatment as mentioned for *Vatavyadhi* is to be followed except *Siravyadh* (venous blood-letting). In Madhukosha commentary of the text Madhav Nidana, the condition is mentioned as *Vata Kapha Janya*[29]. In Ashtanga Samgraha also *Navana,* especially *Bhrimhana Nasya* (one type of *Nasya*), and *Snehapana* (internal oleation) are mentioned for treating *Apabahuka*. So overall, line of treatment for *Apabahuka* mainly comprises of *Nasya* and *Uttarabhaktika snehapana* (medicated Oil/Ghee administration after meal).[30]

a) For prevention of progression –

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.[31,32]

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.

***Nidana Parivarjan*:** Avoidance of causative factors e.g. unhealthy diet and lifestyle, postural causes etc.

Correction of *Agni*: According to Ayurveda, root cause of all diseases is *Mandagni* i.e. abnormal digestion and cellular metabolism. This in turn leads to improper nutrition of tissues. Hence is the first line of treatment in all disorders is correction of *Mandagni* by averting its causes and the simple modifications in diet and lifestyle.

Table No. 1: *Pathya Apathya*

Dos	Don'ts (Disease aggravating factors)
Properly cooked fresh and favorable food intake on appropriate timing in appropriate quantity	Frequent and long duration fasting habits, inadequate diet intake, irregular meal timings, eating untimely e.g. during late night or binge eating etc.
Aged cereals like wheat and rice, Green gram	Excessive intake of dried/preserved/frozen vegetables or foods, regular and excessive intake of lentils like peas, sprouts, raw vegetables and salads, cabbage, cauliflower, celery, brinjal, potatoes and tomatoes. Refined foods such as bakery products made of white flour and vegetable oils, junk food, reheated or burnt food
Fruits like grapes, *Draksha* (Dried Grapes), *Badara* (*Zizyphus sativus*), *Amra* (*Mangifera indica*)	Excessive intake of dry food items pulses like black eyed beans, lentils, peas, yellow gram, vegetables prepared with less or no oil or ghee etc.
Vegetables like sweet potato, carrot, bottle gourd, round gourd, garlic, *Patola /paraval* (*Trichosanthes dioica*), *Shigru* (drum stick), *Jivanti* (*Leptadenia reticulata*), *Alabu*, *Kushmanda*	Excessive intake of sour and pungent food, acrid (*Atikatu)* and astringent tasting foods like chilli sauce, black pepper powder, green chilli etc,
Judicious use of milk and Ghee intake especially from indigenous Cow or Goat	cold drinks, beverages, chilled food and ice cream
Drinking Luke warm or Warm water or boiled water brought to normal temperature	Insufficient sleep at night or frequent changes in sleep pattern, habitual postprandial day sleeping
Posture correction while doing the movements or daily living activities. Appropriate Yoga postures, intermittent breaks for stretching during office/school hours	Abrupt and excessive physical exertion through continuous walking, running, standing, climbing, swimming, crawling and sitting. Sports involving physical strain on joints and muscles. Sedentary work in bad posture continuously for long hours (e.g., working on laptop, desktop, driving), use of big pillows etc.

Dos	Don'ts (Disease aggravating factors)
Oil Massage (*Abhyanga*), *Atapa Sevana* (Sun bath with mild sun rays), Comfortable mattress (*Sukha Shayya*), *Ushnodaka Snana* (Warm water bath)	Suppression of natural urge especially of hunger, bowel and urine
Appropriate exercises and appropriate amount of rest	Falls, accidents, posture, assaults causing physical injuries to musculoskeletal organs

b) Interventions:-

At Level 1:- (optimal standard of treatment in situations where technology and resources are limited e.g. Solo Physician clinic/Community wellness centres/ PHC)

- OPD level management
- Advice of *Pathya Apathya*
- Referral criteria

❖ **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

Management:

OPD level management – If the patient shows mild features of Cervical Spondylosis (Grade-I or II severity), two or more of following forms of medications (*Kwatha, Guggulu, Churna, Taila, Lepa* etc.) may be given along with diet restriction:

Table No. 2: Single drugs/Compound Formulations for internal/external medication

Sr. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
1.	*Dasamula katutrayam kwatha*[33]	Decoction	60-80 ml in two divided doses	Before meal	7-14 days	Lukewarm Water *Prakshepa*: Honey
2.	*Rasnasaptakam kwatha*[34]	Decoction	60-80 ml in two divided doses	Before meal	7-14 days	Lukewarm Water *Prakshepa:* *Shunthi churna*
3.	*Amritottaram kwatha*[35]	Decoction	60-80 ml in two divided doses	Before meal	7-14 days	Luke warm warm water *Prakshepa:sarkara*
4.	*Prasaranyadi Ksheera Kashayam*	Decoction	50-100 ml in two divided doses	Before meal	7-14 days	Milk
5.	*Balarishta*[36]	*Arishta*	50-80 ml in two divided doses	After meal	7-14 days	Equal amount of lukewarm water
6.	*Dasamoolarishtam*[37]	*Arishta*	50-80 ml in two divided doses	After meal	7-14 days	Equal amount of lukewarm water

Sr. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
7.	*Punarnavadi Guggulu*[38]	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After meal	15 days to one month	Lukewarm water
8.	*Yograja Guggulu*[39]	*Vati* (500 mg)	1-3 gm in 2-3 divided doses	After meal	15 days to one month	*Rasna-saptaka Kwatha* / warm water
9.	*Ashwagandha Churna*	Powder of roots of *Withania somnifera*	3-5 gm in two divided doses	Early morning or in the evening empty stomach	15 days to one month	Warm milk
10.	*Shunthi Churna*	Powder of dried tuber of *Zingiber officinale*	1-3 gm in 2-3 divided doses	After meal	15 days to one month	Warm Water
11.	*Panchaguna Taila*[40]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	15 days to one month	--
12.	*Nirgundi Taila*	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	15 days to one month	--

*Combination of medicines may be used as per the present complaint and co-morbidities present. Considering the state of *Agni*, medicines like *Chiktrakadi Vati, Agnitundi Vati, Vaishvanara Churna,* etc. may also be added.

** The *Guggulu* Formulations may be advised to ingest after crushing the tablets.

- ***Abhyanga*** (oil application/massage)**-** on the affected joints with warm medicated oils like *Murchita Tila Taila*, *Panchaguna Taila, Kottamchukkadi Taila, Narayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanvantaram Taila.*
- ***Swedana***(hot fomentation) **-** with hot water bag, or any other available modality
- ***Pratimarsa Nasya****:* with *Anu Taila, Mahamasha Taila,* etc. may be advised after explaining the procedure

Recommended and restricted diet & lifestyle – as mentioned above. *Tikta Rasa Pradhan, balya* items (like *Ashwagandha Siddha* milk) may be advised as per *Agni* and *Prakriti*. The patients should be advised to be cautious for their posture and sleeping habit. The patients with sedentary work should be advised to practice intermittent stretching of concerned muscles (especially spine related).

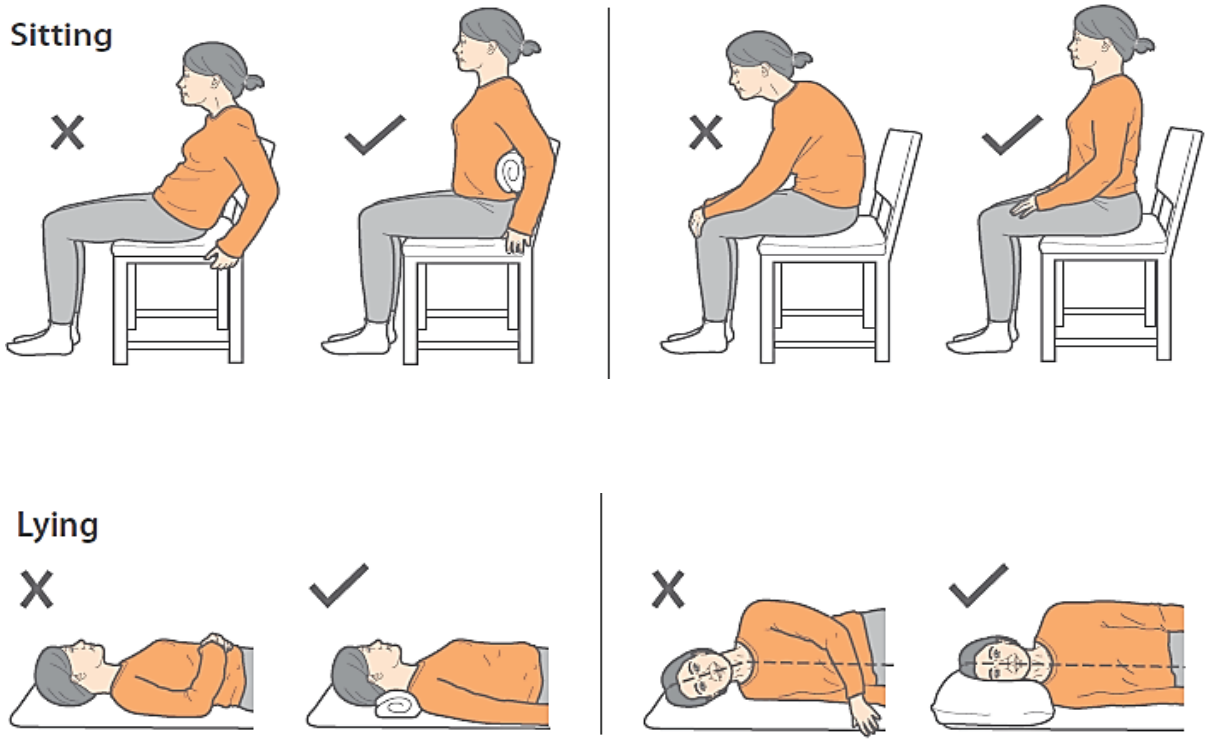
After a long period of inactivity, start a routine of gentle exercises, such as yoga, to stretch and strengthen your muscles and improve posture. Incorporate age-appropriate low-impact exercises to strengthen your upper back. Remember to always stretch before any strenuous physical activity.[41]

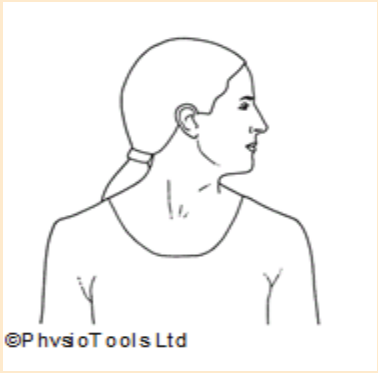
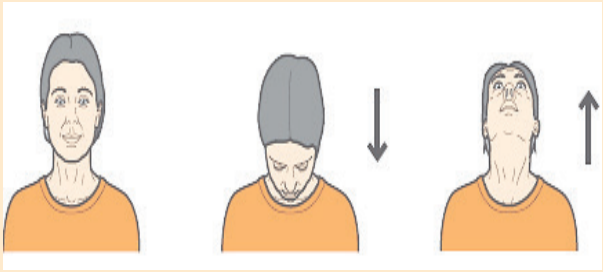
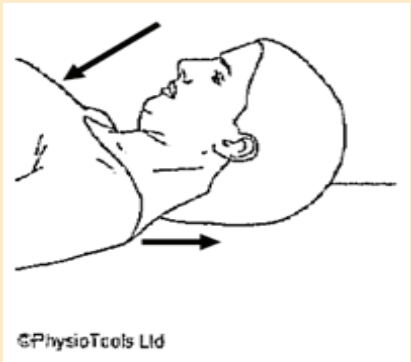
- Whether at home or in the workplace, ensure that the work surface is at a comfortable and appropriate height.
- Sit on a chair with proper lumbar support, ensuring it is at the right height for the task. Maintain proper posture with your shoulders back. Alternate your sitting positions regularly and 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.

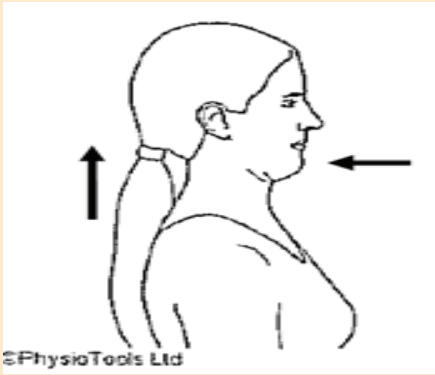
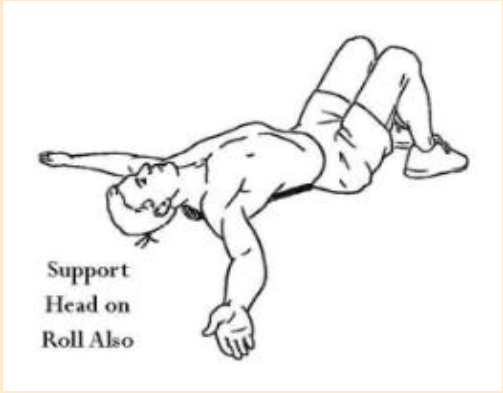
Posture[42]

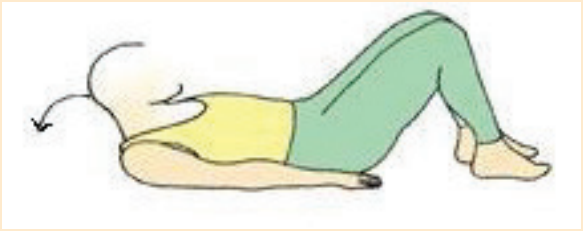
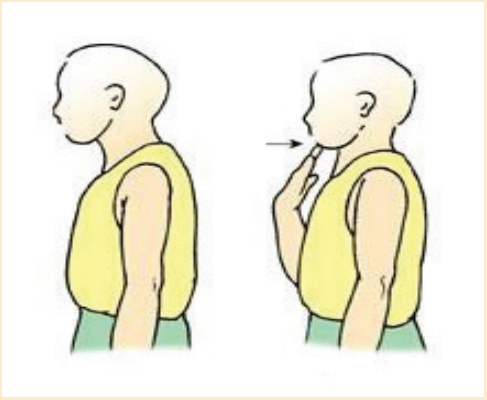
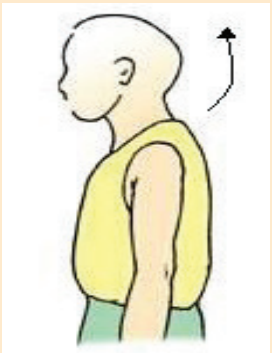
Posture is important when experiencing neck pain. Some examples of good and badsitting and lying postures are as follows:

Exercises for CS[43,44]



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	
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	

S.no.	Exercises	
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.	
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	

S.no.	Exercises	
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.	
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:

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:

- 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.
- Stay 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 (With duration) – 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.

At Level 2 (CHC/Small hospitals (10-20 bed hospitals with basic facilities such as routine investigations and x-ray)

- ➢ Management with single herbs and compound formulations for internal and external use
- ➢ External therapeutic procedures

- Bio-purification procedures
- Advice of *Pathya Apathya*
- Referral criteria

❖ **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 –**

For the patients referred from Level-1, treatment given in level-1 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 may also be considered while giving prescription. Any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

Table No. 3: Single herbs/ compound formulations for internal and external use

Sr. No.	Formulation	Dosage form	Dose (per day)	Time	Duration and Frequency	Adjuvants/ Anupaana
1.	*Mahayogaraja Guggulu*	*Vati*	0.5 – 1.5gm in 2-3 divided doses	After meal	15 days	*Rasnadi Kwatha / Dashamula Kwatha*
2.	*Trayodashanga Guggulu*[45]	*Vati*	1-3gm in 2-3 divided doses	After meal	15 days to one month	*Rasnadi Kwatha*, Luke Warm Water
3	*Guggulutiktaka Ghrita*[46]	Ghee	10 gmbd	After meal	7 days -1 month	Warm water
4.	*Agnitundi vati*	*Vati*	1 -2 gm in 2-3 divided dose	After food	15 days to one month	Lukewarm water
5.	*Dashamula Kashaya*	Decoction	60-80ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water
6.	*Sahacharadi Kashaya*	Decoction	60-80ml in two divided doses	Empty stomach	15 days to one month	Lukewarm Water

Sr. No.	Formulation	Dosage form	Dose (per day)	Time	Duration and Frequency	Adjuvants/ Anupaana
7.	*Ashwagandharishta*	*Arishta*	50-80 ml in two divided doses	After meal	1-2 months	Equal amount of water
8.	*Ksheer Bala Taila*	Oil	5 ml	At bed time	1-3 months	Warm milk
9.	*Shallaki Niryas*	Capsule containing gum-exudates of *Boswellia serrata*	1-3 gm in three divided doses	After meal	15 days to one month	Lukewarm Water
10.	*Mahanarayana Taila*	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--
11.	*Kottamchukkadi Taila*[47]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--
12.	*Murivenna*[48]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--
13.	*Mahamasha Taila*[49]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--
14.	*Dhanwantaram Tailam*[50]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--
15.	*Laghuvishagarbha Taila*[51]	Warm oil for local application	5-10 ml or as required for local application 2-3 times/day	--	1 month	--

➢ **External procedures as per availability of medicines and resources -**

- ***Abhyanga*** (oil application) **-** on the affected parts with warm medicated oils like *Narayana Taila, Panchaguna Taila*, *Kottamchukadi Taila, Mahanarayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanvantaram Taila, Masha Taila, Kshirabala Taila, Ashwagandha Bala lakshadi Taila* etc.
- ***Swedana*** (hot fomentation) **-** with hot water bag, pouring of warm oil on the affected joints *(Parisheka)*, *Nadi Sveda* with decoction of *Nirgundi, Dashamula, Eranda, Balamula,*

etc.,*PatraPinda Sveda* (local fomentation with heated herbal packs containing leaves of *Nirgundi, Eranda* etc.). *Ruksha Churna Panda Sweda, Dhanyamla Dhara* also may be done as *Ruksha Sweda*

- ***Lepa*** (application of medicinal paste) – *Gandhabiroja Lepa, Jadamayadi Lepa, Ellumnishadi Lepa, Kottamchukkadi Lepa, Grihadhumadi, Nagaradi lepana,* etc. can be applied on the affected parts.
- ***Jambeerapinda sweda*** (a specialized form of hot fomentation): May be done with *Karpasasthyadi or Kottachukkadi Taila* for 7 days
- ***Pichu*** (keeping oil soaked swab over affected area) – *Murivenna, Dhanwantaram Taila, Masha Taila, Kottamchukkadi Taila, Sahacharadi Taila, Nirgundi Taila, Bala Taila* etc. they can be used for *Sthanika Basti also*.
- ***Greevabasti*** (Oil pooling over cervical spine): *Mahanarayana Taila, Masha Taila, Prabhanjana Vimardana Taila, Vishagarbha Taila, Bala Taila*, *Karpasasthyadi Taila, Kottamchukkadi Taila, Karpooradi Taila etc*.

Bio-purification procedures like Panchkarma and other procedures:

- *Nasya* (Nasal administration of medicated oil/ freshly extracted juices or powder) with *Anu Taila Mahamasha taila , Ksheerabala aavarthi*
- *Basti Chikitsa* (per rectal administration of lukewarm medicated oils or emulsions) -

  Matra Basti (per rectal administration of 60 ml of any of these medicated oils) –*Ksheerabala Taila, Dhanwantaram Taila, PanchatiktaGuggulu Ghrita, Pippalyadi Anuvasana Taila, Sahacharadi Taila, Saindhavadi Taila* etc.
- *Vatanulomana /Nitya Mridu Virechana* with mild laxatives like *Triphala* powder or *Avipattikara* powder or *Drakshavaleha* 5-10 gm daily at night with lukewarm water

➢ **Physiotherapy Management:**[52]

During acute painful episodes, prioritize rest, apply moist heat in cold weather, and use light massage to enhance para spinal 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.[53,54]

Recommended and restricted Diet & Lifestyle – as mentioned above. *Uttarabhakthika Snehapana with gulguluthikthakam Ghrita* may be given. *Panchatiktaka siddha ksheera* may also be advised 40 ml daily for 15 days or a month.

Follow up (With duration) – 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 3: (Ayush hospitals attached with teaching institution, District level/State Ayush Hospitals, Tertiary care allopathic hospitals having Ayush facilities)

- Management with single herbs and compound formulations for internal and external use
- External therapeutic procedures
- Bio-purification procedures
- Advice of *Pathya Apathya*
- Referral criteria

Clinical Diagnosis: Same as levels 1& 2. Confirm diagnosis and severity with the help of investigations like magnetic resonance imaging.

❖ **Management:** For the patients referred from Level-1 or 2, treatment given in level-1 &/or 2 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 & 2 may be considered while giving prescription and any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

Table No. 4: Single herbs/ compound formulation for internal and external use

Sr. No.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/ Anupaana
1.	*Vatari Rasa*	*Vati*	250-500 mg in 1 or 2 divided doses	Empty stomach	15 days to one month	*Shunthi Kwatha/ Eranda-moola Kwatha*
2.	*Ekangavir rasa*[55]	Tablet/ powder	125-375 mg in 1-3 divided doses	After meal	15 days	*Rasnadi Kashaya*/ fresh ginger juice
3.	*Brihatvatachintamani rasa*[56]	Tablet/ powder	125 (single dose) to 250 mg (in two divided doses)	Early morning or evening empty stomach	15 days	Honey

Sr. No.	Name of drug	Dosage Form	Dose	Time	Duration and Frequency	Adjuvants/ Anupaana
4.	*Vatagajankush rasa*[57]	Powder	125-250 mg in 1-2 divided doses	After meal	15 days	*Manjishtha Kashaya*/ Honey
5.	*Mahavata-vidhwamsa rasa*[58]	Tablet/ powder	500 mg in 2 divided doses	Empty stomach	15 days to one month	Warm water/ Honey/ ghee
6.	*Saptavimsati guggulu*[59]	Tablet	1-2 gm in 2-3 divided dose	After meal	15 days to 1 month	Warm water
7.	*Panchamrita Lauha Guggulu*	Tablet	500 mg to 1 gm in 1-2 divided dose	After meal	15 days to 1 month	Warm water
8.	*Panchatikta Ghrita*	Ghee	10-20 gm in two divided doses	Empty stomach	1-2 months	Warm Milk
9.	*Lashunadi Ghrita*	Ghee	5-10 gm	Empty stomach	15 days to one month	Warm water/Milk
10.	*Ashwagandhadi Leham/ Aja-ashwagandhadi Leham*	*Leham*/ Linctus	5-10 gm	Early morning or evening empty stomach	2-3 months	Warm milk
11.	*Amalaki Rasayana*	Powder	5-10 gm	Empty stomach	2-3 months	Warm water
12.	*Guduchi satva*[60]	Fine powder	1-2 gm in two divided doses	After meal	7-14 days	Luke warm water

➢ **External procedures –**

- ***Shashtik Shali Pinda Sweda*** (local and whole body massage cum fomentation with poultice of rice cooked in milk and *Vata Shamak* herbs)
- ***Shirobasti*** (Oil pooling over head) - If the condition is associated with radiculopathy or myelopathy *Sirobasti* with *Karpasasthyadi Taila* may also be done.
- ***Kashaya Dhara*** (continuously pouring warm decoctions of medicinal herbs) – *Dashamoola*, etc.
- ***Agnikarma*** (Therapeutic heat application at the affected area) – Metal *Shalaka* with direct or conductive method may be used once weekly. (4-8 sittings may be done as required)

➢ **Bio-purification procedures like Panchakarma and other procedures:**

- *Mustadi Yapana Basti, Tikta Ksheer Basti, Yoga Basti* (Combination of *Anuvasana* and *Niruha Basti*), *Rajayapana Basti, Majja Basti, Anuvasana Basti* with *Ksheerbala Taila* etc.
    - *Niruha basti with Erandamooladi niruha, balaguduchyadi niruha, dashamoola niruha, panchatikta niruha, etc.*

- *Anuvasana Basti* with *Ksheerabala Taila, Dhanwantaram Taila, Panchatikta Guggulu Ghrita, Pippalyadi Anuvasana Taila*, *Sahacharadi Taila, Saindhavadi Taila*

- *Virechana* (medically induced purgation) - Mild purgation may be preferred with *Shunthisiddha Eranda Sneha* 30-35 ml with warm water in empty stomach or *Trivrit Avaleha* 3-6 gm after meal twice a day. The dose should be based on the *Koshtha* (gut sensitivity).
- *Raktamokshana* (Blood-letting) – *Viddha karma* with fine needles *or Siravedha* may be done if pain is acute and severe or is not pacified with any of the therapeutic measures

➢ **Recommended and restricted Diet & Lifestyle –** as mentioned above. *Rasona Ksheera Paka* (paste of 5 gm garlic bulbs boiled with 40 ml milk and 40 ml water till 40 ml milk is left) may be advised 40 ml daily for 15 days or a month

➢ **Follow up (With duration) –** 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

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4

LUMBAR SPONDYLOSIS

4
LUMBAR SPONDYLOSIS

कटिशूलः/ कटीरुक् (National Ayurveda Morbidity Code :SAT- D.1898)

कटिग्रहः/ कटीग्रहः(National Ayurveda Morbidity Code: SAT- D.1894)

Lumbar Spondylosis (ICD 11Code: FA80.0 – FA8Z)

कटिशूलः/ कटिग्रहः (ICD-11 TM2 Code: SP42)

CASE DEFINITION

कटिशूलः/ कटीरुक् Low backache (http://namstp.ayush.gov.in/#/sat)

कटिग्रहः/ कटीग्रहः - Stiffness of the lumbar region/ lower back

Lumbar spondylosis may be applied non-specifically 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]

INTRODUCTION (*Incidence/ Prevalence, Morbidity/Mortality)*

- 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.[1,4-6] 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. [5,7,8]
- Genetic factors likely influence the formation of osteophytes and disc degeneration.[9-11]

Aetiology and risk factors as per Ayurveda

Vata gets vitiated due to the following reasons[12]

- Excessive consumption of *Vata Vardhaka Ahara* - food which are bitter, pungent and astringent in taste.

- Intake of food in less quantity (*Alpaahara*) - Inadequate nutrition can lead to *Dhatukshaya* which is one of the two predominant factors for *Vata prakopa*.
- Intake of food items which are *Ruksha* in nature (not taking *Snigdhaahara* like Ghee, milk, butter etc.)
- Suppression and premature initiation of natural urges
- Those having the habit of drinking water when hungry.
- Keeping awake at night
- Excessive indulgence in sexual activities
- Rigorous physical activity, excessive walking, and excessive weight lifting: Overexertion without adequate rest and recovery can disturb the balance of *Doshas*, especially for individuals with a *Vata* constitution.
- Continuing mental stress and anxiety (*Chinta, Shoka, Bhaya*): Mental stress and anxiety are considered significant factors in Ayurveda that can lead to imbalance of Vata *Dosha* and negatively affect overall health.
- Improper administration of bio-purification procedures: Ayurveda recommends regular detoxification (*Panchakarma*) but improper or excessive practices can be harmful due to vitiation of *Doshas* especially *Vata*.
- Chronic illness or debilitating diseases: Long-term illnesses can disrupt the balance of *Doshas especially Vata and lead to other comorbidities.*
- *Excessive blood loss: Excessive bleeding due to any cause, can lead to a significant loss of vital energy (Ojas) and may result in weakness and other health problems due to vitiation of Vata Dosha.*
- *Old age (Vriddhaavastha): Aging is a natural process in Ayurveda, and it is associated with predominance of Vata Dosha.*
- *Trauma: aggravate Vata Dosha predominantly.*

Pathogenesis

In addition to its own *Nidaana, Vata Dosha* may get vitiated by one of the two modes, *Dhatukshaya janya* (degenerative pathology) or *Avarana janya* (obstructive pathology). The regular exposure to the etiological factors may initially affect the *Agni* (digestive capacity) and hampers the proper formation of *Dhatus* resulting in *Kshaya of Asthi* and *Majja Dhatu*. When the *Asthi* and *Majja Dhatu* pertaining to *Kati Pradesha* (lower back region) gets affected resulting in degenerative diseases of *Kati Pradesha. Due to Vata Dosha Prakopa* and *Saamaavastha,* when *Doshas* get localised in *Katipradesha,* the symptoms get manifested as *Katishoola/Katigraha* (pain and stiffness in lower back region). The tissues of joints (*Asthi, Snayu, Kandara*) and their functions are affected progressively if appropriate intervention and avoiding the consumption of causative factors is not done at early stages.

Clinical presentation[13]

Katigraha is mentioned as a separate *Vatavyadhi* in *Gadanigraha*. It is explained as pain and stiffness in the lower back region due to *Sama* or *Nirama Vata*. Other Ayurveda texts described *Katigraha* as a symptom due to vitiation of *Vata* in *Pakwasaya*. Symptoms similar to Lumbar spondylosis and its complications come under the description of different disease conditions such as *Gridhrasi, Khanja, Pangu* and vitiation of *Vata* in Asthi and *Majja Dhatu*.

DIAGNOSTIC CRITERIA

For the diagnosis of lumbar spondylosis previous history taking, physical examination, imaging studies are performed.[14] The initial evaluation for patients with low back pain begins with an accurate history and thorough physical exam with appropriate provocative testing.[15] 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.[1,16]

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.[1,17]

Radiographic studies, whether plain X-ray film, CT or MRI, may provide useful confirmatory evidence to support an examination finding and localize a degenerative lesion or area of nerve compression.[15]

CLINICAL EXAMINATION

The physical examination will include the evaluation of the neurologic function for strength, sensation and reflexes of the arms, legs, bladder, and bowels.[16-19]

Symptoms:[14,16,17]

- Lower back pain
- Stiffness after prolonged periods of inactivity
- Radiating pain from the lower back to legs or hip 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

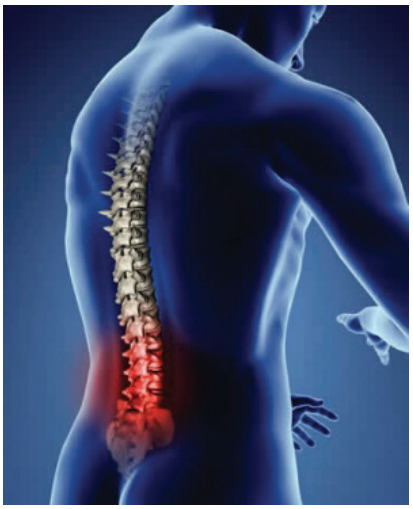
Signs:

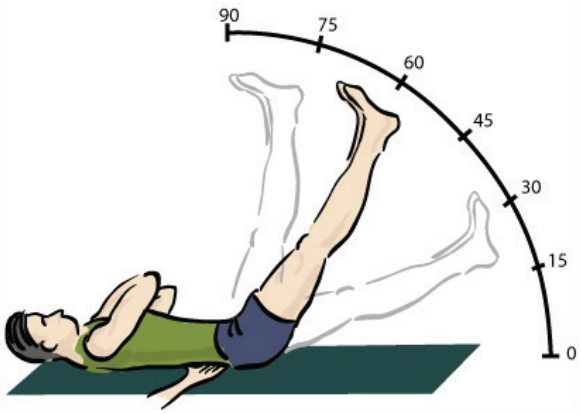
The Straight Leg Raise (SLR) test is commonly used to identify disc pathology or nerve root irritation, as it mechanically stresses lumbosacral nerve roots, hence useful for ruling out lumbo-sacral radiculopathy. It also has specific importance in detecting disc herniation and neural compression. It is also classified as a neurodynamic evaluation test as it can detect excessive nerve root tension or compression.[20] 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.[21]

- 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°.[22]
- Inclusion of great toe extension in the SLR (instead of ankle dorsiflexion) is documented as Sicard's Test.[23]

A true positive SLR test should include:

- Radicular leg pain (symptoms below the knee).
- Pain occurs when hip is flexed at 30^0 and 60^0 or 70^0 from horizontal. Neurological pain which is reproduced in the leg and lower back between 30^0-70^0 of hip flexion is suggestive of lumbar disc herniation at the L4-S1 nerve roots.[21]





Waddell Sign:

The patient's skin over a wide area of the lumbar skin is tender to light touch or pinch (superficial tenderness). The patient experiences deep tenderness over a wide area that is not localized to one structure and crosses over non-anatomical boundaries (non-anatomical tenderness).

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[24]

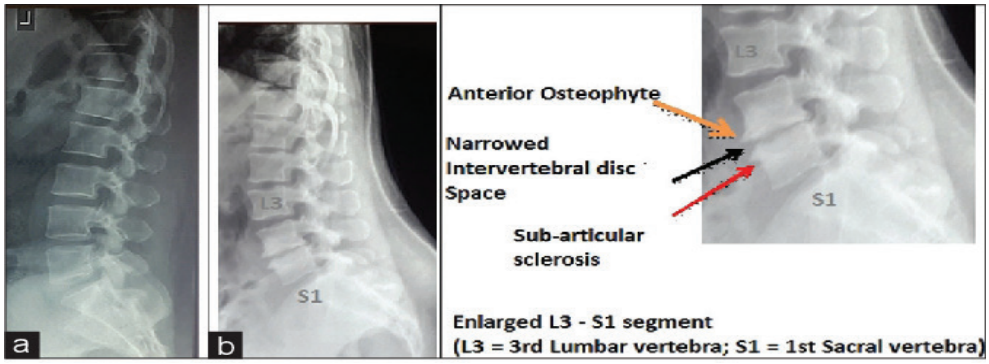
- Worsening symptoms of lumbar spondylosis
- Worsening neurological deficits
- Worsened intervertebral disc herniation
- Narrowing of spinal canal due to secondary osteophytes
- Affecting the patient's life in all aspects

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.[25] 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:

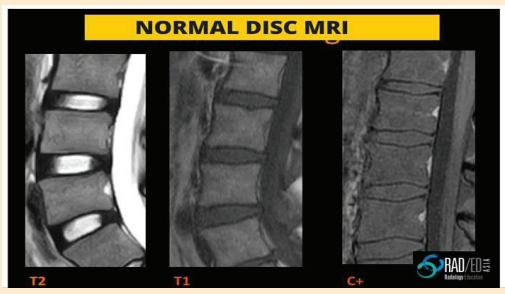
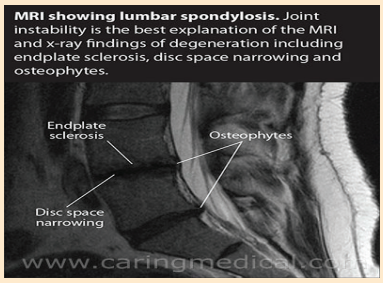
Investigation	Findings[2,3]
Plain or Digital x-ray Lumbar spine (AP, Lat.)	• Osteophytes • Thickening of facet joints • Narrowing of the intervertebral disc spaces.



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's 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.[14]
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]
	

DIFFERENTIAL DIAGNOSIS

Diagnosis with Specific Pathology	Differentiating features
Cauda equina syndrome [25]	• 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 [26]	• 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 [27]	• 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[28,29]	• 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[30,31]	• 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.

Diagnosis with Specific Pathology	Differentiating features
Lumbar Spondylolisthesis[32]	• 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.
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Lumbar Spondylolysis [33]	• 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.

Diagnosis with Specific Pathology	Differentiating features
Intervertebral disc prolapse[34]	• 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

Differential diagnosis as per Ayurveda

Name of disease	Pain at lumbar region	Stiffness at lumbar region	Involvement of other joint	Symptoms associated with *Kati*
Katigraha[37]	Present	Present	No	*Katiruja*
Gridhrasi[38]	Present	Present	No	*Stambha, Ruk, Toda of Kati*
Sandhigata vata[39]	Present	Present	Yes (Multiple joints may involve)	*Vedana, Shotha, Vathapoornadrithisparsha of affected joints*
Amavata[40]	Present	Present	Yes (Multiple joints may involve)	*Katigraha*
Pakwasayagatavata[41]	Present	No	No	*Katigraha and shoola*
Khanja and Pangu[42]	Present/ Absent	No	No	Loss of movement of one lower limb in *Khanja* and both lower limbs in *Pangu*

PRINCIPLES OF MANAGEMENT

Red Flag Signs of Lumbar Spondylosis:

These signs should be assessed before initiating treatment for need for management/ consultation 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 Ayurveda and can be re-assessed in the follow-ups for discontinuing the standard treatment in consultation with a conventional physician.

(A)**Preventive measures** [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

Ayurveda line of management (Charak Samhita Chikitsa Sthana Chapter 28 Verse 75-83)

In case of *Upasthambita Vata*, *Rukshana* and *Pachana* is of prime importance prior to *Snehana*, whereas in *Nirama Vata* and *Dhatukshaya janya Vataprakopa* condition, *Snehana* is the first and foremost procedure followed by *Swedana, Basti* and *Brimhana chikitsa*.

- *Snehapana*: This involves the consumption of medicated *Taila* or *Ghrita* orally.
- *Abhyanga*: External application of *Taila* to the body helps in relaxing muscles and joints, reducing pain, and stiffness.
- *Swedana* therapy is used in Ayurveda to alleviate *Vata* imbalance. It includes both general and local fomentation, which can be achieved through poultices, hot water bags, or other means. *Swedana* therapy helps improve blood circulation and reduce pain and stiffness.
- Basti (Therapeutic Enema): *Yoga Basti* (Combination of *Anuvasana Basti* with *Ksheerabala Taila*, *Sahacharadi Taila, Saindhavadi Taila, Dhanwantaram Taila,* and *Niruha Basti with Erandamooladi Kashaya, Dashamula Kashaya, or Balaguduchyadi Kashaya*), *Tikta Ksheera Basti, Rajayapana Basti*, *Majja Basti, Matra Basti,* etc.
- *Nidaana Parivarjana*: Avoidance of causative factors.
- Correction of *Agni*: According to Ayurveda, root cause of all diseases is *Mandagni*. This in turn leads to improper nutrition of tissues. Hence, the first line of treatment in all disorders is correction of *Mandagni* by averting its causes and the simple modifications in diet and lifestyle.

<u>At Level 1</u>- 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:[48]

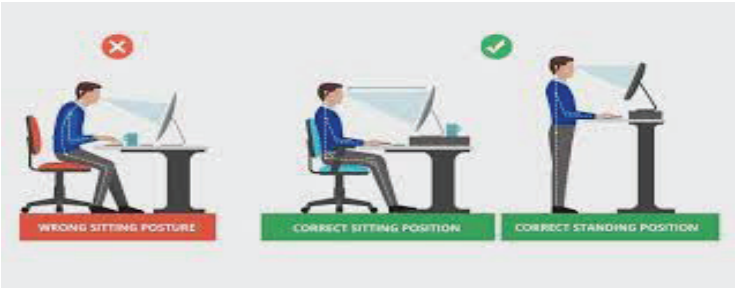
After a long period of inactivity, start a routine of gentle exercises, such as yogasana, to stretch and strengthen muscles and improve posture. Incorporate age-appropriate low-impact exercises to strengthen the lower back. Remember to always stretch before any strenuous physical activity.

- 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.

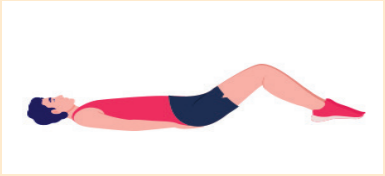
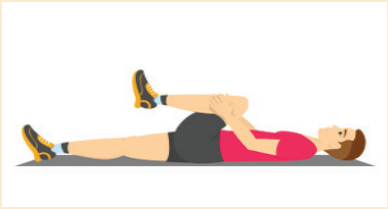
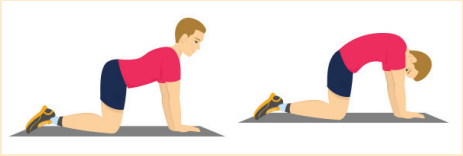
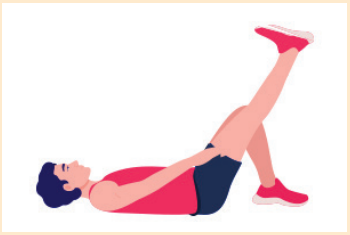
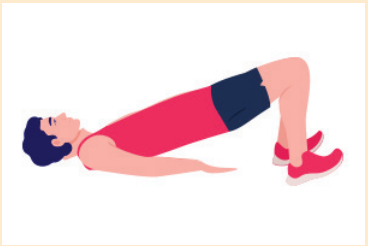
Posture[49]

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:[50,51]

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	
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	

Restricted diet and lifestyle:[46,50,52]

- 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.

***Pathya-Apathya*[53]**

Dos	Don'ts (Disease aggravating factors)
Properly cooked fresh food intake at appropriate timing in appropriate quantity	Excessive intake of dried/preserved/frozen foods items, Refined foods such as bakery products made of white flour and vegetable oils, junk food, reheated or burnt food
Santarpana and *Brimhana ahara* (Nourishing diet), Food items with *Svadu (*Sweet*), Amla (*Sour*) rasa*	Excessive or continuous intake of food items with *Kashaya* (Astringent), *Katu* (Pungent), *Tikta*(Bitter) *rasa Viruddhaaahara* (Incompatible food items)
Old cereals (*Samvatsarothitha*) -*Godhuma* (Wheat), *Masha* (Black gram), *Shali, Shashtika*	*Kshudra Dhanya* (Millets), *Rajamasha* (kidney beans), *Mudga* (Green gram), *Nishpava* (Flat beans), *Chanaka* (Bengal gram), *Kalaya*(Garden pea), *Yava* (Barley)
Fruits like *Draksha* (Grapes), *Badara* (*Zizyphus sativus*), *Amra* (*Mangifera indica*), *Jambeera* (Citrus limon), *Dadima* (Punica granatum), *Parushaka* (Grewia asiatica)	Fruits like *Jambu* (Syzygiumcumini), *Kramuka* (Betel nut), unripe *Tala phala* (Palm fruit)
Vegetables like sweet potato, carrot, bottle gourd, round gourd, garlic, *Patola*(*Trichosanthes dioica*), *Shigru* (drum stick), *Alabu (kaddu)*, *Kushmanda (Petha)*, *Lashuna* (Allium sativum)	Regular and excessive intake of lentils like peas, sprouts, raw vegetables and salads, cabbage, cauliflower, celery, brinjal, potatoes and tomatoes, *Karavellaka* (Bitter gourd), *Saka* (Leafy vegetables)
Gramyamamsa (Meat of domestic animals), *Anupamamsa* (Meat of animals living in marshy lands), *Kukkutamamsa (Chicken)*	*Suskamamsa* (Dried meat)
Kilata, Dadhi (Curd), *Kurchika* (Solid part of curd), *Rasala, Sura*	Citrus liquids, *Kshoudra*(Honey)
Judicious use of milk and ghee intake especially from indigenous cow or goat	Food items prepared with less/ no oil or ghee
Drinking Luke warm or Warm water or boiled water brought to normal temperature	*Seetambu*(Cold water), chilled food items

Dos	Don'ts (Disease aggravating factors)
Posture correction while doing the movements or daily living activities	Insufficient sleep at night or frequent changes in sleep pattern
Oil Massage (*Abhyanga*), *AtapaSevana* (Sun bath with mild sun rays), Comfortable mattress (*Sukha Shayya*), *Ushnodaka Snana* (warm water bath), *Asanam* (Sitting in a comfortable posture)	Frequent and long duration fasting, inadequate diet intake, irregular meal timings, eating untimely e.g. during late night or binge eating etc.; frequent overeating, Excessive indulgence in sexual activities, Suppression of natural urge especially of hunger, bowel and urine, Physical injuries to musculoskeletal organs
Appropriate exercises and appropriate amount of rest	Abrupt and excessive physical exertion through continuous walking, running, standing, climbing, swimming, crawling and sitting. Sports involving physical strain on joints and muscles. Sedentary work in bad posture continuously for long hours

OPD level management – If the patient shows mild pain or stiffness in low back region, two or more of following forms of medications (*Kwatha, Guggulu, Churna, Taila, Lepa,* etc.) may be given along with diet restriction, considering *Agnibala* (Digestive power) and nature of *Kostha* (bowel habits) of the patient:

Single drugs/Compound Formulations

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
1.	*Dashamula Kwatha*[54]	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
2.	*Gandharvahastadi Kwatha*[55]	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
3.	*RanasaptakaKwatha*[56]	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
4.	*MaharasnadiKwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
5.	*Rasnaerandadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
6.	*Sahacharadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
7.	*Dhanvantaram kwatha*	Prepared decoction	30ml kashyam added in 70 ml lukewarm water in two divided doses.	Before meals	15 days to one month	Lukewarm Water

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
8.	*Balarishta*[57]	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
9.	*Ashwagandharishta*	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
10.	*Yogaraja Guggulu*[58]	*Vati* (500 mg)	1-3 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
11.	*Simhanada Guggulu*	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
12.	*Trayodashanga guggulu*[59]	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
13.	*Vatari guggulu*[60]	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
14.	*Lakshadi Guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
15.	*Vaiswanara Churna*	*Powder*	3 gm twice daily	Early morning and evening empty stomach	7 days	Lukewarm water
16.	*Ajmodadi Churna*	Powder	3 gm twice daily	Early morning and evening empty stomach	15 days to one month	Lukewarm water/Jaggery
17.	*Eranda Paka*	Powder	3 gm twice daily	After meals morning and evening	15 days to one month	Lukewarm water
18.	*Ashwagandha Churna*	Powder of *Withania somnifera*	3-5 gm twice daily	Twice daily after food	15 days to one month	Warm milk/ lukewarm water
19.	*Guggulutiktaka Ghrita*	Grutha	5-10 gm	Early morning or evening empty stomach	15 days to one month	Lukewarm water
20.	*Gandarvahasta Taila*	Taila	6-12 ml	at bedtime	7 days	Lukewarm water

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
21.	*Panchaguna Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
22.	*Dhanvantaram Taila, Laghuvishagarbha Taila, Mahanarayana Taila, Prasarini Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
23.	*Dashanga Lepa*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
24.	*Kottamchukkadi Churna*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
25.	*Vatagajankusha Rasa, Vatavidhwansan Rasa, Ekangveer Rasa*	Tablet (125 mg)	250-500 mg	Twice daily after meals	15 days to one month	Warm water or milk

- *Abhyanga* (oil application/ massage)**-** on the affected area with warm medicated oils like *Panchaguna Taila, Kottamchukkadi Taila, Narayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanwantaram Taila, Laghu vishagarbha Taila, etc.*
- *Swedana* (hot fomentation) **-** Fomentation with hot water bag, *Balukasveda, Lavanapottalisveda* may be advised to the patient
- *Vatanulomana / Nitya Mridu Virechana* with mild laxatives like purified *Eranda Taila* 5ml with warm milk/ water at night or early morning before sunrise, *Triphala churna* or *Avipattikara churna* 5-10 gm daily at night with lukewarm water.
- *Rasona Ksheer Paka* (paste of 5 gm garlic bulbs boiled with 40 ml milk and 40 ml water till 40 ml milk is left) may be advised 40 ml daily for 15 days or a month.

Yoga practices for the management of LS:[61-63]

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.

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-response 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 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:

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

Management:

For the patients referred from Level-1, treatment given in level-1 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 may also be considered while giving prescription. Any of the following

medicines may be added as appropriate. Indoor management may be preferred if necessary.

Single herbs/ compound formulations

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
1.	*Dashamula Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
2.	*Gandharva-hastadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
3.	*RanasaptakaK-watha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
4.	*MaharasnadiK-watha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
5.	*Rasnaerandadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
6.	*Sahacharadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
7.	*Dhanwana-taram Kwatha*	Prepared decoction	30ml kashyam added in 70 ml lukewarm water in two divided doses.	Before meals	15 days to one month	Lukewarm Water
8.	*Balarishta*	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
9.	*Ashwagandhar-ishta*	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
10.	*Yogaraja Gug-gulu*	*Vati* (500 mg)	1-3 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
11.	*Simhanada Guggulu*	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
12.	*Trayodashanga guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
13.	*Vatari guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
14.	*Lakshadi Gug-gulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
15.	*Vaiswanara Churna*	*Powder*	3 gm twice daily	Early morning and evening empty stomach	7 days	Lukewarm water
16.	*Ajamodadi Churna*	Powder	3 gm twice daily	Early morning and evening empty stomach	15 days to one month	Lukewarm water/Jaggery
17.	*Eranda Paka*	Powder	3 gm twice daily	After meals morning and evening	15 days to one month	Lukewarm water
18.	*Ashwagandha Churna*	Powder of *Withania somnifera*	3-5 gm twice daily	Twice daily after food	15 days to one month	Warm milk/ lukewarm water
19.	*Guggulutiktaka Ghrita*	Grutha	5-10 gm	Early morning or evening empty stomach	15 days to one month	Lukewarm water
20.	*Gandarvahasta Taila*	Taila	6-12 ml	at bedtime	7 days	Lukewarm water
21.	*Panchaguna Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
22.	*Dhanwantaram Taila, Laghu vishagarbha Taila, Mahanarayana Taila, Prasarini Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
23.	*Dashanga Lepa*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
24.	*Kottamchukkadi Churna*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
25.	*Vatagajankusha Rasa, Vatavidhwansan Rasa, Ekangveer Rasa*	Tablet (125 mg)	250-500 mg	Twice daily after meals	15 days to one month	Warm water or milk

➢ **External procedures as per availability of medicines and resources -**

- ***Abhyanga-*** on the affected joints with warm medicated oils like *Narayana Taila, Panchaguna Taila*, *Kottamchukkadi Taila, Mahanarayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanwantaram Taila, Mahamasha Taila, Kshirabala Taila,* etc.
- ***Swedana*** (hot fomentation)**-** *Baluka sweda, Lavanapottalisweda, Nadi Sweda* with decoction of *Nirgundi, Dashamula, Eranda, Balamula,* etc., *Patra Pinda Sweda* (local fomentation with heated pottali containing leaves of *Nirgundi, Eranda* etc.),

Shashtik Shali Pinda Sweda, Ruksha churna Pinda sweda with medicated powders like *Kolakulathadi Churna*, *Kotttamchukkadi Churna*.

- ***Parisheka/Dhara*** - continuously pouring of warm decoction of medicinal herbs or warm medicated oil on the affected joints
- ***Lepa*** (application of medicinal paste) –*Kottamchukkadi Lepa, Shunthi churna lepa,* etc. can be applied, if swelling is present, followed by bandaging with leaves of *Vatashamaka* drugs *(Rasana, Eranda, Bala, Ashwagandha, Arka,* etc.) on affected joints
- ***Pichu***– With *Murivenna, Dhanwantaram Taila, Mahamasha Taila, Kottamchukkadi Taila, Sahacharadi Taila, Nirgundi Taila, Bala Taila,* etc.
- ***Kati Basti*** (Oil pooling over affected joints or areas) – With *Panchaguna Taila*, *Dhanwantaram Taila, Narayana Taila, Mahanarayana Taila, Laghu Vishagarbha Taila, Bala Taila*, *etc.*
- **Panchkarma (Bio-purification procedures):**
  - *Vatanulomana /Nitya MriduVirechana* with mild laxatives like purified *Erandataila* 5ml with warm milk/water at night or early morning before sunrise, *Triphala churna* or *Avipattikara churna* 5-10 gm daily at night with lukewarm water.
  - *Yoga Basti* (combination of *Anuvasana Basti* with *Ksheerabala Taila*, *Sahacharadi Taila, Saindhavadi Taila, Dhanwantaram Taila,* and *Niruha Basti with Erandamooladi Kashaya, Dashamula Kashaya, or Balaguduchyadi Kashaya*), *Tikta Ksheera Basti, Rajayapana Basti*, *Majja Basti,* etc.
  - *Matra Basti* - per rectal administration of 60 ml of any of these medicated oils – *Ksheerabala Taila, Dhanwantaram Taila, Panchatikta Guggulu Ghrita, Sahacharadi Taila,* etc.
  - *Rasona Ksheera Paka* (paste of 5 gm garlic bulbs boiled with 40 ml milk and 40 ml water till 40 ml milk is left) may be advised 40 ml daily for 15 days or a month.

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 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: For the patients referred from Level-1 or 2, treatment given in level-1 &/or 2 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 & 2 may be considered while giving prescription and any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

- Management with single herbs and compound formulations for internal and external use
- External therapeutic procedures
- Bio-purification procedures
- Advice of *Pathya-Apathya*

Single herbs/ compound formulations

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
1.	*Dashamula Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
2.	*Gandharvahastadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
3.	*RanasaptakaKwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
4.	*MaharasnadiKwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
5.	*Rasnaerandadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
6.	*Sahacharadi Kwatha*	Decoction	60-80 ml in two divided doses	Before meals	15 days to one month	Lukewarm Water
7.	*Dhanwantaram Kashaya*	Prepared decoction	30ml kashyam added in 70 ml lukewarm water in two divided doses.	Before meals	15 days to one month	Lukewarm Water
8.	*Balarishta*	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
9.	*Ashwagandharishta*	*Arishta*	12-24 ml twice daily	After meals	15 days to one month	-
10.	*Yogaraja Guggulu*	*Vati* (500 mg)	1-3 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
11.	*Simhanada Guggulu*	*Vati(500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
12.	*Trayodashanga guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
13.	*Vatari guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
14.	*Lakshadi Guggulu*	*Vati (500 mg)*	1-2 gm in 2-3 divided doses	After meals	15 days to one month	Lukewarm water
15.	*Vaiswanara Churna*	*Powder*	3 gm twice daily	Early morning and evening empty stomach	7 days	Lukewarm water
16.	*Ajamodadi Churna*	Powder	3 gm twice daily	Early morning and evening empty stomach	15 days to one month	Lukewarm water/Jaggery
17.	*Eranda Paka*	Powder	3 gm twice daily	After meals morning and evening	15 days to one month	Lukewarm water
18.	*Ashwagandha Churna*	Powder of *Withania somnifera*	3-5 gm twice daily	Twice daily after food	15 days to one month	Warm milk/ lukewarm water

S. No.	Drug	Dosage form	Dose (per day)	Time of administration	Duration and Frequency	Adjuvants/ Anupaana
19.	*Guggulutiktaka Ghrita*	Grutha	5-10 gm	Early morning or evening empty stomach	15 days to one month	Lukewarm water
20.	*Gandarvahasta Taila*	Taila	6-12 ml	at bedtime	7 days	Lukewarm water
21.	*Panchaguna Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
22.	*Dhanwantaram Taila, Laghu vihsagarbha Taila, Mahanarayana Taila, Prasarini Taila*	Warm oil for local application	5-10 ml or as required	Once or twice a day for local application	15 days to one month	--
23.	*Dashanga Lepa*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
24.	*Kottamchukkadi Churna*	Powder for local application	5-10gm	Bedtime		Warm Water/ Sesame Oil
25.	*Vatagajankusa Rasa, Vatavidhwansan Rasa, Ekangveer Rasa*	Tablet (125 mg)	250-500 mg	Twice daily after meals	15 days to one month	Warm water or milk

➢ **External procedures as per availability of medicines and resources -**

- ***Abhyanga-*** on the affected joints with warm medicated oils like *Narayana Taila, Panchaguna Taila*, *Kottamchukkadi Taila, Mahanarayana Taila*, *Bala Taila, Brihat Saindhavadi Taila, Dhanwantaram Taila, Mahamasha Taila, Kshirabala Taila,* etc.
- ***Swedana*** (hot fomentation)**-** *Balukasweda, Lavanapottalisweda, Nadi Sweda* with decoction of *Nirgundi, Dashamula, Eranda, Balamula,*etc., *Patra Pinda Sweda* (local fomentation with heated *pottali* containing leaves of *Nirgundi, Eranda* etc.), *Shashtik Shali Pinda Sweda, Ruksha churna Pinda sweda* with medicated powders like *Kolakullathadi Churna*, *Kotttamchukkadi Churna*.
- ***Parisheka/Dhara*** - continuously pouring of warm decoction of medicinal herbs or warm medicated oil on the affected joints
- ***Lepa*** (application of medicinal paste) –*Kottamchukkadi Lepa, Shunthi churna lepa,* etc. can be applied, if swelling is present, followed by bandaging with leaves of *Vatashamaka* drugs *(Rasana, Eranda, Bala, Ashwagandha, Arka,* etc.) on affected joints
- ***Pichu***– With *Murivenna, Dhanwantaram Taila, Mahamasha Taila, Kottamchukkadi Taila, Sahacharadi Taila, Nirgundi Taila, Bala Taila,* etc.
- ***Kati Basti*** (Oil pooling over affected joints or areas) – With *Panchaguna Taila, Dhanwantaram Taila, Narayana Taila, Mahanarayana Taila, Laghu Vishagarbha Taila, Bala Taila,etc.*

- ***Panchkarma* (Bio-purification procedures):**
- *Virechana* with mild laxatives like Purified *Eranda Taila* or *Trivrit Avaleha*. The dose should be based on the *Koshtha* (gut sensitivity) of the patient.
- *Yoga Basti* (combination of *Anuvasana Basti* with *Ksheerabala Taila*, *Sahacharadi Taila, Saindhavadi Taila, Dhanwantaram Taila,*and *Niruha Basti with Erandamooladi Kashaya, Dashamula Kashaya, or Balaguduchyadi Kashaya*), *Tikta Ksheera Basti, Rajayapana Basti*, *Majja Basti,* etc.
- *Matra Basti* - per rectal administration of 60 ml of any of these medicated oils or *ghrita – Ksheerabala Taila, Dhanwantaram Taila, Sahacharadi Taila, Panchatikta Guggulu Ghrita,* etc.
- *Raktamokshana* (Blood-letting) - *Siravedha* may be done if pain is acute and severe or is not pacified with any of the therapeutic measures.

Recommended diet and Lifestyle: Same as levels 1& 2

Rasona Ksheera Paka (paste of 5 gm garlic bulbs boiled with 40 ml milk and 40 ml water till 40 ml milk is left) may be advised 40 ml daily for 15 days or a month. *Shunthisiddha Jala* may be advised for drinking throughout the day as per requirement (especially during winter season).

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.

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5 FIBROMYALGIA

5
FIBROMYALGIA

NAME OF THE DISEASE

Fibromyalgia (ICD-10: M79.7)[1]

Chronic widespread pain (Fibromyalgia syndrome) (ICD-11: MG30.01)

Sama Vata (*Sarva Maruta Saamam*) vitiated *Vayu* associated with *Ama AAE-9* Mamsagatavata मांसगतवातकोप vitiated वात in मांस the disorder is characterized by गुर्वङ्गम् [heaviness of the body], तुद्यतेऽत्यर्थंदण्डमुष्टिहतंतथा [excessive pain in the body as if beaten by a stick or with fist-cuffs], सरुक्श्रमितमत्यर्थम् [pain and excessive fatigue], कर्कश-ग्रन्थिः [glandular swelling which is hard/firm/rough], तोदः [pricking pain], श्रमम् [exhaustion/fatigue], अतिरुक् [severe pain], स्तब्धम् [stiffness], सशूल-ग्रन्थिः [glandular swelling with pain]

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.[2,3]

SamaVata: When the vitiated *Vata Dosha* gets intricately associated with *Ama*, it is characterized by *Tandra* (Drowsiness) *Staimitya* (stiffness as if wrapped by a wet cloth) *Gourava* (heaviness of the body), *Snigdhatva*(unctuos appearance) *Arochaka* (Anorexia) *Alasya*(lethargy) *Saitya (*subnormal temperature of the affected area*) sopha* (swelling) *Agnihani* (diminished Agni) *Katu-ruksha Abhilasha* (preference for use of spicy nd un-unctuous foods), *Upasaya* with *Katu ruksha (relief with use of spicy and un-unctuous foods)*. When *Vata* and *Ama*, in the form of *Samavata*, become localized in the muscular tissue (*Mamsa*), it can give rise to symptoms akin to those observed in Fibromyalgia.

INTRODUCTION *(Incidence/Prevalence, Morbidity/Mortality)*

- 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]

Ayurveda pathophysiology:

The etiopathogenesis that initiates with the association of *Ama* and *Vata* resulting in the formation of *SamaVata*, and gets localized subsequently in the presence of favorable factors, in the *Mamsa Dhatu* of the body, resulting in the production of characteristic symptoms such as heaviness of the body, excessive pain, fatigue and stiffness with or without swelling.

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:

i) 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)

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.

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

ii) Generalized pain: pain in 4/5 regions.
iii) Symptoms have been present > or = 3 months.
iv) 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[2]

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.

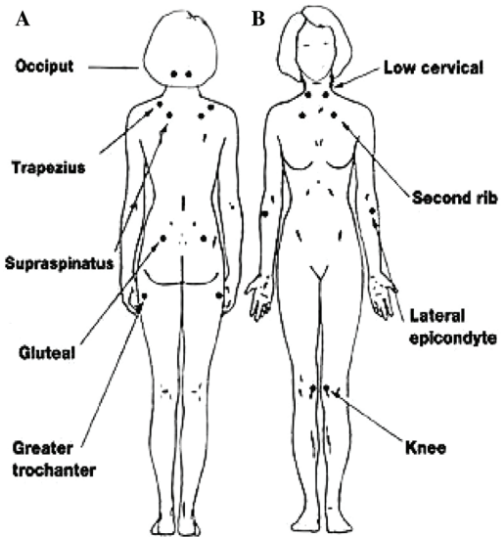


Figure 1: Tender points assessment in patients with fibromyalgia [4]

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

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]

Ayurveda diagnostic assessment:

Either may be considered under MamsagataVata or Mamsagata Samavata

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.

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
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[8]

Red Flag Signs of Fibromyalgia:

These signs should be assessed before initiating treatment for need for management/ consultation 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 therapies [11].

The Ayurvedic approach to managing fibromyalgia involves a comprehensive assessment of the underlying causes. The patients with secondary widespread pain are considered as *Samavata* pathology and appropriate treatment of *Pachana* is initiated as *First line*, in case of patients under *Mamsagatavata* pathology *Vata samana, Snehana*, *Swedana*, *Mridu shodhana* in the form of *Virechana* is initiated. In the presence of symptoms of *Ama, Rukshana* in the form of *Rukshasweda*, such as *Valukasweda, Patrasweda, Churna Pindasweda* etc are indicated. Associated Psychosomatic symptoms may be managed with *Shirodhara, Shiropichu, Shiro-abhyanga*, etc.

Education to 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 behavioural therapy.

Ayurveda based diet and lifestyle advocacy can be beneficial in the maintenance of *Agni* and *Dosha* homeostasis.

Maintaining a healthy lifestyle by adapting to seasonal and daily fluctuations, making appropriate dietary choices, and adjust the lifestyle as per the condition.

All necessary precautions should be taken to preserve the *Agni* and avoid dietary practices that may lead to the manifestation of *Mandagni*, which may trigger the state of *Ama-avasta* (accumulation of toxins). Factors such as the consumption of cold, excessively oily, and excessively dry foods, overeating, and untimely intake of food should be carefully considered. Patients should tailor their dietary habits to align with their individual appetite and body requirements.

Preferable Diet &Lifestyle

Sl No	Preferable diet	Preferable Life style
1	Properly cooked fresh and favorable food intake at appropriate time in appropriate quantity	Appropriate exercises and appropriate amount of rest
2	• Aged cereals like wheat and rice, green gram • Fruits like grapes, *Draksha* (Dried Grapes), *Badara* (*Zizyphus sativus*), *Amra* (*Mangifera indica*) • Vegetables like sweet potato, carrot, bottle gourd, round gourd, garlic, *Patola/paraval* (*Trichosanthes dioica*), *Shigru* (drum stick), *Kushmanda (petha)*	Oil Massage (*Abhyanga*), *Atapa Sevana* (Sun bath with mild sun rays), Comfortable mattress (*Sukha Shayya*), *Ushnodaka Snana* (Warm water bath for body) & normal water bath for head
3	Judicious intake of milk and ghee especially from indigenous cow or goat	Proper sleep
4	Drinking Luke warm or boiled water brought to normal temperature/ medicated drinking water as per the season	Posture correction while doing the movements or daily living activities

Sl No	Preferable diet	Preferable Life style
5	Properly cooked fresh and favourable food intake in time in appropriate quantity	Practice stress-reduction techniques such as meditation, deep breathing exercises, progressive muscle relaxation, or mindfulness to manage stress and anxiety
6	A well-balanced diet that includes a variety of whole foods, such as fruits, vegetables, lean proteins, whole grains, and healthy fats	Avoid overexertion. Break tasks into smaller, manageable segments, and take regular breaks to prevent flare-ups of pain and fatigue.
7	Anti-Inflammatory Foods such as fatty fish (salmon, mackerel, and sardines), nuts, seeds, berries, turmeric, and ginger. These foods may help reduce inflammation, which is often associated with fibromyalgia.	Build a strong support network of family and friends who can offer emotional support
8	Foods's rich in magnesium, such as leafy greens, nuts, seeds, and whole grains, may help with muscle relaxation and pain management	Modify work environment and daily activities to reduce strain on your body
9		Dress appropriately for the weather and use heating pads or cooling packs as needed.

Restricted Diet & Lifestyle

List of restricted dietary items	List of restricted activities
Excessive intake of dry/preserved/frozen vegetables or foods, regular and excessive intake of cabbage, cauliflower, celery, brinjal, potatoes and tomatoes	Suppression of natural urge especially of hunger, bowel and urine and emotions
Refined foods such as bakery products made of white flour and vegetable oils, junk food, reheated or burnt food	Physical injuries to musculoskeletal organs
Excessive intake of dry food items pulses like black eyed beans, lentils, peas, yellow gram, vegetables prepared with less or no oil or ghee etc.	Over exertion, over strain
Excessive intake of sour and pungent food, acrid (*Atikatu)* and astringent tasting foods like chilli sauce, black pepper powder, green chilli etc.	Extreme heat or cold. It can worsen pain and discomfort for some individuals with fibromyalgia.
Cold drinks, beverages, chilled food, ice cream; Smoking, Caffeine and Alcohol	Sporadic and inconsistent exercise routines
Intake of processed foods, sugary snacks, and beverages	Aggressive behavior and over manifestation of grief

List of restricted dietary items	List of restricted activities
False dietary practices like intermittent dieting and keto diet etc.	Abrupt and excessive physical exertion through continuous walking, running, standing, climbing, swimming, crawling and sitting. Sports involving physical strain on joints and muscles. Sedentary work in bad posture continuously for long hours (e.g., working on laptop, desktop).
Frequent and long duration fasting habits, inadequate diet intake, irregular meal timings, eating untimely e.g., during late night or binge eating etc.; frequent overeating	Insufficient sleep at night or frequent changes in sleep pattern, habitual postprandial day sleeping

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.

Management:

S.No.	Drugs	Dosage form	Dose	Time	Mode of administration	Duration	Adjuvants
1	*Rasna Panchaka Kashaya*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
2	*Rasnasaptaka kashaya*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
3	*Brahmi Drakshadi kashayam*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
4	*Satavaryadi kashayam*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
5	*Manasamitra vatakam*	Gulika	1-0-1	After meal	Oral	15 days	Lukewarm water or milk
6	*Shaddharana churna gulika*	Gulika	1-0-1	Before meal	Oral	15 days	Lukewarm water
8	*Mahakalyanaka Ghritam*	Ghritam	10ml	Bedtime, (after at-least 2- hrs after food)	oral	45 days	Lukewarm water

S.No.	Drugs	Dosage form	Dose	Time	Mode of administration	Duration	Adjuvants
9.	*Drakshadi panakam*	Decotion	QS	SOS	Oral	30 days	NA
10	*Ksheerabala 101 avarthi*	Tailam	As nasyam	Evening	Nasal	45 days	NA
11	*Amrita shadangam kashayam*	Decotion	As panakam	SOS	Oral	30 days	NA
12	*Ashwagandharishtam*	Arishtam	60ml in two divided doses	After meal	Oral	30 days	NA
13	*Gandharvahastati kashaya*	Decoction	20-40 ml in two divided doses	beforemeal	Oral	15 days to one month	Lukewarm Water
14	*Ashwagandha Churna*	Powder	3-5 gms	After meals	Oral	30 days	With water/ milk
15	*Madhuyastyadi Tailam*	Taila	E/A Scalp and body	Once daily evening	External application	45 days	NA
16	*Ksheerabala tailam*	Tailam	QS	Once daily	External application	45 days	NA
17	*Balarishta*	Arishtam	60ml in two divided doses	After meal	Oral	30 days	NA
18	*Mahamasha taila*	Tailam	QS	Oncedaily	External	45 days	NA

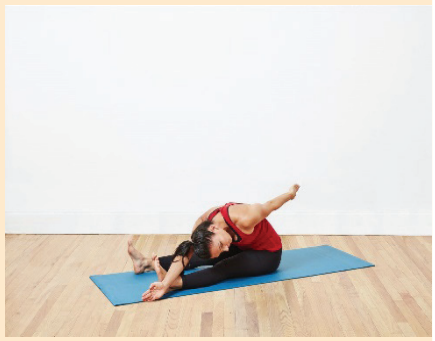
*the therapeutic interventions prescribed should be customized as per the *Rogabala, Rogibala, Agni, Koshta*, and presence of *Ama* etc. The time for use of oil shall also be decided judiciously.

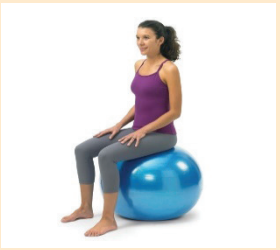
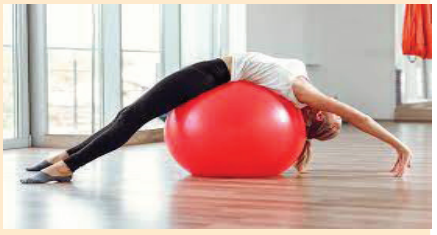
Recommended Diet and Lifestyle [14-17]:

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 (Marjariasana, 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.[14,15]

- 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:[16,17]

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: [16]

- 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 [19,20] 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-response 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

- 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.

S.No.	Drugs	Dosage form	Dose	Time	Mode of administration	Duration	Adjuvants
1	*Rasna Panchakam Kashayam*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
2	*Rasnasaptakam kashayam*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
3	*Brahmi Drakshadi kashayam*	Decoction	60-80 ml in two divided doses	Empty stomach	Oral	15 days to one month	Lukewarm Water
5	*Manasamitra vatakam*	Gutika	1-0-1	After meal	Oral	15 days	Lukewarm
6	*Shaddharanam Gulika*	Gutika	1-0-1	Before meal	Oral	15 days	lukewarm
8	*Mahakalyanaka Ghritam*	Ghritam	10ml	Bedtime (2-3 hrs after dinner)	Oral	45 days	Lukewarm water
9.	*Drakshadi panakam*	Decotion	QS	SOS	Oral	30 days	-
10	*Ksheerabala 101 Avarthi*	Tailam	As nasyam	Evening	Nasal	45 days	-
11	*Amrita shadangam kashayam*	Decotion	As panakam	SOS	Oral	30 days	-
12	*Ashwagandharishtam*	Arishtam	60ml in two divided doses	After meal	Oral	30 days	-
13	*Madhuyastyadi Taila*	Taila	E/A Scalp and body	Once daily	External	45 days	-

S.No.	Drugs	Dosage form	Dose	Time	Mode of adminis-tration	Duration	Adjuvants
14	*Gandharvahastadi kashaya*	Decoction	20-40 ml in two divided doses	Empty Stomach	Oral	15 days to one month	_
15	*Ashwagandha Churna*	Powder	3-5 gms	After meals	Oral	30 days	With water/ milk
16	*Balarishta*	Arishtam	60ml in two divided doses	After meal	Oral	30 days	NA
17	*Mahamasha taila*	Tailam	QS	Once daily	External	45 days	NA

*the therapeutic interventions prescribed should be customized as per the *Rogabala, Rogibala, Agni, Koshta*, and presence of *Ama* etc. The time for use of oil shall also be decided judiciously.

Purification/ other procedures (As per applicability)

- *Rukshana* using *Yavanna / Churna Potli Swedan* with *Kolakulathadi Churna/ Kottamchukkadi Churna* 3-7 days
- *Snehapanam* with *Mahakalyanaka Ghritam/ Goghrita* for maximum 7 days in Arohana method (in case the patient is fit for *Sodhana*)
- If the patient is fit for oil application, after ruling out *Samavata* situation, then Abhyanga can be considered. *Sarvanga Abhyanga* with *Dhanvantaram tailam/ Ksheerbala Tailam/Mahanarayan tailam* for 3 days followed by *Sarvanga Swedan* with *Dashamula Kashaya/ Nirgundi Kashaya*
- *Virechanam* with *Avipathy churnam / Trivrittav Leham/ Trivrit churna* with *Triphala Kashayam* for 1day (Dose to be fixed as per the *Koshta & Bala* of Patient)
- *Samsarjana Krama* as per the *Shuddhi* of the patient for 3-7 day
- *Basti Chikitsa* (Per rectum administration of medicinal decocotion/oil): *Niruha Basti* i.e per rectum administration of oil based medicated decoction with *Erandmooladi/ Dashamula/ Balaguduchyadi Kashaya* and *Anuvasan Basti* i.e administration of medicated fats per rectum with *Dhanwantaram tailam or* such suitable oils
- *Matra Basti* with *Ksheera Bala Taila/Bala Taila* if *Koshtagata Vata* is suspected.
- *Nasyam With Ksheerabala101 Avarthi* or any other suitable Taila for Nasya may be considered as a therapeutic option for 3 days
- *Shirodhara* with *Ksheerabala* or suitable oil may be contemplated for 7 days, if the patient has associated psycho-somatic involvement or *Nidra Nasha* etc.

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 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, counselling, and physiotherapy units)

Clinical Diagnosis:

Same as levels 1& 2.

Management:

Same as levels 1 & 2.

In addition to the level 1 and level 2 management strategies, Ayurveda has a number of specific remedies that can ease pain and other symptoms in patients with FM 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. Medications can be prescribed as a part of supportive management based on the sphere of action or keynote prescription in these disorders as well as other advanced pathological states.

S.No.	Drugs	Dose form	Dose	Time	Duration	Adjuvants
1	*Rasna Panchakam kashayam*	Decoction	60-80 ml in two divided doses	before meal	15 days to one month	Lukewarm Water
2	*Rasna saptakam kashayam*	Decoction	60-80 ml in two divided doses	Before-meal	15 days to one month	Lukewarm Water
5	*Manasamitra vatakam*	Gutika	1-0-1	After meal	15 days	Lukewarm
6	*Shaddharanam Gulika*	Gutika	1-0-1	Before meal	15 days	lukewarm

S.No.	Drugs	Dose form	Dose	Time	Duration	Adjuvants
8	*Mahakalyanaka Ghritam*	Ghritam	10ml	Bedtime	45 days	Lukewarm water
9.	*Drakshadi panakam*	Decotion	QS	SOS	30 days	-
10	*Ksheerabala 101 avarthy*	Tailam	As re-quired	Evening	45 days	-
11	*Amrita shadangam kasha-yam*	Decotion	As panakam	SOS	30 days	-
12	*Ashwagandharishtam*	Arishtam	60ml in two divid-ed doses	After meal	30 days	With equal qty of water
13	*Madhuyastyadi Taila*	Taila	E/A Scalp and body	Once daily	45 days	-

Purification/ other procedures (as per applicability)

- *Rukshana* using *yavanna.*
- *Snehapana* with *mahakalyanaka ghritam* for maximum 7 days in Arohana method.
- *Virechanam* with *Avipathy churnam* 30gms for 1day.
- *Nasya* with *Ksheerabala 101 avarthy* or suitable oils for 3 days.
- *Shirodhara* with *Ksheerabala* or such *Taila* for 7 days.

Other non-pharmacological therapies [11]:

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:

- *Mindfulness – meditation to maintain proper sleep hygiene.*
- *Hydrotherapy – for pain reduction, research evidence shows a moderate effect of this therapy* on FM patients.[21]

Recommended Diet and Lifestyle: Same as levels 1 & 2

Restricted Diet and Lifestyle: Same as levels 1 & 2

Yoga- Sookshma vyayama, normal breathing exercises, different asanaas, pranyamas can be advised. Proper yoga schedule including meditation, asana and pranayama can be suggested.

Yogaasana schedule[22]

- *Shavasana* (Corpse Pose)
- *Ardhahalasana* (Half plow pose)
- *Makar kridasana* (12) (Crocodile pose)
- *Niralambasana* (Neck stretching pose)
- *Bhujangasana* (Cobra pose)
- *Ardha Shalabhasana* (Half locust pose)
- *ArdhaVakrasana* (Half twisted pose)
- *Parvatasana* (Mountain Pose)
- *Marjariasana* (Cat Pose)
- *Tadasana* (Palmtree Pose)
- *Lateral Chakrasana* (wheel pose)
- *Kati Chakrasana* (Spinal twist pose)
- *Bramha mudra* (Neck rotation)
- *Anulomvilom Pranayama* (alternate nostril breathing)
- *Omkar* (3 rounds)
- *Gayatri Mantra* (3 rounds)
- *Bhramari Pranayama* (Humming bee breath) (10 rounds)
- *Shavasana* (Corpse Pose) (15-25 min)

All the asanas have to be maintained for 30 sec to 1 min daily.

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

Referral Criteria

Same as mentioned earlier at levels 1 and 2.

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6 ADHESIVE CAPSULITIS

6
ADHESIVE CAPSULITIS

***Adhesive Capsulitis* (Frozen Shoulder) (ICD 10 Code: 75.0; ICD 11 Code: FB 53.0)**

Avabahukah: (ICD-11 TM2 : SP15)

***Avabahukah* (National Ayurveda Morbidity Code: AAE-8)**

CASE DEFINITION

Avabahukah is caused by vitiated *Vata dosha* located at the shoulder joint and causing *Bahu praspanditaharam* (loss of movement of the arm).[1]

Adhesive capsulitis is characterized by pain and restricted movement of the shoulder and is also known as "Frozen Shoulder".[2] It is a condition of uncertain aetiology that occurs in the absence of a known intrinsic shoulder disorder.[3] 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".[4]

INTRODUCTION (incidence/prevalence, morbidity/mortality)

Avabahuka is a disease condition affecting the *Amsa Sandhi* (shoulder joint) due to vitiated *Vatadosha* resulting in "dysfunction of *Bahu*" (stiffness or disability in the affected arm). Vitiated *Vata* at *Amsamula* (shoulder joint) in *Avabahuka* manifests as *Bahu praspanditahara* (loss of movement of the arm).[1] On the other hand, *Acharya Sushruta* points out that the aggravated *Vatadosha* localized in the *Amsadesha* (shoulder region) affects the adjoining ligaments, resulting in *Avabahukah*.[5] According to *Madhukoshavyakhya* of *MadhavaNidana*, *Avabahukah* is produced by *Vatakaphadosha* and also mentioned, another condition, namely, *Amsa Sosham*, produced by *Kevala Vatadosha*.[6]

Prevalence

- A study from India reported that approximately 50% people suffering from shoulder pain and stiffness presents with diabetes.[7] Globally, prevalence of 10-22% is reported among diabetic patients.[8]
- 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.[10,11] The mean age of onset of the disease is 55 years.[12]
- Adhesive capsulitis is slightly more common in women (1.4:1).[12]
- In about quarter of the patients, the disease is bilateral.[4]

Nidana

Excessive intake of *Tikta* (bitter), *Katu* (pungent) and *Kashaya* (astringent) *Rasa Ahara* and *Rookshasheeta ahara* (dried/preserved/frozen/chilled foods), inadequate diet or malnutrition and habit of untimely eating, either suppression or premature initiation of the urges (of urine, faeces, flatus, etc.), keeping awake at night and speaking in high pitch for a long time, improper or excess administration of bio purificatory procedures (such as emesis and purgation), exposure to fear, grief and worry, excessive indulgence in exercise and sexual intercourse, chronic illness or debilitating diseases and trauma.[13]

Samprapti

Vatadosha gets aggravated by either of the two pathologies associated with *Vataprakopa viz*. *Dhatu kshayajanya* (degenerative pathology) or *Avaranjanya* (obstructive pathology). This vitiated *Vatadosha* when gets located in the *Amsasandhi* (shoulder joint) causes *Avabahukah*.[14]

Clinical presentation[1,5]

1. *Bahu praspandita haram* (restricted mobility of the affected arm)
2. *Amsa bandhanasosham* (atrophy of muscles surrounding the shoulder joint)

DIAGNOSTIC CRITERIA

Frozen shoulder is classified into primary and secondary with secondary frozen shoulder further subdivided into intrinsic, extrinsic, and systemic categories.[15]

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.[15-17]

The diagnosis of shoulder pain is essential to direct intervention and informs prognosis.[18]

- Idiopathic frozen shoulder is characterised by spontaneous and sudden onset of severe pain and it may follow minor trauma.[19]
- 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 movement1 (elevation <100°, external rotation >50% restriction).[4]
- 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.[19]

Clinical course:

The clinical course of frozen shoulder can be divided into three stages as follows:[3,19,20]

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.[19] This phase is characterized by an acute synovitis of the gleno-humeral joint.[20]

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.[19] There is restriction of external shoulder rotation followed by shoulder flexion, and internal rotation.20

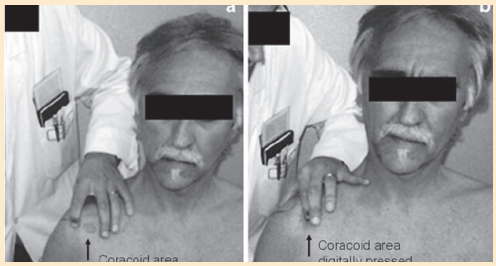
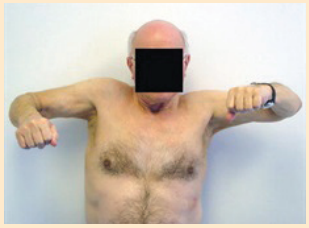
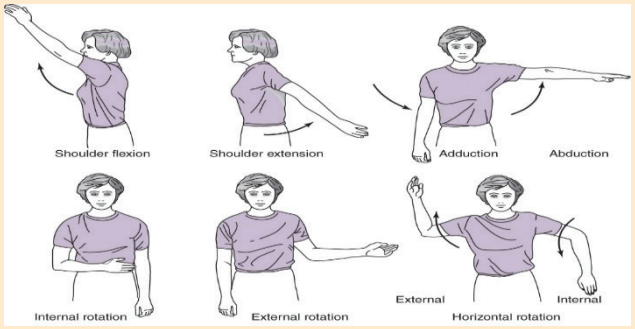
Stage 3 – Thawing phase: This lasts for a further 4–12 months and is associated with a gradual improvement in the range of motion.

The idiopathic frozen shoulder usually resolves without any long-term sequelae after running its clinical course runs over a period of 1–3 years.19 In some cases it can persist, presenting symptoms like mild pain which is the most common complaint or with some limitation of shoulder motion.[3] 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[18]

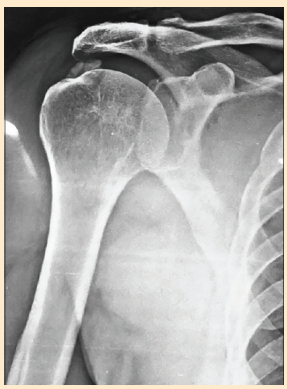
Clinicians should measure pain, active shoulder Range of Motion (ROM), and passive shoulder ROM to assess the key impairments of body function and body structures. *It is often viewed as a diagnosis of exclusion.*

Coracoid Test	It is a highly sensitive and specific clinical examination finding for adhesive capsulitis.[21]	 Digital pressure on the coracoid area (fig b) evokes pain compared to other shoulder area (fig a)[21]
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.[22]
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[23]
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:[24]

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.[19] They are typically normal in adhesive capsulitis but can identify osseous abnormalities, such as glenohumeral osteoarthritis.[5] Radiographs of the shoulder show osteopenia.[2]	
		X-ray showing calcific deposits in suprsapinatus tendon[25]

DIFFERENTIAL DIAGNOSIS:[24]

The following conditions should be considered in the differential diagnosis when a patient presents with shoulder pain:

Condition	Differential Features
Posterior gleno-humeral 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.
Sub-acromial 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
Acromio-clavicular 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.
Gleno-humeral arthritis	• Patients may note a sensation of "popping" or crepitus. • Decreased joint space and marginal osteophytes on X-Ray.

Differential Diagnosis as per Ayurveda

DISEASES	LAKSHANA	Symptomatology	Features in *Avabahukah*
Viswachi	तलंप्रत्यङ्गुलीनांयाकण्डराबाहुपृष्ठतः। बाहुचेष्टापहरणीविश्वाचीनामसास्मृता	This condition typically manifests as restricted movement of the arm / restricted Range of Motion and the patients may also present with pain radiating along the outer aspect of the arm .[26]	Pain will be typically present in and around the shoulder region and will not be radiating.
Snayugata Vata	स्नावस्थितःकुर्याद्गृध्रस्यायामकुब्जताः	Complaints of stiffness, tremors, pain and slight deformity at the affected site.[27]	Tremors or deformities will be absent

DISEASES	LAKSHANA	Symptomatology	Features in *Avabahukah*
Sandhigata Vata	वातपूर्णदृतिस्पर्शशोफंसन्धिगतोऽनिल: प्रसारणाकुञ्चनयो:प्रवृत्तिंचसवेदनाम्	Complaints of swelling, pain and restricted movements of the affected joint.[28]	Swelling is not a feature.
Ekangavata	गृहीत्वाऽर्धंतनोर्वायु:सिरा:स्नायूर्विशोष्यच॥ ३८॥ पक्षमन्यतरंहन्तिसन्धिबन्धान्विमोक्षयन्। कृत्स्नोऽर्धकायस्तस्यस्यादकर्मण्योविचेतन:	Joint disability, and sensory impairment.[29]	Sensory impairment is not a feature
Amsamarma Abhigata	स्कन्धांसपीठसम्बन्धावंसौबाहुक्रियाहरौ	Restricted movement of shoulder joint as a result of external acute injury. [30]	Secondary type of adhesive capsulitis may resemble this etiology and symptomatology

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.[4] It is important to consider the patient's symptoms, stage of the condition, and patterns of motion loss when selecting a treatment method.[20] 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.24 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 Ayurveda therapy and the medication can be re-assessed further in the follow-up visits for discontinuing the standard treatment in consultation with a conventional physician.

Ayurvedic line of management

The line of treatment may be selected based on the pathological phase assessed by history and physical examination as mentioned above. Therapeutic protocol may be delineated based on the *Doshaavastha* viz. *Vatakaphaja* or *Kevalavataja*. In *Vatakaphajaavastha*, internal and external treatment predominant in *rooksha*, *tikshna* and *ushnaguna* may be selected. In *Kevala Vataja Avastha*, *Snigdha*, *Ushna* and *Brimhana chikitsa* should be opted. Specific treatment as per Ayurveda classical texts is *Nasya* and *Uttara bhaktika Snehapana*.[31]

(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.[32,33] Good control of diabetes may help to prevent secondary adhesive capsulitis.[34,35]

(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.

Management

List of interventions

Sr.No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
In the *Vatakaphaja* condition (*Amapachana, Sophahara, Vatakaphaharachikitsa*)						
1.	*Rasna saptakam Kashaya*[36]	Kashaya (Decoction)	15 ml	Twice daily on empty stomach or before food	15 days to one month	30 ml of warm water
2.	*Dashamula Kwatha*	Kashaya (Decoction)	15 ml	-do-	15 days to one month	30 ml of warm water
3.	*Punarnavadi Guggulu*[37]	Vati (Tablet) - 250 mg	500 -1500mg per day	Twice or thrice daily after food	15 days to one month	With luke warm water
4.	*Trayodashanga Guggulu*[38]	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water
5.	*Yogaraja Guggulu*[39]	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water
6.	*Ekangveer Rasa*	Vati (Tablet) - 125 mg	125-250 mg per day	-do-	15 days to one month	With luke warm water
7.	*Sanjeevani vati*	Vati (Tablet) - 250 mg	250-500 -mg per day	-do-	15 days to one month	With luke warm water
8.	*Ajamodadichurna*	Churna (Powder)	5-10 gm per day	-do-	15 days to one month	With luke warm water
9.	*Punarnavasava*[40]	Asava-Arista	30-60 ml per day	-do-	15 days to one month	Nil

Sr.No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
10.	*Kottamchukkadi Taila*[41]	*Taila* (Oil)	As required	local application once or twice in a day	15 days to one month	Nil
11.	*Dashanga Lepa*	Lepa	As required	local application once or twice in a day	15 days	-
In the *Kevalavata* condition (*Kevala vata chikitsa, Ushna Snigdha Brimhana chikitsa*)						
12.	*Ashwagandha churna*	Churna (Powder)	5-10 gm per day	Twice daily after food	15 days to one month	With lukewarm water
13.	*Balarishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
14.	*Dashamularishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
15.	*Guggulu Tiktaka Ghrita*[42]	Ghee	5 – 15 gm	Twice daily before food	1– 3 months	Warm water
16.	*Kanchanara Guggulu*[43]	Vati (Tablet) - 250 mg	500 -1500mg per day	Twice daily after food	15 days to one month	With lukewarm water
17.	*Chandraprabha Vati*[44]	Vati (Tablet) - 250 mg	500 -1500mg per day	Twice daily after food	1 – 3 months	With lukewarm water
18.	*vatavidhwansa rasa*[45]	Vati (Tablet) - 125 mg	250-500 mg per day in divided doses	Twice daily after food	15 days to one month	With lukewarm water
19.	*Bala Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
20.	*Mahamasha Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
21.	*Narayana Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
22.	*Panchaguna Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
23.	*Prasarini Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
24.	*Anu Taila*	*Taila* (Oil)	2 drops in each nostrils	Once in a day (preferably morning)	15 days	Nil

Panchkarma procedures:

- ***Vatakaphaja* condition:**
  - ***Lepa/Upnaaha:*** with *Nagaradi Churna* or *Kottamchukkadi Churna*
  - ***Abhyanga:*** *Laghuvisagarbha Taila, Mahavishagarbha Taila, Saindhavadi Taila, Karpasasthyadi Taila, Kottamchukkadi Taila*
  - *Ruksha Swedana* such as *Baluka Sweda; Churna panda sweda with kolakulathadi churna, kotttamchukkadi churna*

- *Nadi Sweda* with *Dashamula Kwatha*
- *Agnikarma*[46]: to relieve the stiffness and pain at the site having maximum tenderness
- *Raktamokshana:* to relieve inflammation, pain and stiffness. *Jalaukavacharana* (leech therapy) is widely used procedure in the management of *Avabahukah.*

➢ ***Kevala Vataja***

- *Abhyanga*[47:] With *Prasarini Taila, Mahamasha Taila, Narayana Taila, Panchguna Taila, Bala Taila*
- *Pratimarsha Nasya* with *Anu Taila, Ksheerabala Taila* 101 avarthy - two drops in each nostril daily.

Recommended Diet and Lifestyle

Patient Education: Patients should be educated about 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.[48]

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.[24]

Yoga: Various yoga practices are helpful for the management of patients with adhesive capsulitis.[49] 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.*[50] Few of the standing group of asanas that can be practices are *Tadasana, Tiriyakatadasana, Katichakrasana, Trikonasana, Ardhakatichakrasana, Chakkichalanasana, Dwikonasana, Ardhachakrasana, Natarajasana, Shashankasana,* 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.[51]

Restricted Diet and Lifestyle[24,52]

Diet: Avoid diet rich in saturated fats such as butter, cheese, red meat and other animal-based foods, and tropical oils, as hypercholesterolemia, particularly hyper-low-density lipo proteinemia 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:[24]

- 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-response 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 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: For the patients referred from Level-1, treatment given in level-1 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 may also be considered while giving prescription. Any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

List of interventions

Sr. No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
In the *Vatakaphaja* condition (*Ama pachana, Sophahara, Vatakaphaharachikitsa*)						
1.	*Rasna saptakam Kashaya*	*Kashaya* (Decoction)	15 ml	Twice daily on empty stomach or before food	15 days to one month	30 ml of warm water
2.	*Dashamula Kwatha*	*Kashaya* (Decoction)	15 ml	-do-	15 days to one month	30 ml of warm water

Sr. No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
3.	*Punarnavadi Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	Twice or thrice daily after food	15 days to one month	With luke warm water
4.	*Trayodashanga Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water
5.	*Yogaraja Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water
6.	*Ekangveer Rasa*	Vati (Tablet) - 125 mg	250-500 mg per day in divided doses	-do-	15 days to one month	With luke warm water
7.	*Sanjeevani vati*	Vati (Tablet) - 250 mg	250-500 -mg per day	-do-	15 days to one month	With luke warm water
8.	*Ajamodadi churna*	Churna (Powder)	5-10 gm per day	-do-	15 days to one month	With luke warm water
9.	*Punarnavasava*	Asava-Arista	30 – 60 ml per day	-do-	15 days to one month	Nil
10.	*Kottamchukkadi Taila*	*Taila* (Oil)	As required	local application once or twice in a day	15 days to one month	Nil
11.	*Dashanga Lepa*	Lepa	As required	local application once or twice in a day	15 days	-
In the *Kevalavata* condition (*Kevalavatachikitsa, Ushna Snigdha Brimhana Chikitsa*)						
12.	*Ashwagandha churna*	Churna (Powder)	5-10 gm per day	Twice daily after food	15 days to one month	With luke warm water
13.	*Balarishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
14.	*Dashmularishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
15.	*Guggulu Tiktaka Ghrita*	Ghee	5 – 15 gm	Twice daily before food	1 – 3 months	Warm water
16.	*Kanchanara Guggulu*	Vati (Tablet) - 250 mg	500 -1500 mg per day	Twice daily after food	15 days to one month	With lukewarm water
17.	*Chandraprabha Vati*	Vati (Tablet) - 250 mg	500 -1500 mg per day	Twice daily after food	1 – 3 months	With lukewarm water
18.	*vatavidhwansa rasa*	Vati (Tablet) - 125 mg	250-500 mg per day in divided doses	Twice daily after food	15 days to one month	With lukewarm water
19.	*Bala Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
20.	*Mahamasha Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
21.	*Narayana Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
22.	*Panchguna Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil

Sr. No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
23.	*Prasarini Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
24.	*Anu Taila*	*Taila* (Oil)	2 drops in each nostrils	Once in a day (preferably morning)	15 days	Nil

Panchkarma procedures:

- ***Vatakaphaja:***
  - *Lepa/Upnaaha:* with *Nagaradi Churna* or *Kottamchukkadi Churna*
  - *Abhyanga: Laghuvisagarbha Taila, Mahavishagarbha Taila, Saindhavadi Taila, Karpasasthyadi Taila, Kottamchukkadi Taila*
  - *Ruksha Swedana* such as *Baluka Sweda; Churna pinda sweda with kolakulathadi churna, kotttamchukkadi churna*
  - *Nadi Sweda* with *Dashamula Kwatha*
  - *Jambeera pinda swedana*: by specially prepared *pottali* made with *Jambira* [Citrus limon (L)].
  - *Agnikarma*[46]: to relieve the stiffness and pain at the site having maximum tenderness
  - *Raktamokshana:* to relieve inflammation, pain and stiffness. *Jalaukavacharana* (leech therapy) is widely used procedure in the management of *Avabahukah*
- ***Kevala Vataja***
  - *Abhyanga*[47]: With *Prasarini Taila, Mahamasha Taila, Narayana Taila, Panchguna Taila, Bala Taila.*
  - *Patra Pottali swedana*: to relief from pain, inflammation, swelling and stiffness.[53]
  - *Shastika Shali swedana*: relieves muscular stiffness and helps in relieving pain. [54]
  - Localised *Basti* with *Panchaguna Taila, Dhanwantaram Taila, Prasarini Taila, Ksheerabala Taila, Mahanarayana Taila, etc.*
  - Local *Pizhichil/ Dhara*: causes relaxation of muscles and tendons, improves the blood circulation, thereby providing relief in pain, tenderness, swelling, and stiffness.[55]
  - *Marsha Nasya* with *Anu Taila, Ksheerabala Taila* 101 avarthy.

Other procedures:

Physiotherapy: Physiotherapy is the cornerstone of successful treatment and should be initiated as early as possible in the disease course.56 Evidence suggests manual mobilisation techniques with exercise are effective for adhesive capsulitis.[20,52,57] 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.[58]

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 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

Management

For the patients referred from Level-1 or 2, treatment given in level-1 &/or 2 may be continued if appropriate for the presenting condition. For new cases at this level, the medications mentioned for Level-1 & 2 may be considered while giving prescription and any of the following medicines may be added as appropriate. Indoor management may be preferred if necessary.

List of interventions

Sr. No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
In the *Vatakaphaja* condition (*Ama pachana, Sophahara, Vatakaphaharachikitsa*)						
1.	*Rasnasaptakam Kashaya*	Kashaya (Decoction)	15 ml	Twice daily on empty stomach or before food	15 days to one month	30 ml of warm water
2.	*Dashamula Kwatha*	Kashaya (Decoction)	15 ml	-do-	15 days to one month	30 ml of warm water
3.	*Punarnavadi Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	Twice or thrice daily after food	15 days to one month	With luke warm water
4.	*Trayodashanga Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water

Sr. No.	Drugs	Dosage form	Dose	Time	Duration	Adjuvants
5.	*Yogaraja Guggulu*	Vati (Tablet) - 250 mg	500 -1500mg per day	-do-	15 days to one month	With luke warm water
6.	*Ekangveer Rasa*	Vati (Tablet) - 125 mg	250-500 mg per day in divided doses	-do-	15 days to one month	With luke warm water
7.	*Sanjeevani vati*	Vati (Tablet) - 250 mg	250-500 -mg per day	-do-	15 days to one month	With luke warm water
8.	*Ajamodadi churna*	Churna (Powder)	5-10 gm per day	-do-	15 days to one month	With luke warm water
9.	*Punarnavasava*	Asava-Arista	30 – 60 ml per day	-do-	15 days to one month	Nil
10.	*Kottamchukkadi Taila*	*Taila* (Oil)	As required	local application once or twice in a day	15 days to one month	Nil
11.	*Dashanga Lepa*	Lepa	As required	local application once or twice in a day	15 days	-
In the *Kevalavata* condition (*Kevalavatachikitsa, Ushna Snigdha Brimhanachikitsa*)						
12.	*Ashwagandha churna*	Churna (Powder)	5-10 gm per day	Twice daily after food	15 days to one month	With luke warm water
13.	*Balarishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
14.	*Dashmularishta*	Asava-Arista	30-60 ml per day	Twice daily after food	15 days to one month	Nil
15.	*GugguluTiktaka Ghrita*	Ghee	5 – 15 gm	Twice daily before food	1 – 3 months	Warm water
16.	*Kanchanara Guggulu*	Vati (Tablet) - 250 mg	500 -1500 mg per day	Twice daily after food	15 days to one month	With lukewarm water
17.	*Chandraprabha Vati*	Vati (Tablet) - 250 mg	500 -1500 mg per day	Twice daily after food	1 – 3 months	With lukewarm water
18.	*Vatavidhwansanrasa*	Vati (Tablet) - 125 mg	250-500 mg per day in divided doses	Twice daily after food	15 days to one month	With lukewarm water
19.	*Bala Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
20.	*Mahamasha Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
21.	*Narayana Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
22.	*Panchaguna Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
23.	*Prasarini Taila*	*Taila* (Oil)	As required	Once or twice in a day LA	15 days to one month	Nil
24.	*Anu Taila*	*Taila* (Oil)	2 drops in each nostrils	Once in a day (preferably morning)	15 days	Nil

Panchkarma procedures:

- ***Vatakaphaja:***
  - ***Lepa/Upnaaha:*** with *Nagaradi Churna* or *Kottamchukkadi Churna*
  - ***Abhyanga:*** *Laghuvisagarbha Taila, Mahavishagarbha Taila, Saindhavadi Taila, Karpasasthyadi Taila, Kottamchukkadi Taila*
  - *Ruksha Swedana* such as *Baluka Sweda; Churna pinda sweda with kolakulathadi churna, kotttamchukkadi churna*
  - *Nadi Sweda* with *Dashamula Kwatha*
  - *Jambeera pinda swedana*: by specially prepared *pottali* made with *Jambira* [Citrus limon (L)].
  - *Agnikarma*[46]: to relieve the stiffness and pain at the site having maximum tenderness
  - *Raktamokshana:* to relieve inflammation, pain and stiffness. *Jalaukavacharana* (leech therapy) is widely used procedure in the management of *Avabahukah*
- ***Kevala Vataja***
  - *Abhyanga*47: With *Prasarini Taila, Mahamasha Taila, Narayana Taila, Panchguna Taila, Bala Taila*
  - *Patra Pottali swedana*: to relief from pain, inflammation, swelling and stiffness.[53]
  - *Shastika Shali swedana*: relieves muscular stiffness and helps in relieving pain. [54]
  - Localised Basti with *Panchaguna Taila, Dhanwantaram Taila, Prasarini Taila, Ksheerabala Taila, Mahanarayana Taila, etc.*
  - Local *Pizhichil/ Dhara*: causes relaxation of muscles and tendons, improves the blood circulation, thereby providing relief in pain, tenderness, swelling, and stiffness.[55]
  - *Marsha Nasya* with *Anu Taila, Ksheerabala Taila* 101 avarthy
  - *Basti: Niruha* with *Dashamula Kashaya/ Erandamuladi Kashaya/ Balaguduchyadi Kashaya*; and *Anuvasana* with *Dhanvantaram Taila/ Ksheerbala Taila*

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.

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General guideline- Choice of drugs for Panchkarma procedures as per *Dosha Anubandha*/ Disease condition

Procedure/ Medicine	**Oil for *Abhyanga***	**Oil for *Matra basti***	**Oil for *Janubasti***	***Swedana***	***Upanaha***	***Vata Anulomana/ Mridu Virechana***	***Lepa***
Dosha Anubandha/ Disease condition							
Vataja	*Bala taila, Narayana taila, Dhanvantaram taila*	*Bala taila, Narayana taila, Dhanvantaram taila*	*Bala taila, Narayana taila, Dhanvantaram taila*	--	*Salvana, Kolakulatthadi churna*	*Eranda taila, Gandharvahastadi Taila*	*Kola kulatthadi , Rasnadi lepa*
Pittaja	*Shatadhouta ghrita, Chandanadi taila , Yastimadhu taila*	*Shatadhouta ghrita, Chandanadi taila , Yastimadhu taila*	*Shatadhouta ghrita, Chandanadi taila , Yastimadhu taila*	--	--	--	*Jadamayadi lepa/* *Dasanga Lepa*
Kaphaja	*Kottamchukkadi, Brihat saindhvadi taila*	*Kottamchukkadi, Brihat saindhvadi taila*	*Kottamchukkadi, Brihat saindhvadi taila*	--	--	*Triphala, Avipathikara churna*	*Kottamchukkadi lepa/ Nagaradi Lepa*
Vata Kaphaja	--	--	--	--	*Kottamchukkadi*	--	--
Shula pradhaana	--	--	--	*Patrapinda sweda, Jambira pinda sweda/Dashamula Sruta Ksheera Parishechanam*	--	--	--
Nirama avastha	--	--	--	*Shashtika shaali pinda sweda*	--	--	--