

# Ayurvedic management of ankylosing spondylitis—a case report

## Abstract

Ankylosing spondylitis (AS) is a chronic, systemic, inflammatory disease which affects primarily sacro–iliac joints and spine. AS is a gradually progressive condition over several years until structural damage manifests clinically as sacroiliitis, loss of spinal mobility, extra–articular symptoms, peripheral arthritis and reduced quality of life. Various *panchakama* procedures and internal *Ayurvedic* medicines have been proved beneficial in the management of AS. The present report deals with a case of ‘Ankylosing spondylitis’ with ‘Beta thalassemia’ came to our care for *Ayurvedic* treatment. Patient was diagnosed as having ‘*Asthi–majja gata vata*’ according to *Ayurveda* and treated with various *panchakarma* procedures and internal medicines for 6 months. A criterion of assessment was based on the scoring of ‘Bath Ankylosing Spondylitis Disease Activity Index (BASDAI)’. Total two assessments were carried out before and after 6 months of treatment. Patient has showed good improvement on BASDAI (80% relief). Improvement was found in signs and symptoms like, fatigue/tiredness, neck/back/hip pain, tenderness and intensity as well as duration of morning stiffness. *Ayurvedic* treatment seems to be promising in the management of AS without causing any adverse effects.

**Keywords:** ankylosing spondylitis, *asthi–majja gata vata*, *panchakarma*, *Ayurveda*, bath ankylosing spondylitis disease activity index, basdai

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## Introduction

Ankylosing spondylitis (AS) is a chronic, systemic, inflammatory disease which affects primarily sacro–iliac joints and spine. It is classified along with the seronegative spondyloarthritic diseases. It typically affects young adults and male–to–female ratio is closer to 3:1. The median age of onset is 23 years.<sup>1</sup> AS is a complex, unpredictable disease which has puzzled as well as frustrated clinicians and scientist alike for centuries. Worldwide prevalence of AS is up to 0.9%. Its etiology and pathogenesis are not yet fully understood. AS is a gradually progressive condition over several years until structural damage manifests clinically as sacroiliitis, loss of spinal mobility, extra–articular symptoms, peripheral arthritis and reduced quality of life. Patients with severe AS have a reduced quality of life, loss of productivity due to work disability and sick leave.<sup>2</sup>

Non–steroidal anti–inflammatory drugs (NSAID), corticosteroids and various disease modifying antirheumatic drugs (DMARDs) are used to treat/manage AS. However, these treatments are of limited benefit. Corticosteroids are associated with numerous side effects, especially when given systemically over long periods of time. No effective disease modifying treatment has been established for AS.<sup>2</sup> Patients with chronic rheumatic diseases are frequent users of alternative and complementary medicine. More than 50% of patients with Ankylosing spondylitis had experience with such treatments.<sup>3</sup> Various *panchakama* procedures and internal *Ayurvedic* medicines have been proved beneficial in the management of AS.<sup>4</sup> Previously published case reports has correlated AS with ‘*Asthi–majja gata vata*’, ‘*Amavata*’ according to *Ayurveda* and managed AS successfully with various *panchakarma* procedures and internal *Ayurvedic* medicines.<sup>4,5</sup> Here we are reporting a case of AS with ‘Beta thalassemia’ diagnosed as ‘*Asthi–majja gata vata*’ according to *Ayurveda*. Written informed

consent was obtained from the patient for the publication of this case report.

## Case description

A 31 year old male patient came to our care (11.07.2016) with the complaints of low back ache (which is dull in character and felt deep in the lower lumbar region), neck pain with deformity (stooping forward of neck) accompanied by early morning stiffness. The pain was insidious in onset which aggravates during night, early mornings and after exposure to cold or in cold seasons. Morning stiffness lasts for few hours and gradually improves with activity. The pain became persistent, bilateral and gradually progressive since last 6 years (2011). Patient was diagnosed as having ‘Ankylosing spondylitis’ along with ‘Beta Thalassemia’ and has been receiving treatment for the same. Patient has been taking ‘Non–steroidal anti–inflammatory drugs’ (NSAID), corticosteroids and various ‘Disease modifying anti–rheumatic drugs’ (DMARDs) for AS. Patient didn’t get satisfactory and sustained relief with these medicines and came for *Ayurvedic* treatment. Patient has also complained of knee joint pain (bilateral), sleep disturbances due to severe pain, functional disability, dependency and loss of income (due to sick leave). All these factors affected the patient’s general well being.

Physical findings such as loss of spinal mobility, with restriction of flexion and extension of the lumbar spine and neck were found. Restriction in expansion of the chest was also found. Pain in the sacro–iliac joints was elicited with directed pressure. Patient’s posture undergone characteristic changes such as, exaggeration of thoracic kyphosis, stooping forward of neck and loss of lumbar lordosis were present (Figure 1 & 2). Neck pain and stiffness were noticed which indicates of advanced disease. Bony tenderness accompanies back pain or stiffness. There were no extra articular manifestations in present case.



**Figure 1** Kyphosis – Posterior view.



**Figure 2** Kyphosis – Lateral view.

In present case, HLA-B27 was positive with increased levels of C reactive protein (CRP) and a raised Erythrocyte sedimentation rate (ESR). Radiographic sacroiliitis was also detected. Peripheral smear has revealed ‘Microcytic hypochromic anemia’ with ‘Beta

thalassemia’. All other hematological, biochemical investigations, renal function tests, thyroid profile and urine (routine & microscopic) examination reports were normal (Table 1).

**Table 1** Investigation reports.

Date	Name of Investigation	Report
16.11.2006	Hematological investigation – Peripheral smear	Microcytosis with Hypochromia. Target cells seen. Beta Thalassemia trait (or similar heterozygous carrier state of abnormal Hemoglobin).
04.06.2009	C- Reactive protein	54
	TSH (Thyroid Stimulating Hormone)	1.29 micro U / ml
28.01.2011	HLA-B27	Positive
04.07.2011	X-Ray of dorso-lumbar spine (AP & Lateral view)	Partial wedging of L4 vertebral body; early marginal spur on antero-superior margin of L3 with adjacent end plate sclerosis;
	X-Ray pelvis for sacro-iliac joints (AP & Prone view)	Mild narrowing of joint space of sacro-iliac joints on both sides; Changes suggestive of ‘Grade 2 – Sacroiliitis’
	Hemoglobin	10.4gm/dl
	CRP	58.1mg/liter
	ESR	18mm/hr
27.01.2015	RA (Rheumatoid Arthritis) factor	Negative
	Serum creatinine	1.1mg/dl
	Uric acid	4.5mg/dl
	Random blood sugar	82mg/dl
	Urine routine & microscopic	Normal report

### Diagnosis, assessment & treatment

The most common classification system for the diagnosis of AS is the ‘Modified New York criteria’.<sup>6</sup> Plain films of the sacro-iliac joints are the standard initial test for diagnosis of AS. Sacroiliitis is the cardinal feature and is essential for diagnosis of AS based on the 1984 modified New York criteria.<sup>6</sup> Sacroiliitis identified by plain X rays of the sacroiliac joints is still the gold standard for diagnosis. The findings are classically symmetric and radiographically graded as 1 through 4 (suspicious, minimal, moderate, ankylosis). Even though, HLA B 27 gene is not a diagnostic test for AS it may be useful in determining the need for further evaluation. Erythrocyte sedimentation rate (ESR) and C – reactive protein (CRP) like acute phase reactants may be variably elevated in AS.<sup>1</sup> In present case the diagnosis of AS has been made based on the combination of suggestive symptoms, physical examination findings, and imaging.

A criterion of assessment in present case was based on the scoring of ‘Bath Ankylosing Spondylitis Disease Activity Index (BASDAI)’.<sup>7</sup> The BASDAI has been the most frequently used measure for AS and has become the gold standard measure for use in clinical trials. The purpose of BASDAI is to measure patient-reported disease activity in patients with AS. It consists of 6 items which measures patient-reported levels of back pain, fatigue, peripheral joint pain and swelling, localized tenderness and the duration & severity of morning stiffness. Numeric response scale (0–10) anchored by adjectival descriptors ‘none’ and ‘very severe’. The final score of BASDAI ranges from ‘0’ (which indicates no disease activity) to ‘10’ (which indicates maximum disease activity). A cut off score of 4 is used to define active disease.<sup>8</sup> Total two assessments were taken, pre treatment (baseline) and post treatment (after 6 months completion of treatment). The patients was diagnosed as having ‘Asthi-majja gata vata’ according to *Ayurveda* and treated with various *panchakarma* procedures

like *udwartana* (powder massage), *patra pottali pinda sweda* (medicated bolus massage), *jambeera pinda sweda* (massage with medicated bolus containing citrus fruit), various internal

medicines and physiotherapy (Table 2). The purpose of treatment was to alleviate symptoms, to reduce disability and to improve quality of life.

**Table 2** Intervention.

Duration	Medicine	Dose	Frequency	Anupaana
11.07.2016 to 01.08.2016	1. <i>Dashamoolarishta</i>	20ml	Twice a day, after food	With equal quantity of water
	2. <i>Chitrakadi vati</i>	1gm	Twice a day, after food	with ginger juice
02.08.2016 to 13.08.2016	1. <i>anchakolasava</i>	20ml	Twice a day, after food	with water
	2. <i>Lashuna erandadi kashaya</i>	80ml	Twice a day, before food	
14.08.2016 to 11.12.2016	1. <i>Ashtavarga kashaya</i>	80ml	Twice a day, before food	
	2. <i>Panchatikta ghrita</i>	10ml	Twice a day, after food	with hot water
12.12.2016 to 26.12.2016	1. <i>Panchakolasava</i>	20ml	Twice a day, after food	with water
	2. <i>Prasaaranyadi kashaya</i>	80ml	Twice a day, before food	
	3. <i>Guggulu panchapala choornam</i>	5gm	Twice a day, after food	with water
27.12.2016 to 10.01.2017	1. <i>Panchatikta ghrita</i>	10ml	Twice a day, after food	with hot water
	2. <i>Prasaaranyadi kashaya</i>	80ml	Twice a day, before food	
	3. <i>Guggulu panchapala choornam</i>	5gm	Twice a day, after food	with water
<b>Panchakarma Intervention</b>				
02.08.2016 to 07.08.2016	<i>Patra pottali pinda sweda</i> with <i>Karpooradi tailam</i>			
08.08.2016 to 13.08.2016 & 12.12.2016 to 18.12.2016	<i>Udwartana</i> with <i>Kola kuluthadi choornam</i>			
19.12.2016 to 26.12.2016	<i>Jambeera pinda sweda</i> with <i>Karpooradi tailam</i>			

## Discussion

AS belongs to the group of spondyloarthropathies (SpAs) and it is one of the common rheumatic diseases. Sacroiliitis is the earliest recognized manifestations of AS, but peripheral joints and extra-articular structures may also be affected. It is insidious in onset, striking individuals, mostly men at an early age, subsequently progresses over several years and leads to deformity. The most serious complication encountered in AS is spinal fracture. Even minor trauma to the rigid, fragile spinal column can cause severe damage. The cervical spine is the most susceptible site; fractures at this site can result in quadriplegia. Management/treatment for AS are often unsatisfactory.<sup>2</sup>

According to *Ayurvedic tridosha* teachings rheumatic symptoms result from an inequality and disharmony among the three *doshas* (humors) in particular form a predominance and dysfunction of the *vata dosha*.<sup>3</sup> '*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.<sup>4</sup> The present case was diagnosed and treated according to '*Asthi-majja gata vata*'.

The patient has been taking various NSAID's, cortico-steroids and DMARD's, which were gradually tapered and completely withdrawn during the initial stages of *Ayurvedic* treatment.

Whenever the patient showed '*Saama vata lakshana*'.<sup>9</sup> like, *vibandha* (constipation), *agni saada* (loss of digestive capacity), *aantra kujana* (borborygmi), *vedana* (pain) and aggravation during the time of cloudy weather and at night time etc; *rookshana* (dry/rough) procedure like *udwartanam* (massage with herbal powders) with '*Kola kuluthadi choornam*' was selected. After attaining *niraamavastha* (lightness in the body, reduced pain, increased appetite etc; features) by *udwartana*, *snehana* and *swedana* by *patra pottali pinda sweda*/*jambeera pinda sweda* (massage with bolus prepared by medicinal leaves and powders) was started by using '*Karpooradi tailam*'. '*Karpoora tailam*' is selected for massage to relieve pain and to reduce morning stiffness. '*Lashuna erandadi kashaya*'/'*Ashtavarga kashaya*'/'*Prasaaranyadi kashaya*' were used to reduce the severity of pain. '*Panchatikta ghrita*' administered internally to heal/prevent the pathology of bones and also to reduce the deformities.

The baseline score (before starting our treatment) on BASDAI was '4.5' and after 6 months completion of treatment the score on BASDAI was reduced to '0.9' i.e., there was '80%' of improvement found. Good improvement was found in 'fatigue/tiredness' (80% relief), 'neck/back/hip pain' (75% relief), 'tenderness' (80% relief), and 'intensity as well as duration of morning stiffness' (88% relief). Patient's sleep, appetite and quality of life were improved. There was noticeable improvement observed (thoracic kyphosis/stooping of neck forward) in X-Ray of cervical spine (Figures 3&4). Knee joint pains were totally relieved and patient's posture got improved along with relief in low back ache and neck pain. No adverse effects were reported by the patient. The patient got clinically meaningful improvement by internal medicines along with dietary restrictions (advised to avoid dairy products and to drink hot water) and life style changes. *Ayurvedic* treatment seems to be promising in the management of AS with in short period of time and without causing any adverse effects.



**Figure 3** X – Ray of Cervical spine – Lateral view (dated on 08.08.2016).



**Figure 4** X – Ray of Cervical spine – Lateral view (dated on 20.12.2016).

## Conclusion

The *Ayurvedic* diagnosis of ‘*Asthi-majja gata vata*’ is made for ‘Ankylosing spondylitis’ in present case. Various *Ayurvedic panchakarma* procedures and internal medicines have provided promising results especially in reducing the pain, decreasing the severity of deformities and also improving quality of life within short time and without causing any adverse effects in present case. Present study findings can’t be generalized and further long term follow up studies with large sample are required to substantiate these claims.

## Acknowledgments

None

## Conflicts of interest

Author declares that there are no conflicts of interest.

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