महानिदेशक सशस्त्र सेना चिकित्सा सेवा चिकित्सा ज्ञापन क्रमांक 181
DGAFMS MEDICAL MEMORANDUM NO. 181

स्पोंडिलोअर्थ्राइटिस
SPONDYLOARTHRITIS

(2012 में जारी किया गया)
(Issued in 2012)

सत्यमेव जयते

वितरण :--

(क) एक प्रति प्रत्येक चिकित्सा अधिकारी को।

(ख) एक प्रति प्रत्येक चिकित्सा यूनिट एवं फार्मेशन मुख्यालयों की चिकित्सा शाखाओं को।

Distribution :—

(a) One copy per medical officer.

(b) One copy per medical unit including Medical Branches of Formation Headquarters.

महानिदेशक सशस्त्र सेना चिकित्सा सेवा के प्राधिकार से जारी किया गया
Issued under the authority of the DGAFMS

मैनेजर ऑफ पब्लिकेशन, सिविल लाईन्स, दिल्ली-54 द्वारा वितरित
(DISTRIBUTION BY THE MANAGER OF PUBLICATIONS, CIVIL LINES, DELHI-110054)

(Case No 3989/DGAFMS/DG-3C)

DRAFT MEDICAL MEMORANDUM ON SPONDYLOARTHRITIS –181

INTRODUCTION

1. The Spondyloarthritis or Spondyloarthropathies (SpAs) are a family of interrelated yet distinguishable disorders which include ankylosing spondylitis (AS), reactive arthritis (ReA), psoriatic arthritis, spondyloarthropathy associated with inflammatory bowel disease (IBD) and undifferentiated spondyloarthropathy (USpA). The SpAs are linked by a common genetic susceptibility (HLA-B27) and a common pathology (enthesitis). The etiology of SpA is unknown but involves the interaction of genetic and environmental factors.

2. The prevalence of SpA in India is between 0.1 and 0.2% . The risk increases to 15-20% if one of the first-degree relative has AS. The age of onset of AS is usually from the late teens to age 40 years.

3. A significant portion of patients develop chronic progressive disease and disability due to spinal inflammation leading to fusion and thoracic tryphosis or erosive disease involving peripheral joints, especially the hips and shoulders. Most functional loss in ankylosing spondylitis occurs during the first 10 years of illness.

4. SpA may be associated with various extraarticular manifestations such as uveitis (in 20-30%), cardiovascular involvement (~10% in form of aortic valve insufficiency and various degrees of atrioventricular block), Pulmonary involvement (Restrictive lung disease), renal involvement (IgA Nephropathy and Amyloidosis), neurologic involvement (atlantoaxial subluxation and cervical myelopathy), gastrointestinal involvement (Asymptomatic inflammation of the proximal colon and terminal ileum has been observed in as many as 60% of patients with AS) And metabolic bone disease (new bone formation at sites of spinal and peripheral enthesitis, osteopenia and osteoporosis).

CLINICAL FEATURES AND DIAGNOSIS of SpA

5. The following clinical features are suggestive of SpA:

(a) Inflammatory back pain (IBP) is the most important feature. IBP will be diagnosed when at least four out of five following parameters are present :

(i) Age at onset < 40 years

(ii) Insidious onset

(iii) Improvement with exercise

(iv) No improvement with rest

(v) Pain at night

(b) Predominantly lower limb arthritis

(c) Family history of SpA (First or second degree relative)

(d) Tenderness of the SI joints (by tests which stress this joint)

(e) Associated history of uveitis

(f) Dactylitis, Psoriasis, Inflammatory bowel disease

6. Diagnostic criteria: Of all the patients with chronic low back ache, about 5% will have Spondyloarthropathy. A diagnostic algorithm based on identifying inflammatory back pain, detailed history taking, MRI and HLA B27 is given in Appendix "A".

Diagnosis of Axial SpA in patients with >03 months back pain and age at onset <45 yrs

Sacroiliitis on imaging plus > 1 SpA feature	or	HLA B 27 plus >2 SpA features

SpA features

1. IBP
2. Arthritis
3. Enthesitis
4. Uveitis
5. Dactylitis
6. Psoriasis
7. Crohn's/colitis
8. Good response to NSAIDs
9. Family history of SpA
10. HLA B 27
11. Elevated CRP

Sacroliitis on imaging

1. Active oracute inflammation on Magnetic Resonance Imaging (MRI) highly suggestive of sacroiliitis associated with SpA
2. Definite radiographic sacroiliitis (see para 11 of text)

7. The following features are associated with a poorer prognosis in AS:

(a) Male sex

(b) Older age at onset

(c) Longer disease duration and greater severity

(d) Hip involvement

(e) Extra-axial involvement (number of peripheral joints affected, extent of enthesitis)

(f) Eye involvement

(g) Raised acute phase reactants (erythrocyte sedimentation rate, C-reactive protein)

(h) Poor response to NSAIDs

(j) Presence of radiological changes at baseline

8. The other spondyloarthropathies include

(a) **Reactive arthritis (ReA)** : ReA is an arthritis that is associated with a recent prior extraarticular infection. The classical pathogens for reactive arthritis are: Chlamydia trachomatis, Yersinia, Salmonella, Shigella and Campylobacter, and perhaps Clostridium difficile and Chlamydia pneumonia. The interval between preceding symptomatic infection and onset of arthritis should be a minimum of several days and maximum of several weeks between the preceding symptomatic infection and onset of arthritis. The typical arthritis pattern is an asymmetrical mono or oligoarthritis, predominantly of the lower extremities.

(b) Psoriatic arthritis (PsA) : PsA is an inflammatory arthritis associated with psoriasis. The other features are enthesitis, tenosynovitis and dactylitis.

(c) Undifferentiated spondyloarthritis (USpA) : USpA refers to patients with clinical features who do not meet established classification criteria for ankylosing spondylitis, reactive arthritis, psoriatic arthritis, or SpA related to inflammatory bowel disorders. These patients can be split into predominant axial USpA and/or predominant peripheral USpA, based upon whether they present predominantly with back pain or with peripheral arthritis/enthesitis.

ASSESSMENT OF DISEASE

9. Treatment decisions depend upon an accurate assessment of both the activity and the damage caused by AS. Core set of domains and instruments that covers the most important aspects of disease assessment in SpA are summarised in the table below and are described in Appendix "B" :

DOMAIN	INSTRUMENT
Function :	BASFI*
Pain :	NRS/VAS** (last week/spine/at night due to AS)
Spinal mobility :	Chest expansion Modified Schober Occiput to wall distance Cervical rotation Lateral spine flexion/BASMI#
Patient global :	NRS/VAS (global disease activity last week)
Peripheral joints and entheses :	Number of swollen joints (44 joint count) Validated enthesitis score, such as MASES$
Stiffness:	NRS/VAS (duration of morning stiffness/spine/last week)
Acute phase reactants:	CRP/ESR
Fatigue :	Fatigue question BASDAI @

$MASES: Maastricht Ankylosing spondylitis enthesis score
**NRS : Numerical Rating Scale : 0—0 Visual analogue scale - 0—100
* BASFI : Bath Ankylosing Spondylitis Functional Index
@BASDAI: Bath Ankylosing Spondylitis Disease Activity Index
#BASMI : Bath Ankylosing Spondylitis Metrology Index

10. The disease activity score for use in SpA can be calculated from clinical assessment in form of a composite 'CRP score' by rheumatologists. A CRP score of <1.3 indicates inactive disease, while that >3.5 indicates very high disease activity. The CRP score utilises following parameters:

(a) Total back pain

(b) Patient global of disease activity

(c) Peripheral pain/swelling

(d) Duration of morning stiffness

(e) C-reactive protein (CRP) in mg/litre (ESR can also be used if CRP values are not available).

11. The various imaging modalities in SpA are :

(a) **Plain radiographs**: The sacroiliitis grading system is as described below. Unilateral disease requires Grade 3 or higher while bilateral disease can be diagnosed with a score Grade 2 or higher.

(i) Grade 0: Normal findings

(ii) Grade 1: Suspicious changes

(iii) Grade 2: Minimum abnormality, defined as small localized areas with erosion or

sclerosis without alteration in the joint width

(iv) Grade 3: Unequivocal abnormality

(v) Grade 4: Total ankylosis

(b) **CT scanning** : CT scan is best used in patients with clinically suspected AS who have equivocal plain radiographs of the sacroiliac joints, especially with a contraindication for MRI.

(c) **MRI** : Early inflammatory changes can be picked up on an MRI scan before they become evident on conventional radiographs or CT scans. Dynamic contrast- enhanced MRI seems to be moresensitive than CT and radiography in detecting sacroiliitis in patients with documented AS or an undifferentiated spondyloarthropathy.The MRI findings are listed in the table below :

MRI lesions of sacroiliac joint involvement in SpA:

Active inflammatory lesions (STIR/post-gadolinium T1):

- bone marrow oedema (osteitis)

- capsulitis
- synovitis
- enthesitis

Chronic inflammatory lesions (normally T1):

- sclerosis
- erosions
- bony bridges/ankylosis

MANAGEMENT OF SpA

12. The goals of treatment of SpA are :

(a) To provide maximum relief or completely eliminate symptoms such as pain and stiffness.

(b) To restore function/functional capacity as best as possible.

(c) To prevent progressive bony erosions, ankylosis of the spine or development of spinal deformities; to preserve and maintain spinal mobility and function.

(d) To prevent complications of spinal disease—e.g. spinal fractures, flexion contractures).

13. The various treatment modalities in SpA are :

(a) Physiotherapy and Exercise : There is ample evidence that physiotherapy in the form of exercises is effective in the management of AS- SpA.

(b) Pharmacologic therapy

(i) Nonsteroidal Anti-inflammatory Drugs (NSAIDs): There is convincing evidence that NSAIDs improve spinal pain, and function over a short (6 weeks) as well as long-term period (52 weeks) in 50% of patients. Comparative studies of different NSAIDs have not shown one preparation to be clearly better than the others. Etoricoxib may be superior to naproxen in treating AS for up to 52 weeks. Unless contraindicated because of co morbidity, NSAIDs should be the first line of treatment for all symptomatic AS patients. Regardless of the NSAID used, the maximum dose is usually

required. To assess the usefulness of a particular NSAID, it should be given at a sustained dose on a regular basis for about two weeks. However, concern over the possible adverse cardiovascular effects of selective COX-2 inhibitors has generally limited their use only to patients who are at increased risk for gastrointestinal bleeding. Nonselective NSAID should always be used in combination with a proton pump inhibitor. Also two conventional NSAIDs/coxibs should never be prescribed together.

(ii) Glucocorticoids : **The use of systemic glucocorticoids is not supported by evidence**. They should not be used except in the following circumstances.

- Local steroid infiltration into the affected joint and enthesis can be helpful.
- Injection of a long-acting corticosteroid into the sacroiliac joints may be beneficial in patients unresponsive to systemic medications[14,15].
- Treatment with periocular and intraocular glucocorticoids injections, sustained release glucocorticoid implants or
- oral glucocorticoids is advocated in the management of uveitis.

(iii) DMARDs : There is **no evidence for the efficacy of disease modifying anti-rheumatic drugs** (DMARDs), including sulphasalazine (SSZ) and methotrexate (MTX) for the treatment of axial disease. However, SSZ is more effective for peripheral joint symptoms than for axial disease [16]. SSZ could be given in AS with recurrent uveitis [17]. Toxicity with SSZ is common but usually mild: GI symptoms, mucocutaneous manifestations, hepatic enzyme abnormalities and haematological abnormalities have been described.

(iv) Biological Agents : The Biological agents currently available for the management of SpA are the Tumor necrosis factor alpha antagonists i.e. Infliximab and Etanercept .They are expensive form of treatment and can be administered as per the following regimen :

(aa) Infliximab : 5 mg/kg body weight intravenous infusion at 0, 2 and 6 weeks and then 8 weekly.

(ab) Etanercept : 50 mg/week subcutaneously.

14. **Guidelines for use of biological agents.** The following guidelines for use of anti-TNF agents are recommended in SpA :

(a) Patients should fulfil the diagnostic criteria for SpA outlined above.

(b) Active disease for ≥4 weeks with BASDAI ≥4 and positive expert opinion.

(c) Treatment failure

(i) All patients should have had adequate therapeutic trials of at least two NSAIDs (defined as for at least two NSAIDs sequentially given over a period of 04 weeks at maximum recommended dose unless contraindicated).

(ii) No pretreatment with DMARDs required for axial disease.

(iii) Peripheral arthritis not responding to one local corticosteroid injection if appropriate or a therapeutic trial of Sulfasalazine

(d) No contraindications like active Tuberculosis, congestive heart failure, demyelinating disease.

(e) Biologicals are to be considered in refractory cases. But in patients who present' initially with very high disease activity (CRP score > 3.5) associated with poor functional capacity may be administered Anti-TNF agents without awaiting response to a trial of NSAIDs/DMARDs. The following laboratory investigations should be performed before initiating biological agents.

(i) Complete haemogram and acute phase reactants-ESR, CRP

(ii) Radiograph of the chest

(iii) CT scan of chest-in case of doubtful opacity in chest X-ray

(iv) Mantoux test

(v) Hepatitis B surface antigen

(vi) Monthly CXR is recommended for the first 3 months after initiating Biologicals to look for development of TB infection.

(vii) Screening for Latent Tubercular Infection (LTBI) is a standard prerequisite for anti TNF-α treatment.

(viii) Loading dose: This is avoided in Indian context as this has been shown to be associated with a reduction in TB flare.

(f) **Response to Biological therapy** : The assessment of the disease of therapy is to be done after 12 weeks as per ASAS core set for daily practice and BASDAI. A 50% improvement in BASDAI or absolute change of 2 is in favour of continuation of therapy.

(g) **How long to give biologicals** : The duration of therapy for biological is ideally lifelong as per guidelines. However, most patients respond within a couple of years and the therapy can be stopped or given on an SOS basis.

(h) **Contraindications to the use of biological agents**

(i) Active tuberculosis

(ii) Pregnancy

(iii) Active infection

(iv) Septic arthritis of a native joint within the last 12 months

(v) Sepsis of prosthetic joint within last 12 months

(vi) Grade 3 or 4 congestive cardiac failure

(vii) Clear history of demyelinating disease

(viii) Patients with immune compromise

(ix) Malignancy

(j) The recommendations for the screening of LTBI are :

(i) TB risk stratification through thorough history and physical examination combined with Standard chest radiograph for detecting TBI/LTBI.

(ii) Prophylaxis is not required in patients with a past history of TB that has been adequately treated.

(iii) Patients with a history of inadequate anti-tuberculous treatment (ATT) or radiographic scarring without previous history of ATT should be offered TB prophylaxis.

(iv) Tuberculin sensitivity testing (TST) using 10 TU-PPD Mantoux test to be performed. If the induration of 10 mm or more is observed between 48 and 72 hours, it should be considered to be positive indicating LTBI or TBI. If the chest X-ray is negative or it shows only old scarring, it is considered confirmatory of LTBI. If the lesions are suspicious, a CECT chest should be done to see if active TBI is present. Depending on whether the imaging confirms LTBI or TBI, further treatment for prophylaxis or active TB is carried out as described below.

- If TST is negative the patient can be given anti TNF-α treatment without any further tests.

- If the test is positive, then based on the chest imaging findings (whether LTBI or TBI), further treatment for prophylaxis or active TB is done.

(v) It is recommended to administer 6-9 months of isoniazid (INH) with Rifampicin for latent TB. TNF blockers should be started after completing this treatment. However, if the clinical situation so warrants, anti TNF-α therapy can be initiated 1 or 2 months after the start of antituberculous prophylaxis.

(vi) An alternative test to TST which is more sensitive and specific is the Interferon Gamma release assays, also called Quantiferon TB Gold test. This test may be used to detect latent TB whenever feasible.

15. **Surgical treatment:** Total hip replacement is indicated in AS whenever there is severe, persistent pain or severe limitation in mobility due to hip involvement. Cervical fusion is indicated for patients who develop atlanto-axial subluxation with impairment in

neurologic function. Wedge osteotomy is indicated in those patients who develop flexion deformities severe enough to impair the ability to look in a forward direction.

DISPOSAL OF SERVING PERSONNEL DETECTED TO HAVE SpA

16. The following guidelines are recommended for disposal of cases with SpA :

(a) On initial diagnosis of SpA, the serving personnel will be placed in low medical category, P 3 (T-24) or equivalent of in Air Force and Navy.

(b) He/she will be then followed up for every 3-6 months and then may be placed in Cat P 2/3 (Perm) depending on his disease status and functional capacity.

(c) All patients with SpA will be recommended to be unfit posting to High altitude/extreme cold climatic areas and difficult terrain.

(d) **Invalidment from military service** (Cat P 5) is considered in the following situation :

(i) Persistent high disease activity refractory to biological therapy.

(ii) Advanced chronic disease with markedly impaired spinal mobility or peripheral joint damage and those with associated incapacitating extra-articular manifestations which are unlikely to improve with treatment.

(iii) Poor performance status disabling him from carrying out even his routine activities of daily living or the assigned sedentary military duties.

(iv) Any recruit or military cadet diagnosed to have SpA is recommended invalidation due to the permanent and disabling nature of the disease.

(e) A known case of SpA in low medical category may be considered for upgradation to P1 in the following circumstances :

(i) The disease should remain in complete clinical remission along with drug free duration of minimum two years.

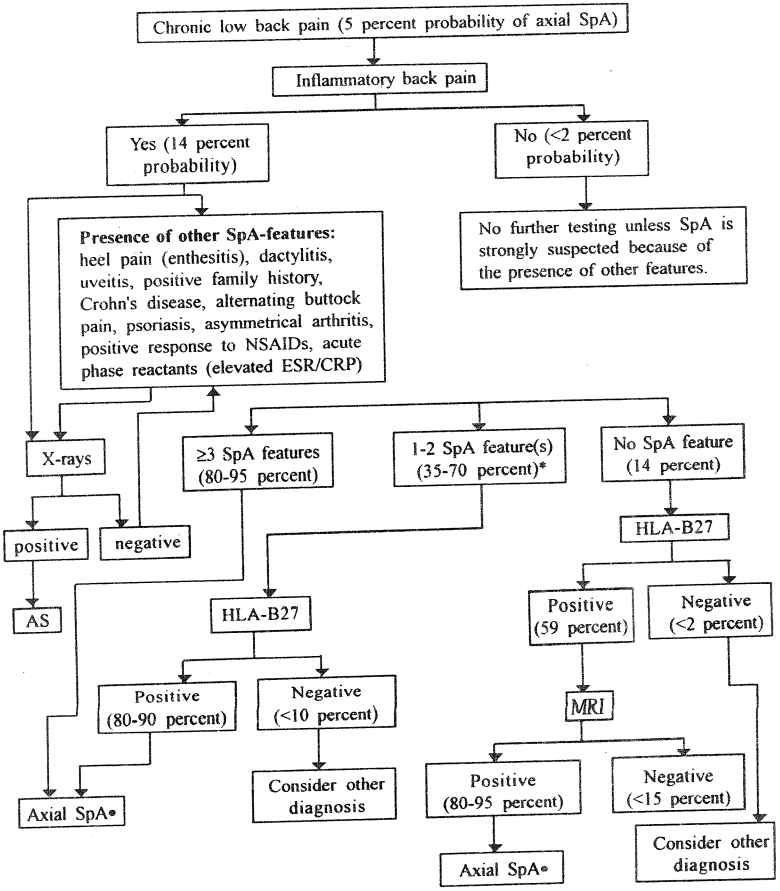
(ii) There should be adequate spinal mobility with a good functional status.

(iii) There should be no laboratory markers of high disease activity or radiological evidence of joint involvement.

(iv) The individual should be able to perform the assigned physically demanding tasks in the unit without any discomfort.

Appx 'A' to Para 6

Probability of Spondylaoarthropathy in a patient with chronic low back ache



Appx "B" to para 9

CORE SET INSTRUMENTS

Functional assessment : Bath Ankylosing Spondylitis Functional Index (BASFI)

Items to be scored by the patient :

1. Putting on your socks or tights without help or aids
2. Bending forward from the waist to pick up a pen without an aid
3. Reaching up to a high shelf without help or aids
4. Getting up out of an armless dining room chair without using your hands or any other help
5. Getting up from floor without help from lying on your back
6. Standing unsupported for 10 mins without discomfort
7. Climbing 12 -15 steps without using a handrail or walking aid, one foot at each step
8. Looking over your shoulder without turning your body
9. Doing physically demanding activities
10. Doing a full day's activities, whether be at home or at work

The BASFI is the mean of 10 item scores completed on a numerical rating scale.

0	1	2	3	4	5	6	7	8	9	10

Easy Impossible

Spinal mobility : The Bath Ankylosing Spondylitis Metrology Index (BASMI) is a validated composite index of spinal and hip mobility.

Bath Ankylosing Spondylitis Metrology Index (BASMI) 3-point answer scale

	0	1	2
	Mild	Moderate	Severe
Lateral lumbar flexion (cm)	> 10	5 - 10	< 5
Tragus to wall distance	< 15	15 - 30	> 30
Lunbar flexion (modified Schober)	> 4	2 - 4	< 2
Maximal intermalleolar distance	> 100	70 - 100	< 70
Cervical rotation (o)	> 70	20 - 70	< 20

Disease activity in SpA is generally assessed as a combination of pain, fatigue, stiffness and discomfort, and the standard instrument used in both daily practice and clinical trials is the **BASDAI**.

Fatigue

1. How would you describe the overall level of fatigue/tiredeness you have experienced?

0	1	2	3	4	5	6	7	8	9	10

None Very severe

Spinal pain

2. How would you describe the overall level of neck, back or hip pain you have had?

0	1	2	3	4	5	6	7	8	9	10

None Very severe

Peripheral arthritis

3. How would you describe the overall level of pain/swelling in joints other than neck, back or hips you ever had?

0	1	2	3	4	5	6	7	8	9	10

None Very severe

Enthesitis

4. How would you describe the overall level discomfort you have had from any areas tender to touch or pressure?

0	1	2	3	4	5	6	7	8	9	10

None Very severe

Intensity of morning stiffness

5. How would you describe the overall level of morning stiffness you have had from the time you wake up?

0	1	2	3	4	5	6	7	8	9	10

None Very severe

Duration of morning stiffness

6. How long does your morning stiffness last from the time you wake up?

0	1	2	3	4	5	6	7	8	9	10

0h 1h 2 hr or more

Calculation of **BASDAI**:

Compute the mean of questions 5 and 6.

Calculate the sum of the values of 1-4 and add the result to the mean of questions 5 and 6. Divide the result by 5

MAASTRICHT ANKYLOSING SPONDYLITIS ENTHESIS MASES) SCORE

13 sites :

- First Costochondral junction right/left
- Seventh Costochondral junction right/left
- Anterior superior iliac spine right/left
- Posterior superior iliac spine right/left
- Iliac crest right/left
- Spinous process L 5
- Achilles tendon , proximal insertion right/left

No grading

All sites are scored as 0 or 1

The MASES is the sum of all site scores (from 0-13)