



Case Study

IMPROVEMENT IN QUALITY OF LIFE (QOL) THROUGH AYURVEDIC MANAGEMENT OF ANKYLOSING SPONDYLITIS (AS)

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ABSTRACT

Ankylosing spondylitis (AS) is a chronic, rheumatic, progressive inflammatory, polygenic disorder with involvement of HLA-B27 genetic marker, primarily affecting the sacroiliac joints and the axial skeleton. The main clinical features are back pain and progressive stiffness of the spine. **Case:** A 34 years old male patient, presented in the OPD of IPGAE&R at SVSP, Kolkata, with the complaints of chronic low back pain for last 2 years along with morning neck stiffness for the same period. He was already diagnosed with HLA-B27 positive. Initially he was taking allopathic treatment for AS for 2 years but neither he got any relief with the treatment nor his quality of life improved following the treatment as he added during the history taking. In Ayurveda, the patient was started with *Saman Chikitsa* along with *Sodhan Chikitsa*. **Aim and objective:** To evaluate the efficacy of *Dashmooladi Niruha Basti*, along with *Samana Chikitsa*, in the management of *Katigraha* and *Katisula*. **Result:** Patient got marked relief in pain, stiffness and tingling sensation along with improvement in quality of life like ease in walking and sitting. **Conclusion:** The parameters were analyzed before treatment like ASDAS scoring, (CRP- 5.019 and ESR- 4.78) and after treatment ASDAS scoring (CRP- 2.44 ESR- 2.13). *Basti* along with *Saman Chikitsa* were highly effective in reducing the symptoms and signs of ankylosing spondylosis. A change of 2.0 units has been considered as significant and indicates major improvement.

INTRODUCTION

Ankylosing spondylitis (AS) is a chronic, inflammatory disease primarily affecting the axial spine that can manifest with a range of clinical signs and symptoms. The hallmark features of the condition include chronic back pain and progressive spinal stiffness. AS is characterized by the involvement of the spine, sacroiliac (SI) joints and peripheral joints, digits and entheses. AS often leads to impaired spinal mobility and can result in postural abnormalities. Patients can also experience buttock pain and hip pain.

Peripheral arthritis, enthesitis and dactylitis ("sausage digits") are associated with AS. In addition to skeletal involvement AS can affect various organs outside the joints. These extra-articular manifestations of AS include inflammatory bowel disease (affecting up to 50% of individuals), acute anterior uveitis (seen in 25%-35% of cases) and psoriasis (approximately 10% occurrence). AS is additionally linked to an increased risk of cardiovascular disease which is believed to stem from the systemic inflammation present in individuals with AS. Pulmonary complications are also associated with AS; as diminished chest wall expansion and limited spinal mobility can predispose individuals to a restrictive pulmonary pattern. [1,2,3]

Etiology

The cause of ankylosing spondylitis remains largely unknown. However, there appears to be a correlation between the prevalence of AS and the presence of human leukocyte antigen HLA-B27 in a given population. Among individuals who are HLA-B27

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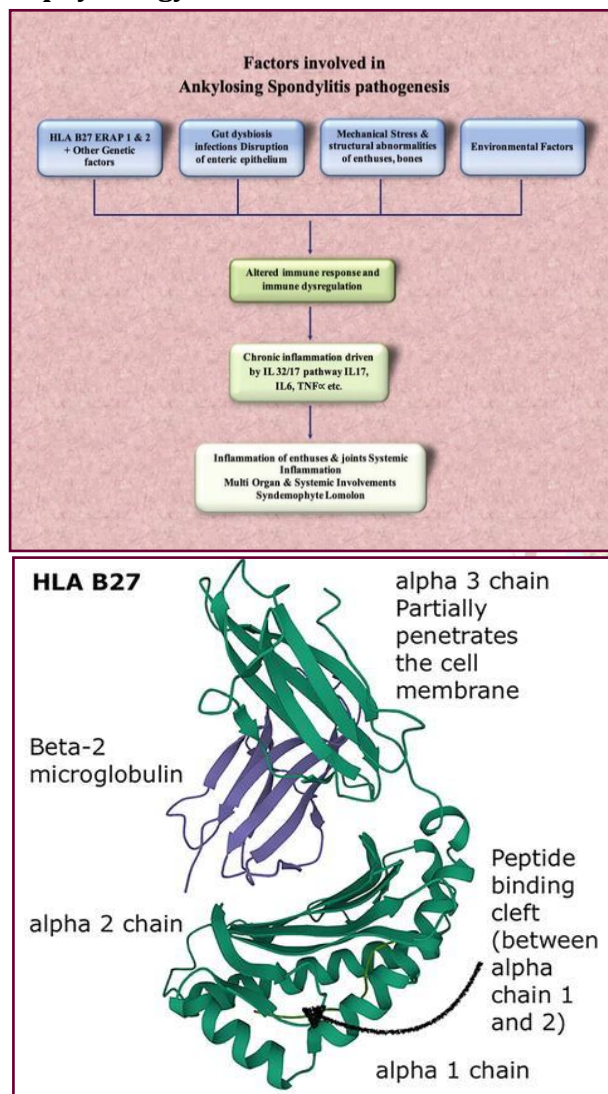
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positive, the prevalence of AS is approximately 5% to 6%. A 2009 survey reported rates of HLA-B27 prevalence as 7.5% among non-Hispanic Whites, 4.6% among Mexican-Americans, and 1.1% among non-Hispanic Blacks.^[4,5]

Epidemiology

Ankylosing spondylitis commonly presents in individual younger than 40 years with approximately 80% of patients experiencing their first symptoms before the age of 30 and more prevalent in men than in women.^[6]

Pathophysiology



Scoring in Ankylosis Spondylitis (ASDAS)^[8,9,10,11,12]

The Ankylosing Spondylitis Disease Activity Score (ASDAS) is a score used to measure the activity of ankylosing spondylitis (AS). The ASDAS score is calculated using a combination of patient-reported symptoms and acute-phase reactants. The score ranges from 0 to infinity, with higher scores indicating higher disease activity.

The ASDAS score is used to categorize disease activity into four states:

Disease category	Score
Inactive disease	< 1.3
Moderate disease activity	1.3–2
High disease activity	2.1–3.5
Very high disease activity	> 3.5

The ASDAS score is calculated using the following factors

Disease symptoms/factors	Score (VAS/NRS)
Back pain	0 to 10
Patient global assessment	0 to 10
Duration of morning stiffness	0 to 10
Peripheral pain/swelling	0 to 10
Sero-negative marker of inflammation	PCR/ESR

*VAS: Visual Analog Scale, *NRS: Numerical Rating Scale

A change of at least 1.1 units in the ASDAS score indicates clinically important improvement, and a change of 2.0 units indicates major improvement.

The Ankylosing Spondylitis Disease Activity Score (ASDAS) is an index to assess disease activity in Ankylosing Spondylitis (AS). The 3 cut-offs selected to separate these states were:

- <1.3 between "inactive disease" and "moderate disease activity",
- <2.1 between "moderate disease activity" and "high disease activity",
- >3.5 between "high disease activity" and "very high disease activity".^[7-11]

The exact signs and symptoms of ankylosing spondylitis do not resemble with any disease mentioned in Ayurvedic texts but based on clinical presentation it can be consistent with *Pravruddh Aamvata*.^[12] Lumbar spondylosis (*Katigraha*)^[13,14] is common with ageing and considered to be a pain in the lower back with stiffness. Low back pain secondary to degenerative diseases. It is an important clinical, social, and public health problem; about 60% to 70% of the population in India suffers from this condition. In some cases, degenerative changes in the lower back due to lumbar spondylosis leads to compression of the spinal nerve resulting in lower back pain with stiffness, which radiates to the lower limb. In Ayurveda classics, lower back pain, *Katigraha*, is explained in a broad aspect under *Vata Vyadhi*. *Katigraha* is primarily caused by vitiation of *Vata Dosha* and *Mamsa, Asthi* and *Majja Dhatu Kshaya*. Acharya Sushruta described, when vitiated *Vata Dosha* invades the *Asthi Dhatu*, symptoms like *Asthi Shosha* and *Asthi Shool* are produced.

Acharya Charaka has described *Katigraha* as one amongst the 80 *Vata Nanatamaja Vikara*. It is managed conservatively by the administration of *Abhyanga*, *Swedana*, *Basti*, etc., mentioned in Ayurveda classics ➤ were selected for the case, so this case report is planned to evaluate the collective effect of *Samana Chikitsa* for *Vata Vyadhi*.^[13,14] ➤

MATERIALS AND METHODS

The assistance and support was taken from the library, Panchakarma Department for the treatment along with Indoor Department and Medicinal store room of Institute of Post Graduate Ayurvedic Education & Research at SVSP, Kolkata.

CASE HISTORY

A 34 years male patient named Malay Sankar Bhunia came to the OPD of Institute of Post Graduate Ayurvedic Education and Research on 10/06/24.

Chief complaint with duration

Pain around lumbar region since 2 years along with pain and stiffness around neck region. He Also complained of pain and stiffness around lower back since 2 years along with difficulty in forward bending since 1 year.

On Examination

Systemic

- Appetite- Normal
- Bowel- Loose mucoid stool
- Bladder- Normal
- Sleep- Disturbed and inadequate

Prakriti

- Vata- +++
- Pitta- ++
- Kapha- +

Vata Pradhan tridoshaja Parkriti

Vikriti

- Vata- +++
- Pitta- ++
- Kapha- +++

On Report 23/07/24

X-Ray LS Spine

Impression

- Mild loss of lumbar lordosis.
- Visualized bones are osteopenic.
- Small anterior marginal osteophytes.

X-Ray Dorso-Spine

Impression

- Marginal osteophytes.

On Report 25/08/24

MRI Sacro- Iliac joints

Impression

Mild sclerosis is noted on bilateral sacro-iliac joints.

Blood for HLAB2

Finding: Positive

Management: (OPD basis)

Initially, the patient was given *Saman Chikitsa* for 2 weeks on OPD basis.

Then he was admitted in the IPD of IPGAE&R at Shyamdas Vaidya Shastra Pith for *Sodhan Chikitsa* along with *Saman Chikitsa*.

On 10/06/24 he attended OPD in IPGAE&R at Shyamadas Vaidya Shastra Pith and initially treated by *Saman chikitsa* at OPD basis with the following treatment schedule for 14 days.

- 1) *Tab Vata gajankush Rasa*- 2 tab BDAC
- 2) *Pow. Aswagandha*- 3gm
+ *Pow. Chopchini*- 1gm
+ *Pow. Guduchi* - 2gm } 1 dose BDAC
- 3) *Tab Trayodasnaga Guggulu* (500mg)- 2 tab twice daily after meal (after soaking in water).
- 4) *Tab Lakshadi guggulu*- 1 tab twice daily after breakfast and at evening.
- 5) *Pow. Bilwadi churna*- (6gm)- 1 dose at night with lukewarm water.

He was advised following investigations on next follow up visit

X-Ray for-

- LS Spine
 - CS Spine
 - Dorso- Spine
- } AP & Lateral

Blood for- CBC, CRP, RA Factor, HLA-B27, FBS and PPBS.

After 14 days on follow up visit (24/06/2024) he was admitted in the IPD of IPGAE&R.

The Reports were as followed (20/06/2024)

- X -Ray of CS-Spine- AP and lateral view showed: Cervical lordosis is reduced.
- X-Ray Dorsal Spine- AP and lateral view showed: Curvature reduced along with bamboo spine appearance.
Impression: Ankylosing spondylitis
- X-Ray lumbo-sacral: Curvature reduced
Impression: Bamboo Spine
Bilateral sacro- ILIAC joints are sclerotic, ankylosing spondylitis. Then after attending the patient in IPD the following signs and symptoms were noted.

S.No.	SYMPTOMS	SIGNS
1.	Pain and stiffness around cervical region since 2 years.	CRP- 39.0mg/dl ESR- 56mm in 1 hr FBS-89.2, PPBS-112.4, Hb- 11.7, Lipid Profile- WNL.
2.	Pain and stiffness around lower back since 2 years.	Blood for HLA-B27- Positive
3.	Problem in forward bending.	X-Ray LS- Spine- Bamboo spine, ankylosing spondylitis.
4.	Restricted cervical rotation.	X-Ray CS- Spine- AP & Lat-Cervical lordosis is reduced.
5.	Stiffness and pain around shoulder regions.	X-Ray Dorsal Spine- Curvature reduced, Bamboo spine, ankylosing spondylitis.

On Examination (O/E) of the patient

- ✓ No history of hypertension
- ✓ T2DM, hypothyroidism noted
- ✓ No past medical and surgical history

Personal history

- i) Appetite- Normal
- ii) Bowel- Loose mucoid stool
- iii) Bladder/micturation- Normal
- iv) Sleep- Normal
- v) Addiction: Nil

Management (IPD basis)

The following treatment plan was prescribed after admission from 24/06/2024 to 30/06/2024.

Deepan and *Pachan* was done for 7 days along with *Nitya virechan*.

1. *Panchakola churna* – 6gm, 1 dose twice daily before meals.
2. *Trivitt avaleha*- 1 tsf daily at night before bed time.

Then from 01/7/2024 this plan was followed

1. Syrup. *Amritatharam Kasayam*- 15ml twice a day before meal
2. *Snehapan: Guggulu Tikta Ghritam*- 20ml in empty stomach started from 02/7/2024 with following dose scheduled on successive dates as per accessing *Agnibala* and appetite.

Date	2/7/2024	3/7/2024	4/7/2024	5/7/2024	6/7/2024	7/7/2024	8/7/2024
Dosage	20 ml	25ml	30ml	40ml	60ml	80ml	100 ml

On 9th day i.e., on 09/07/2024: *Sarvang Sweda* was done and on 10/07/2024.

For *Virechan* with *Nimba amritadi eranda taila*- 25ml at early morning and finally. the *Basti* was planned:

3. Planned *Basti*: *Kala Basti* was given:

11/07/2024	12/07/2024	13/07/2024	14/07/2024	15/06/2024	16/07/2024
<i>Anuvasana basti</i>	<i>Niruha basti</i>	<i>Anuvasana basti</i>	<i>Anuvasana basti</i>	<i>Niruha basti</i>	<i>Anuvasana basti</i>
17/07/2024	18/07/2024	19/07/24	20/07/2024	21/07/24	22/07/2024
<i>Anuvasana basti</i>	<i>Niruha basti</i>	<i>Anuvasana basti</i>	<i>Niruha basti</i>	<i>Anuvasana basti</i>	<i>Anuvasana basti</i>
23/07/2024	24/07/2024	25/07/2024	26/07/2024		
<i>Niruha basti</i>	<i>Anuvasana basti</i>	<i>Niruha basti</i>	<i>Anuvasana basti</i>		

Composition of Basti

Anuvasan Basti

- *Madhuyastyadi taila*: 60ml

Niruha Basti

- i) *Makshikam*: 100ml

- ii) *Lavanam*- 15 gm (*Saindhava*)
 iii) *Snehanam*
 a) 50ml with *Pancha tikta Ghrita*
 b) 50 ml with *Kshirabala taila*
 iv) *Satavaha kalka*: 15 gm
 v) *Kasaya*: 400ml
 a) *Guduchi*- 50%
 b) *Dasamoola* - 25%
 c) *Madanphala*- 25%

Sarvanga abhyangam with *Sahacharadi taila*.

Nadi Swedan in *Griva* region, *Kati* region, *Pristha* region with *Dasamoola yavakuta kwatha*.

RESULTS and OBSERVATIONS

Scoring: Before treatment

S.No.	Symptoms	Intensity
01.	Morning stiffness duration	25mins. 6 on a scale of 10 (VAS)
02.	Neck rotation	Not more than 40°
03.	Peripheral pain	10 on a scale of 10 (VAS)
04.	Back pain	8 on a scale of 10 (VAS)
05.	Body posture (Patient Global Assessment)	i) Stooped forward ii) Decreased lumbar lordosis. iii) Restricted motion in spine. } 6 on a scale of 10. (VAS)
06.	Muscle stiffness	7 on a scale of 10. (VAS).
07.	CRP	39.0mg/dl.
08.	ESR	56 mm in 1 hr.

ASDAS Calculation

CRP

$0.12 \times \text{Back pain} + 0.06 \times \text{duration of morning stiffness} + 0.11 \times \text{Patient global} + 0.09 \times \text{peripheral pain} + 0.58 \times \ln(\text{CRP} + 1)$
 $= 0.12 \times 8 + 0.06 \times 6 + 0.11 \times 6 + 0.09 \times 10 + 0.58 \times \ln(39+1) = 0.96 + 0.36 + 0.66 + 0.9 + 2.139 = 5.019$

ESR

$0.08 \times \text{Back pain} + 0.07 \times \text{Duration of morning stiffness} + 0.11 \times \text{Patient global} + 0.09 \times \text{Peripheral pain/swelling} + 0.29 \times \sqrt{\text{ESR}}$
 $= 0.08 \times 8 + 0.07 \times 6 + 0.11 \times 6 + 0.09 \times 10 + 0.29 \times \sqrt{56} = 0.64 + 0.42 + 0.66 + 0.9 + 2.16 = 4.78$

Scoring-After treatment

S.No.	Symptoms	Intensity
01.	Morning stiffness duration	7 mins. 3 on a scale of 10 (VAS)
02.	Neck rotation	Not more than 40°
03.	Peripheral pain	4 on a scale of 10 (VAS)
04.	Back pain	4 on a scale of 10 (VAS)
05.	Body posture (Patient Global Assessment)	i) Stooped forward ii) Decreased lumbar lordosis. iii) Restricted motion in spine } 3 on a scale of 10 (VAS)
06.	Muscle stiffness	5 on a scale of 10 (VAS)
07.	CRP	5.6mg/dl
08.	ESR	10 mm in 1 hr

ASDAS Calculation**CRP**

$0.12 \times \text{Back pain} + 0.06 \times \text{duration of morning stiffness} + 0.11 \times \text{Patient global} + 0.09 \times \text{peripheral pain/swelling} + 0.58 \times \ln(\text{CRP} + 1) = 0.12 \times 4 + 0.06 \times 3 + 0.11 \times 3 + 0.09 \times 4 + 0.58 \times \ln(5.6 + 1) = 0.48 + 0.18 + 0.33 + 0.36 + 1.09 = 2.44$

ESR

$0.08 \times \text{Back Pain} + 0.07 \times \text{Duration of morning stiffness} + 0.11 \times \text{Patient global} + 0.09 \times \text{peripheral pain/swelling} + 0.29 \times \sqrt{\text{ESR}} = 0.08 \times 4 + 0.07 \times 3 + 0.11 \times 3 + 0.09 \times 4 + 0.29 \times 3.16 = 0.32 + 0.21 + 0.33 + 0.36 + 0.916 = 2.13$

Symptoms	Before treatment	After treatment
Morning Stiffness duration	25mins, 6 on a scale of 10 (VAS).	7 mins. 3 on a scale of 10 (VAS)
Neck Rotation	Not more than 40°	Not more than 40°
Peripheral pain	10 on a scale of 10 (VAS).	4 on a scale of 10 (VAS)
Back pain	8 on a scale of 10 (VAS).	4 on a scale of 10 (VAS)
Body posture (Patient Global Assessment)	i) Stooped forward ii) Decreased lumbar lordosis. iii) Restricted motion in spine.	i) Stooped forward ii) Decreased lumbar lordosis. iii) Restricted motion in spine.
Muscle Stiffness	7 on a scale of 10. (VAS)	5 on a scale of 10. (VAS)
CRP	39.0 mg/dl.	5.6 mg/dl
ESR	56 mm in 1 hr	10 mm in 1 hr
CRP (ASADS Scoring)	5.019	2.44
ESR (ASADS Scoring)	4.78	2.13

DISCUSSION

Ayurveda is the science that came into existence since ancient era. Ayurvedic classical formulations and single herbs have been tested for thousands of years on people and now toxicity tests in labs on mice and rat have proof on safety of it. Ayurveda believes in protecting the health of the healthy person and treating the diseased person.

This case study establishes that Ayurveda has ability to treat Auto-immune disorders like A.S., which is having progressive and protracted course. After the treatment, the progress of disease was not only arrested but pathology of the disease was also reversed. This case is being followed up regularly and patient is completely normal with ease in mobility without support.

CONCLUSION

A change of at least 1.1 units in the ASDAS score indicates clinically important improvement, while a change of at least 2.0 units indicates major improvement. Here, we can see CRP (ASADS Scoring) which was initially 5.019, after treatment it is reduced to 2.44, claiming a reduction in 2.579 units. Also, ESR (ASADS Scoring) which was initially 4.78 reduced to 2.13 after treatment, claiming a reduction in 2.65 units. This case study and treatment plan highlighted the *Saman* and *Sodhan chikitsa* in ankylosing spondylosis

yielding good results in treatment and improvement in quality of life (QoL) in auto-immune diseases like A.S. with no side effects.

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Authors Contributions

The corresponding author is responsible for the concept, extensive literature review and critical analysis of the data. The second and third authors have provided data from their extensive literature research and journal review. All the necessary reviews of the final version of article have been carried out by all the authors before the submission of this article.

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