

# A Clinical Study Based on Ayurvedic Intervention in the Management of Ankylosing Spondylitis: A Case Report



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## Abstract

Ankylosing spondylitis (AS) is a chronic inflammatory disease primarily affecting the spine, characterized by inflammation of the sacroiliac joints and the spine's vertebrae. The exact cause of ankylosing spondylitis is not fully understood, but a strong genetic predisposition, particularly the presence of the HLA-B27 gene, is associated with an increased risk. Clinically, Ankylosing spondylitis is characterized by back pain and stiffness, especially in the morning or after periods of inactivity. This case report describes the clinical presentation, diagnostic evaluation, and management of a 42-year-old male patient presented with complain of Stiffness and Low back pain, cervical pain and bilateral Knee joint pain since, 1 year, associated with morning stiffness that lasted more than 1 hours, which improved with activity and radiographic evidence of sacroiliitis. This case was managed with panchakarma procedures along with *Shamana Chikitsa* given for the duration of 30 days. Before starting *Ayurveda* treatment BASDAI baseline score was 4.7 and after completion of treatment the score was reduced to 1.1.

**Keywords:** HLA-B27; Bamboo spine; *Prishtha Basti*; *Erandmooladi Niruh Basti*; BASDAI score

**Abbreviations:** AS: Ankylosing Spondylitis; HLA: Human Leukocyte Antigen; NSAIDs: Non-Steroidal Anti-Inflammatory Drugs; DMARDs: Disease Modifying Anti Rheumatic Drugs; ESR: Erythrocyte Sedimentation Rate; CRP: C-Reactive Protein; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index

## Introduction

Ankylosing Spondylitis is characterized by inflammatory back pain that is typically subacute in onset and starts before the age of 45 years. Ankylosing Spondylitis is an autoimmune disease that mainly involves spine joints, sacroiliac joints and their adjacent soft tissue, such as tendon and ligaments. Inflammation at these sites results in new bone formation leading to the typical AS features of bridging and fusion of joints and ankylosis of the spine. Radiographic changes characteristically affect the sacroiliac joints and may involve variable levels of the spine [1]. As the disease progressed resulting in fibrosis and calcification of bone patients have symptoms like loss of flexibility and fusion of spine there is a name given to this type of symptoms resembling called "Bamboo" i.e like an immobile position.

AS is a slowly progressive disease, and x-ray changes often do not appear until a decade after onset of symptoms [2]. In some people who have a clinical history consistent with AS but lack the characteristic x-ray changes, MRI can identify early inflammatory bony changes not seen on plain x-ray [3]. The prevalence of AS has a clear correlation with the human leukocyte antigen (HLA)-B27 positive rate in specific populations. Studies have revealed that in HLA-B27-positive populations, the prevalence rate of AS is ~5%-6% [4].

In contemporary medical science the disease is usually managed with Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), corticosteroids and various Disease Modifying Anti Rheumatic Drugs (DMARDs), but there are limited benefits and numerous

side effects associated with these drugs when given systemically for over a longer period of time. So, it is the need of the hour to look for a better mode of management for the disease in other medical sciences. Ankylosing Spondylosis in Ayurveda- The Ankylosing Spondylitis patients treated on the line of management of *Amavata* (Rheumatoid Arthritis) in initial stage and in later stage it is treated on the basis of *Asthimajja Gata Vata* (disorder of bone and bone marrow).

*Asthi-majja gata vata* of *Ayurveda* is similar with AS. *Asthi-majja gata vata* is characterized by vitiated *vata* affecting *Asthi* dhatu (bones). *Asthi-majja gata vata* is characterized by the signs and symptoms like, *Asthibheda* (pain in bones), *parva bheda* (pain in inter-phalangeal joints), *sandhi shoola* (joint pains), *mamsa kshaya* (atrophy of muscles), *bala kshaya* (loss of strength/weakness), *aswapna* (lack of sleep/disturbed sleep) and *satata ruk* (continuous pain). *Adhyasthi* (fusion/ankylosis/osteophyte formation) is the manifestation of *Asthi pradoshaja vikara* (diseases of bones) and *vinamata* (deformity such as kyphosis) is the manifestation of *Majjavrita vata*. *Snehana* (oleation), *swedana* (sudation) and *Panchakarma* procedures like enema with bitter ghee are indicated in bone pathology [5]. The present case was diagnosed and treated according to *Asthi-majja gata vata*.

### Case Presentation

In December 2023 a 42-year-old male patient presented with complain of Low back pain, cervical pain and bilateral Knee joint pain since, 1 year, associated with morning stiffness that lasted more than 1 hours, which improved with activity. Symptoms gradually intensified over the last 15 days. For these complaints initially he consulted an allopathic physician where he got temporary relief by NSAIDs and corticosteroids but the patient did not get satisfactory result and the complaints reoccurred after sometime. Then the patient switched towards *Ayurvedic* mode of management for further treatment.

**Past medical history:** included HLA-B27-positive, ankylosing spondylitis (diagnosed in October, 2023), hypertension, type 2 diabetes mellitus. Abdomen and Pelvis Ultrasound suggest Mild Hepatomegaly with fatty infiltration. No H/O any trauma, surgery or other severe illness.

**On Examination:** Pulse was 82/min and regular, BP - 122/84 mm of Hg, Respiratory rate - 18/min.

**Systemic Examination:** Physical examination revealed limited lumbar spine mobility and tenderness over the sacroiliac joints. Schober's test was positive(<5cm), indicating restricted forward flexion. The patient exhibited decreased chest expansion. Laboratory tests showed an elevated erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP). HLA-B27 testing was positive.

### Investigations

- i. MRI of Cervical Spine reveals Intervertebral Disc

degeneration and small posterior osteophytes disc complex at C2-3, C3-4, C4-5 and C5-6.

- ii. MRI of Lumbosacral Spine and Pelvic bone reveals Squaring of anterior vertebral body in lumbar and lower thoracic spine. Anterior longitudinal ligament ossification from D11 level downwards. Visible Lumbar and lower thoracic spine progresses to osseous fusion at D12-L1, L1-2, and L2-3 levels. No disc herniation or neural compression. It shows reparative fatty marrow changes of left>>right sacroiliac joint with cortical irregularity.

**HLA-B27 Test:** Positive

**Assesement criteria:** The scoring of 'Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) is adopted for assessment. To give equal weighting, the average of the two scores relating to morning stiffness is taken. The resulting 0 to 50 score is divided by 5 to give a final 0 to 10 BASDAI Score (Table 1).

**Table 1:** BASDAI Score.

|   |                               |
|---|-------------------------------|
| Fatigue/ tiredness                                    | 0 (none) to 10 ( Very severe) |
| Neck, back or hip pain                                | 0 (none) to 10 ( Very severe) |
| Pain / swelling in joints                             | 0 (none) to 10 ( Very severe) |
| Discomfort from any areas tender to touch or pressure | 0 (none) to 10 ( Very severe) |
| Morning stiffness severity                            | 0 (none) to 10 ( Very severe) |
| Morning Stiffness Duration                            | 0 (none) to 10 ( Very severe) |

The BASDAI or Bath Ankylosing Spondylitis Disease Activity Index is >4 suggest high disease activity.

### Management

*Prishta Basti* with *Murivenna Taila* and *Mahavishgarbh Taila* and *Erandmooladi Niruha Basti* and *Matra Basti* with *Dhanvantarm Taila* in *Karma Basti* manner along with *Shamana Chikitsa* were given for the duration of 30 days (Tables 2 & 3).

### Result

Before starting *Ayurveda* treatment BASDAI baseline score was 4.7 and after completion of treatment the score was reduced to 1.1 (Table 4).

### Discussion

The condition was approached with classical line of treatment of *Asthi Majjagat Vataas* the characteristics were clearly reflecting in the symptoms mentioned by the patient.

### Effect of Panchakarma Procedures

- i. *Prishta Basti:* *Prisht Basti* (process of retaining a specific amount of lukewarm medicated oil on a specific area) was prescribed because it is an external local oleation and sudation. Thus, locally at *Prisht Pradeshit* causes *Doshvilayan*, *Kledandue* to *taila* application and *Srotovishodhana*, *Swedpravartan* due

to its warm temperature [6]. *Murivenna's* ability to promote microcirculation due to its constituent composition may aid to reduce inflammation. When the qualities of each element in *Murivenna* were examined, it was found that the majority of them were predominantly *Tikta, Katuand Madhura Rasaas* well as *Kapha*

*Pitta Shamana*. Animal study demonstrated neovascularization, fibroblast proliferation, pepsin-soluble collagen synthesis, and collagen turnover in wounds [7]. *Mahavishgarbh Tailais* very beneficial in chronic Rheumatic diseases, swelling of joints, rheumatic pain [8].

**Table 2:** List of Panchkarma Procedures& Shaman Medicine.

| Panchakarma Procedures -  |        |           |                |
|---|--------|-----------|----------------|
| Pristh Bastiwith Murrivenam Taila and Mahavishgarbh Taila             |        |           |                |
| Karma Basti   |        |           |                |
| I. Erandmooladi Niruh Basti (on empty stomach)                        |        |           |                |
| a. Saindhava lavana (Rock salt) - 6 g                                 |        |           |                |
| b. Madhu (Honey) - 80 ml  |        |           |                |
| c. Tila taila(lipid medium) - 100 ml                                  |        |           |                |
| d. Satapushpa Kalka- 15 gm  |        |           |                |
| e. Erandamool Kwatha- 450 ml  |        |           |                |
| f. Gomutra Arka- 50 ml  |        |           |                |
| II. Matra Basti with Dhanvantar Taila (after having light meal) 60 ml |        |           |                |
| Shaman Medicine -   |        |           |                |
| Medicine  | Dose   | Frequency | Anupana        |
| Trayodashang Gugglu   | 250 mg | BD        | Lukewarm water |
| Rasnasaptak Kwath   | 30 ml  | BD        | Lukewarm water |
| Agnitundi Vati  | 250 mg | BD        | Lukewarm water |
| Chandraprabha Vati  | 250 mg | BD        | Lukewarm water |

**Table 3:** Karma Basti Plan.

|                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| 1 <sup>st</sup> Day  | 2 <sup>nd</sup> Day  | 3 <sup>rd</sup> Day  | 4 <sup>th</sup> Day  | 5 <sup>th</sup> Day  | 6 <sup>th</sup> Day  | 7 <sup>th</sup> Day  | 8 <sup>th</sup> Day  | 9 <sup>th</sup> Day  | 10 <sup>th</sup> Day | 11 <sup>th</sup> Day | 12 <sup>th</sup> Day | 13 <sup>th</sup> Day | 14 <sup>th</sup> Day | 15 <sup>th</sup> Day |
| A                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    |
| 16 <sup>th</sup> Day | 17 <sup>th</sup> Day | 18 <sup>th</sup> Day | 19 <sup>th</sup> Day | 20 <sup>th</sup> Day | 21 <sup>st</sup> Day | 22 <sup>nd</sup> Day | 23 <sup>rd</sup> Day | 24 <sup>th</sup> Day | 25 <sup>th</sup> Day | 26 <sup>th</sup> Day | 27 <sup>th</sup> Day | 28 <sup>th</sup> Day | 29 <sup>th</sup> Day | 30 <sup>th</sup> Day |
| A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | N                    | A                    | A                    | A                    | A                    | A                    |

**Table 4:** BASDAI Score Before and After Treatment.

| Symptoms  | Before Treatment    | After Treatment  |
|---|---------------------|------------------|
| Fatigue/ tiredness                                    | 5                   | 1                |
| Neck , back or hip pain                               | 5                   | 2                |
| Pain / swelling in joints                             | 4                   | 0                |
| Discomfort from any areas tender to touch or pressure | 4                   | 1                |
| Morning stiffness severity                            | 5                   | 2                |
| Morning Stiffness Duration                            | 1 hour & 15 Minutes | Up to 15 Minutes |
| BASDAI Score [5]                                      | 4.7                 | 1.1              |

ii. *Karma Basti: Erandmooladi Niruha Basti* is Deepana and Lekhana in nature which helps in pacifying *Kapha* and reduces symptoms like heaviness and stiffness. *Eranda* (*Ricinus communis* Linn.) which is the main content of *Erandmooladi Niruha Basti* possess anti-inflammatory, antioxidant, analgesic and bone regeneration properties. This Basti contains 34 drugs in which most of the drugs are having *Ushna Veerya* and are *Vatakaphahara*

in nature. Drugs are also possessing *Ushna, Teekshna* and *SukshmaGuna* which helps in the elimination of obstruction of *Srotas* which further helps in the formation of *Prakrita Dhatu*. It is also indicated in *Kaphavrita* condition, by which it played major role in pacifying the *Kapha Dosha* and reducing the symptoms like *Stambha* and *Gaurava*. Most of the drugs are *Agni Deepaka* which helped to improve the *Agni* of the patient, thereby increase

in appetite was observed [9]. As patient was given Matra Basti of *Dhanvantara Taila* which is going to act as a *Vatakaphahara*, helping in *Vatanulomana*. It is said to be *Sarvavatvikarhara* and *Bruhana* in action [10].

### Individual effect of Shaman drugs

i. *Tryodashang Gugglu: Trayodashang guggulu* act with its properties of *Vedanastapana*, *Shoolhara* and *Rasayana*, *Madhur Vipaka*, *Ushna Virya*. By the *Ushna Virya, Snigdha guna* of *Madhur Vipaka* it suppresses the symptoms of *Stambha*, *Toda* and reduces pain which is mentioned in *Bhavprakash Samhita*. *Triyodashanga Guggulu* is useful in *Snayugatavata*, *Asthigatavata*, *Majjagatavata*, *Khanjavata*, and various *Vata* disorders [11].

ii. *Rasnasaptak kwath: Rasna Saptak Kwath* is a formulation, which contains eight medicinal plants viz. *Pluchea lanceolata*, *Tribulus terrestris*, *Tinospora cardifolia*, *Boerrihia diffusa*, *Ricinus communis*, *Cedrus deodara*, *Cassia fistula* and *Zingiber officinalis*. These herbs have the potential to treat symptoms like inflammation and pain other than that it also treats arthritis at immune and free radical level. These herbs are known for their immunosuppressive action (e.g. *Pluchea lanceolata*), anti-inflammatory action (e.g. *Tribulus terrestris*), analgesic action (ex. *Ricinus communis*), and antioxidant (e.g. *Tinospora cardifolia*) [12].

iii. *Agnitundi vati: All contents of Agnitundi Vatiare Deepan, Pachan, Vata Shamakand Shulaghna* in properties due to its *Ushna veerya* it normalizes the function of *Apana* and *Vyana vayu* [13].

iv. *Chandraprabha vati: Chandraprabha Vati* is *Rasayana, Balya, Tridosha Shamaka* properties and also acts as catalyst [14].

### Conclusion

This study demonstrates how Ankylosing Spondylitis can be treated using *Ayurvedic medicine*. The *Shaman* medications act on the vitiated *Aam* and *Vata*, while the *Panchakarma* treatments ease stiffness and discomfort by stimulating blood circulation and balancing *Mraduta*. Even though there is no known treatment for ankylosing spondylitis, *Ayurveda* can effectively control the disease's symptoms and progression, preventing harmful drug interactions and eventually improving the patient's quality of life.

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