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Original Article

Clinical Spectrum and Subtypes of Spondyloarthritis: A Hospital-Based Observational Study from Kashmir

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Abstract

Background: Spondyloarthritis (SpA) represents a spectrum of inflammatory rheumatic disorders with overlapping clinical features, genetic associations, and extra-articular manifestations. Data from South Asia, particularly Kashmir, remains limited. ***Objectives:*** To evaluate the clinical presentation and subtypes of spondyloarthritis in patients attending a tertiary care center in Kashmir. ***Methods:*** This hospital-based observational study was conducted over two years at SKIMS Soura, Srinagar. Seventy patients fulfilling classification criteria for SpA or suspected cases of undifferentiated SpA were included. Detailed clinical assessment, laboratory investigations including HLA-B27, radiological imaging, and disease activity scoring were performed. ***Results:*** Ankylosing spondylitis (AS) was the most common subtype (54%), followed by psoriatic arthritis (19%), undifferentiated SpA (14%), reactive arthritis (9%), and enteropathic arthritis (4%). The mean age of presentation was 33.8 ± 9.4 years with a male-to-female ratio of 1.6:1. Inflammatory back pain was the predominant symptom (76%), while peripheral arthritis was seen in 61% of patients, most commonly involving the knee and ankle. Enthesitis was observed in 33%, dactylitis in 16%, and ocular involvement (mainly uveitis) in 21%. Skin and nail manifestations were frequent among psoriatic arthritis patients. Elevated ESR and CRP were present in 73% and 66% of cases, respectively, though not directly correlated with disease activity. Overall, 61% were HLA-B27 positive, with a strong association in AS patients (74%). ***Conclusion:*** SpA in Kashmir demonstrates male predominance and a relatively young age at onset. AS is the most frequent subtype, with inflammatory back pain and peripheral arthritis being common presentations. Enthesitis was the leading extra-articular manifestation, and HLA-B27 positivity correlated with uveitis in AS. Early recognition of clinical patterns may aid timely diagnosis and improved outcomes.

Keywords: ***Spondyloarthritis, Ankylosing spondylitis, Psoriatic arthritis, Reactive arthritis, Enthesitis, Uveitis, HLA-B27.***

Introduction

The term "Spondyloarthritis" (SpA) describes a collection of related conditions that have similar pathogenic mechanisms, clinical characteristics, and genetic correlations. The traditional classifications include juvenile spondyloarthritis (JSpA), psoriatic arthritis (PsA), reactive arthritis (ReA), ankylosing spondolytis (AS), arthritis linked to inflammatory bowel disease (IBD), and undifferentiated spondyloarthritis. These conditions are often divided into two categories: primarily peripheral SpA, which affects the extremities, and largely axial SpA, which affects the spine, pelvis, and thoracic cage. A category of inflammatory rheumatic disorders that mostly affect the axial joints is known as spondyloarthritis (SpA). However, extraarticular symptoms such as inflammatory bowel disease (IBD), dactylitis, uveitis, and enthesitis are also observed [1,2]. Sacroiliitis shouldn't be the only joint involvement in SpAs [3]. Because SpA has a multifactorial etiopathogenesis, its prevalence varies by country. SpA prevalence varies from 0.01% in Japan to 2.5% among Northern Arctic indigenous, with a global prevalence of approximately 1% [4]. There is a dearth of pertinent South Asian SpA data [5]. 7-9/100.000 people are described in reports on the prevalence of AS from the Western area (Maharashtra) of India [6,7]. According to a major hospital-based study from Southern India, 87% of the patients had HLA-B27, and 0.6% of the patients had AS [8]. Young, productive adults are frequently affected by SpAs, which have a significant socioeconomic impact and lower their quality of life (QoL) [9,10].

The distribution and kind of musculoskeletal symptoms, as well as certain extraarticular characteristics, are the main clinical characteristics that set spondyloarthritis (SpA) apart from other types of arthritis. Chronic low back pain is a hallmark of patients with axial SpA. Peripheral SpA patients may have peripheral musculoskeletal symptoms such as peripheral arthritis, enthesitis (heel discomfort and/or edema), and dactylitis (sausage digits). One of the main components of axial SpA is chronic, nearly constant back discomfort. In 70 to 80 percent of individuals with axial SpA, a combination of low back pain characteristics known as "inflammatory back pain" is present. These characteristics include discomfort at night, relief with activity but not with rest, a gradual onset that usually occurs before the age of 40, and a favorable reaction to nonsteroidal anti-inflammatory drug (NSAID) treatment. While NSAIDs may provide some relief for patients with back pain

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from a variety of causes, SpA patients typically experience noticeable pain relief within 24 to 48 hours [11]. About 37% of patients with axial SpA and 79% of patients with peripheral SpA develop peripheral arthritis at some stage [12]. Peripheral arthritis in SpA is frequently characterized by swelling and primarily affects the lower limbs, particularly the knees and ankles [13]. Only one to three joints are often affected by arthritis, which is frequently asymmetrical [14]. When compared with other rheumatic diseases, the sensitivity and specificity of asymmetric oligoarthritis for SpA are 41 and 87 percent, respectively [13].

Inflammation surrounding the enthesis, where ligaments, tendons, joint capsules, or fascia attach to bone, is known as enthesitis (or enthesopathy) and is comparatively unique to SpA [15]. Swelling at the heels, where the Achilles tendon attaches, or where the plantar fascia ligament attaches to the calcaneus is the most typical clinical sign of enthesitis [13]. It is typically linked to extreme sensitivity and pain. A patient with plantar fasciitis may have trouble walking barefoot on their heels during a medical examination. Dactylitis, commonly referred to as sausage toe or sausage finger, is a hallmark of SpA, particularly psoriatic arthritis and rarely reactive arthritis. Dactylitis causes swelling over the entire digit, as opposed to synovitis, which just affects the joints. Just 5% of patients with axial SpA and 17% of patients with peripheral SpA develop dactylitis [12]. Manubriosternal, sternoclavicular, and costosternal joint involvement causes anterior chest wall pain in around 35 to 50 percent of axial SpA patients [16]. Psoriasis, related inflammatory bowel disorders, and uveitis are the main extra-musculoskeletal characteristics:

Inflammatory eye disease: SpA may be linked to a number of ocular inflammatory diseases, such as anterior uveitis and conjunctivitis [17,18]. The symptoms of conjunctivitis usually go away in a few weeks and are usually non-purulent. Anterior uveitis (iritis) is a more severe issue [18]. Up to 30% of patients with SpA develop uveitis, typically anterior uveitis, and about 50% of those patients experience repeated episodes [19]. Clinicians should be alerted to the likelihood of SpA by uveitis, which may be the first issue to warrant medical evaluation. A kind of SpA that may have gone undetected until the onset of uveitis is present in 20 to 50 percent of patients with acute recurrent unilateral anterior uveitis. Many patients who experience their first bouts of uveitis are unaware that SpA could be the cause [20,21].

Inflammation of the bowel mucosa: Crohn's disease and ulcerative colitis are inflammatory bowel illnesses that are linked to inflammation of the gut mucosa, or SpA. According to a comprehensive analysis, 6.8% of patients with ankylosing spondylitis (AS) had inflammatory bowel disease [22]. On the other hand, the most prevalent extraintestinal symptoms in patients with inflammatory bowel disease are SpA musculoskeletal symptoms [19,23].

Psoriasis: All types of SpA are linked to psoriasis. Although this is still up for debate, some experts have proposed that all psoriasis-related arthritis types belong to the SpA family [28,24]. As many as 10 percent of AS patients have psoriasis [22,25]. Peripheral joint involvement and dactylitis are more common in people with AS who also have psoriasis, and the course of the disease may be more severe than in those who do not [26].

Family history: Among patients with persistent back pain suspected of axial SpA, those with a positive family history of either acute anterior uveitis in a first- or second-degree relative or ankylosing spondylitis were more likely to meet the Assessment of Spondylo Arthritis International Society (ASAS) criteria for axial SpA [19,27].

Aims and Objectives

To evaluate the different presenting symptoms and clinical patterns of spondyloarthritis.

Materials and Methods

Study Design: The study was hospital based observational study.

Study period: The study was conducted over a period of 2 years.

Study Area: The study was conducted in SKIMS Soura in Rheumatology division of department of internal medicine.

Study Population: The patients who presented with the suspicion of seronegative spondyloarthritis in OPD or ward of rheumatology division of department of internal medicine were taken into study. Inclusion criteria: Patients fulfilling relevant classification criteria for spondyloarthritis were taken into the study, patients not fulfilling any criteria but having suspicion of spondyloarthritis were classified under undifferentiated spondyloarthritis.

Methodology: Patients fulfilling a relevant criteria for spondyloarthritis were taken from OPD and ward admissions of Rheumatology department of SKIMS Soura. Following criteria were used to classify the patients:

- ASAS Criteria for AS
- CASPAR Criteria for Psoriatic Arthritis
- Seiper and Braun Criteria for Reactive Arthritis
- Lower Gut Endosopy and Biopsy documented cases of IBD related arthritis
- And Patients who are not fulfilling any criteria's are classified into Undifferentiated Spondyarthritis cases.
- Detailed history of the patient was taken, and detailed physical examination was performed.
- Specific tests were performed which included ▪ CBC, KFT, LFT, ESR, CRP, RF, anti-CCP, HLA B-27 in all the patients.
- X-ray and MRI SI JOINTS with STIR sequence was done in selected patients.
- ASDAS -CRP disease activity score was used in AS patients to determine the disease activity.
- A proper consent was taken from all the patients.

Statistical analysis: Data was entered in Statistical Package for Social Science (SPSS) software. All the categorical data has been shown in the form of frequency and percentage and the continuous data was further analysed by chi square. All the catagorical variables were analysed by using proper test by confirming the normality of the distribution. p-Value < 0.05 was considered significant [S].

Results

This Study was done in Department of Internal Medicine, Rheumatology Division Sher-i-kashmir Institute of Medical Sciences, Soura Srinagar. Total number of 70 patients with seronegative spondyloarthritis are included in this study on OPD basis and during ward admissions. Out of these patients 38 were having AS (54%), 3(4%) were having IBD related Arthritis,13(18%) were having psoriatic Arthritis, 6(8%) were having Reactive Arthritis as per criterias defined for these disorders. 10 of these patients did not fit any criterias and are labelled as Undifferentiated

Arthritis. Mean age of presentation was 33.8 years with range from 16 years to 60 years and standard deviation of 9.39. 43 were males and 27 females. Back pain was the present in 52(76%) patients out of total 70 patients, p=0.0001[S].

39 (56%) out of total 70 patients were having morning stiffness > 30 minutes duration out of which 32(84.2%) patients were from AS, p<0.0001[S].

Table 1: Showing frequency of arthritis

Joint Involved	Frequency	Percentage
Axial	25	36
Peripheral	29	41
Axial plus peripheral	14	20
Total	68	97

Table 2: Showing distribution of Peripheral joint involvement

Joint Involved	Frequency	Percentage
Ankle	11	25
Elbow	3	7
Feet	2	5
Hand	8	19
Knee	19	44
Total	43	100

Table 3: Showing distribution of arthritis among subtypes

Spondyloarthritis	Axial	Periphera	Axial plus peripheral
AS	24	0	14
Psoriatic Arthritis	1	12	0
Reactive Arthritis	0	6	0
Enteropathic Arthritis	0	3	0
Undifferentiated Arthritis	0	8	0
Total	25	29	14

Table 4: Showing distribution of skin lesions among different subtypes

Spondyloarthritis	Pscoriatic Skin Lesion	Percentage	Cumilative Percentage
AS	0	0	0
Psoriatic Arthritis	12	75	18
Reactive Arthritis	0	0	0
Enteropathic Arthritis	0	0	0
Undifferentiated Arthritis	1	10	1
Total	13		19

Table 5: Showing distribution of nail changes among different subtypes

Spondyloarthritis	Pitting	Oncholysis	Hyperkeratosis
AS	0	0	0
Psoriatic Arthritis	9 (69%)	8(62%)	5(38%)
Reactive Arthritis	0	0	0
Enteropathic Arthritis	0	0	0
Undifferentiated Arthritis	1	1	0
Total	10(13%)	9(11)	5(7%)

Table 6: Showing distribution of ocular findings in patients on slit lamp examination

Spondyloarthritis	Uveitis	Percentage	Conjuctivitis	Percentage
AS	12	32	5	13
Psoriatic Arthritis	2	15	0	0
Reactive Arthritis	0	0	1	17
Enteropathic Arthritis	1	33	0	0
Undifferentiated Arthritis	0	0	0	0
Total	15		6	

Table 7: Showing distribution of enthesitis among subtypes

Spondyloarthritis	Elbow Enthesitis	Heel Enthesitis	Plantar Fascitis	Total
AS	2(5%)	5(13%)	3(8%)	10(26%)
Psoriatic Arthritis	1(8%)	2(15%)	2(15%)	5(38%)

Reactive Arthritis	0	2(20%)	2(20%)	4(40%)
Enteropathic Arthritis	0	0	0	0
Undifferentiated Arthritis	0	2(20%)	2(20%)	4(40%)
Total				23(33%)

Table 8: Showing distribution of dactylitis

Spondyloarthritis	Number of patients with Dactylitis	Percentage
AS	1	1
Psoriatic Arthritis	6	46
Reactive Arthritis	0	0
Enteropathic Arthritis	0	0
Undifferentiated Arthritis	4	40
Total	11	16

Table 9: Showing distribution of inflammatory markers among patients of spondyloarthritis

Spondyloarthritis	High ESR	High CRP
AS	29(76%)	27(71%)
Psoriatic Arthritis	9(69%)	8(62%)
Reactive Arthritis	5(83%)	4(67%)
Enteropathic Arthritis	1(33%)	1(33%)
Undifferentiated Arthritis	7(70%)	6(60%)
Total	51(73%)	46(66%)

Table 10: Showing distribution of HLAB-27 among patients in our study

Spondyloarthritis	HLAB-27 Positive	Percentage
AS	28	74
Psoriatic Arthritis	7	54
Reactive Arthritis	4	66
Enteropathic Arthritis	1	33
Undifferentiated Arthritis	3	30
Total	43	61.4

28 (74%) out of 38 patients with AS were HLAB-27 positive, p=0.0003[S]. 7 (54%) out of 13 patients with psoriatic arthritis were HLAB-27 positive, p>0.05[I].

Discussion

In this study AS was the most common subtype (n=38,54%). The second most common subtype was Psoriatic arthritis(n=13,19%) followed by Undifferentiated SpA(n=10,14%), Reactive arthritis(n=6,9%) and Enteropathic arthritis(n=3,4%).The study "Clinical presentation and subtypes of spondyloarthritis patients in North East India" was done by Alokjyoti Malakar *et al.*[28], they included 34 patients and found that AS was the most common subtype (n=19,56%) followed by reactive arthritis and undifferentiated SpA. Mean age of presentation of patients in our study was 33. 8 ± 9.399 years with most of the patients are in the age group of 30 – 39 years while in above mentioned study by Alokjyoti Malakar the mean age of presentation was 28.9 years with most of the patients in age group of 21 - 40 years. In our study 61% patients were males and 39% were females with male: female ratio of 1.6:1, which shows a male predominance of spondyloarthrthopathies. The study done by Adel Abdelsalam *et al.*[29] which included 53 patients of spondyloarthritis found male to female ratio of 1.4. Back pain was the predominant presenting complaint found in 52(74%) patients and among them inflammatory back pain was found in 39 (56%) patients, out of which 32(84%) patients were from AS followed by 6(60%) patients of undifferentiated arthritis and 1 (7%) patient from Psoriatic arthritis. The study done by Prenam Houzou *et al.*[30] "Clinical profile of ankylosing spondylitis " found back pain in 34 (91%) out if 37 patients out of which inflammatory back pain was found in 24 (71%) patients. Axial Arthritis was seen in 39(56%) patients in our study and Peripheral arthritis was seen in 43(61%) patients. Axial plus peripheral arthritis was noted in 14(20%) patients. In axial involvement, sacroiliatis was the most common joint involvement for which inflammatory back pain was the most common presenting complaint noted in 39(56%) patients. While in peripheral joint involvement most common joint involved is knee joint followed by ankle, hand, elbow and feet. Axial arthritis was only noted in patients of ankylosing spondolytis with exception of 1 patient of psoriatic arthritis fulfilling CASPAR criteria. Peripheral joint arthritis was more seen in Peripheral spondyloarthritis with 14(37%) patients of ankylosing spondylitis having both axial and Peripheral arthritis.

In our study, 23 out of total 70 patients presented with enthesitis in the form of heel enthesitis, plantar fasciis and elbow enthesits.10(26%) patients of AS had enthesitis, out of which 5(13%) had heel enthesitis 3(8%) had plantar fasciitis and 2(5%) were having enthesitis. Enthesitis was found in 5(38%) patients of psoriatic arthritis with 2(15%) having heel involvement, 2(15%) plantar fasciitis and 1(8%) having elbow involvement.4(66%) out of 6 patients with reactive arthritis had enthesitis with 2(20%) having heel enthesitis and 2(20%) having plantar fasciitis.4(40%) out of 10 patients of undifferentiated SpA had enthesitis. Enthesitis was predominantly found in reactive arthritis followed by undifferentiated and psoriatic arthritis. The study "Demographic, clinical and radiological characteristics of seronegative spondyloarthritis Egyptian patients: A rheumatology clinic experience in Mansoura" done by Adel Abdelsalam *et al.*[29] on 34 patients found enthesitis in 5(10%) patients. 11(16%) patients out of 70 Patients with spondyloarthritis had dactylitis which included

1(3%) patient of AS, 6(46%) patents of psoriatic arthritis, 4(40%) patients of undifferentiated arthritis. Dactylitis was not seen in patients with reactive arthritis and enteropathic arthritis. Dactylitis was predominantly observed in patients of undifferentiated SpA and psoriatic arthritis. The study done by Adel Abdelsalam *et al*.[29] found Dactylitis in 5(10%) patients.

A total of 21(30%) patients had ocular involvement in the form of uveitis (21%) and conjunctivitis (9%). Out of 38 patients of AS, 17 patients had ocular findings in which 12(32%) had uveitis and 5(13%) had conjunctivitis. 2(15%) out of 13 patients of psoriatic arthritis had uveitis, 1(17%) out of 6 patients of reactive arthritis had conjunctivitis and 1(33%) out of 3 patients of enteropathic arthritis had uveitis. No ocular involvement was seen in patients with undifferentiated SpA. In previous studies uveitis was reported in 18.6 % of Chilean SpA patients and in 20% of Egyptian SpA patients. In our study uveitis was frequently observed in patients who were HLA B-27 positive. The study done by Adel Abdelsalam *et al.*[29] on 53 patients found uveitis in 6(12%) patients and most of them were HLA B27 positive. In our study out of 70 patients, 13(23%) presented with skin manifestation in form of psoriatic lesion, 12 (75%) Psoriatic arthritis patients, and 1(6%) Undifferentiated Spondyloarthritis. The study of Alokjyoti Malakar *et al*.[28] revealed skin lesions in 22% patients.It is worthy here to mention that 3 patients of AS had family history of psoriasis but no current Psoriasis. Nail changes (Pitting, oncholysis and hyperkeratosis) were observed in 10(15.7%) patents. Out of 13 Psoriatic arthritis patients, nail changes were observed in 9(69%) patients,5 were having pitting, oncholysis as well as hyperkeratosis,3 patients were having pitting and oncholysis while one patient was having nail pitting only. While in undifferentiated arthritis nail changes were observed in 1 patient. History of preceding infections was observed in 6(9%) patients all of which belonged to reactive arthritis subtype, genitourinary infections was seen in 4(67%) and gastrointestinal infection was noted in 2(33%) patients. 51(73%) patients out of 70 had elevated ESR and 46(66%) patients had high CRP. Out of 38 patients with AS, 27(71%) were having both elevated ESR and CRP with 2 patients having elevation in ESR only. It is important here to emphasize that there was no relation between high inflammatory markers and disease activity. Some patients with normal markers had high disease activity and vice versa. The results were paralled with study of Alokjyoti Malakar *et al*.[28] which revealed raised inflammatory markers were noted in 70.6%of patients. In our study, 43(61%) patients out of 70 patients were HLA B-27 positive. 28(74%) from AS, 7(54%) from psoriatic arthritis, 4(66%) from reactive arthritis, 1 from enteropathic arthritis and 3(30%) from undifferentiated arthritis. It is worthy here to mention that 74% s AS patients were HLA B-27 positive which is in agreement with a study done by Alokjyoti Malakar *et al*ways [46] in which 10(73.7%) were HLA B-27 positive.

Conclusion

Male predominance was found in the SpA patients in our study with male to female ratio of 1.6:1. Mean age of presentation of patients in our study was found to be 33.8 years. Inflammatory back pain and peripheral arthritis were the predominant musculoskeletal manifestations of patients in our study. Enthesitis was the most common extra articular manifestation found in our study. AS patients with HLA B-27 positive were having high association with uveitis. There was no association between raised inflammatory markers and disease activity in patients with AS. Patients with undifferentiated SpA had backpain as predominant presenting complaint followed by peripheral arthritis. As diagnosing SpA can be challenging, it is recommended that the physicians have a high index of suspicion. The knowledge of the pattern of the disease might contribute more towards diagnosing spondyloarthritis and favourable treatment outcomes. Early diagnosis and treatment will subsequently improve quality of life of the involved patients.

Limitations

Our study is limited by the design of the study which does not allow follow up of the patients for assessment of the outcome of treatment. Due to limited time period (2 years) of the study, patients with Undifferentiated Arthritis were not followed for the possible progression into a defined subtype of Spondyloarthritis.

Declarations

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Conflict of interest

None declared

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