

A STUDY ON CLINICAL PROFILE OF SERONEGATIVE SPONDYLOARTHROPATHY IN NORTH KERALA

Vijith Kumar Kuttat¹, Arun Suresh Menon², Vinod V. S³

¹Assistant Professor, Department of General Medicine, P. K. Das Institute of Medical Sciences, Vaniamkulam, Palakkad, Kerala.

²Assistant Professor, Department of General Medicine, P. K. Das Institute of Medical Sciences, Vaniamkulam, Palakkad, Kerala.

³Associate Professor, Department of General Medicine, P. K. Das Institute of Medical Sciences, Vaniamkulam, Palakkad, Kerala.

ABSTRACT

INTRODUCTION

Seronegative spondyloarthropathy is a group of chronic autoimmune disorders that share common clinical, radiological and genetic features that are clearly distinct from other inflammatory rheumatic diseases and characterised by absence of rheumatoid factor. It includes ankylosing spondylitis, reactive arthritis, psoriatic arthritis, inflammatory bowel disease, acute anterior uveitis, undifferentiated spondyloarthropathies and juvenile spondyloarthropathies.

OBJECTIVES

To study the clinical profile of adult patients with seronegative spondyloarthropathy and to classify the patients into specific subtypes based on standard clinical criteria.

METHODOLOGY

A cross-sectional study was conducted among 100 patients with seronegative spondyloarthropathy attending Internal Medicine Department of Calicut Medical College, Kerala using semi-structured questionnaire and standard clinical tests.

RESULTS

Males were found to be more affected with a male female ratio of 2.7:1. Undifferentiated spondyloarthropathy was the most common subtype followed by Psoriatic arthritis and reactive arthritis. Enthesopathy was noted in 88% of patients. Skin and mucosal involvement was seen in 33%. Morning stiffness and peripheral joint involvement was present in most of the cases. Symmetric polyarthritis was the most common presentation of psoriatic arthritis, seen in the study group.

CONCLUSION

Prevalence of Seronegative spondyloarthropathies is on the rise among people of North Kerala. Early diagnosis and appropriate treatment is necessary to prevent complications and improve the quality of life of affected persons.

KEYWORDS

Seronegative Spondyloarthropathy, Ankylosing Spondylitis, Acute Anterior Uveitis, Psoriatic arthritis, Reactive Arthritis, Inflammatory Bowel Disease, Undifferentiated Spondyloarthropathy, Symmetric Polyarthritis, Enthesopathy, North Kerala.

HOW TO CITE THIS ARTICLE: Kuttat VK, Menon AS, Vinod VS. A study on clinical profile of seronegative spondyloarthropathy in North Kerala. J. Evid. Based Med. Healthc. 2016; 3(70), 3793-3797. DOI: 10.18410/jebmh/2016/812

INTRODUCTION: Spondyloarthropathy is a group of chronic autoimmune disorders that includes ankylosing spondylitis,¹ reactive arthritis,² psoriatic arthritis,³ arthritis associated with inflammatory bowel disease,⁴ acute anterior uveitis,⁵ undifferentiated spondyloarthropathies⁶ and juvenile spondyloarthropathy.⁷ They share common clinical, radiological and genetic features that are clearly distinct from other inflammatory rheumatic diseases.

Characteristics of seronegative spondyloarthropathies:

1. Absence of rheumatoid factor and rheumatoid nodules.

2. Peripheral arthritis.
3. Spinal inflammation
4. Peripheral enthesitis.
5. Clinical overlap between different entities of the group.
6. Familial aggregation.
7. Association with HLA B27.

Criteria for Diagnosis of Spondyloarthropathies (AMOR 1991)¹:

A. Clinical symptoms or past history of;

1. Lumbar or dorsal pain during night or morning stiffness of the lumbar or dorsal spine (1 point).
2. Asymmetrical oligoarthritis (2 points).
3. Alternating buttock pains (1 or 2 points).
4. Sausage like toe or digits (2 points).
5. Heel pain or other enthesopathy (2 points).
6. Iritis (2 points).

*Financial or Other, Competing Interest: None.
Submission 22-08-2016, Peer Review 24-08-2016,
Acceptance 29-08-2016, Published 31-08-2016.*

Corresponding Author:

*Dr. Vijith Kumar Kuttat,
'Rohini', Opp. SDA School,
Kanniampuram, Via. Ottapalam,
Palakkad-679104, Kerala.*

E-mail: vijithdoc@gmail.com

DOI: 10.18410/jebmh/2016/812

7. Nongonococcal urethritis or cervicitis accompanying or within 1 month before onset of arthritis (1 point).
8. Acute diarrhoea accompanying or within 1 month before the onset of arthritis (1 point).
9. Presence or history of psoriasis and/or balanitis and/or inflammatory bowel disease (2 points).

B. Radiological Findings:

10. Sacroiliitis (grade ½ if bilateral, grade ¾ if unilateral) (2 points).

C. Genetic Background:

11. Presence of HLA B27 and/or family history of ankylosing Spondylitis, Reiter's syndrome, uveitis, psoriasis, or chronic enterocolopathies (2 points).

D. Response to Treatment:

12. Clear-cut improvement of joint symptoms with non-steroidal anti-inflammatory drugs (2 points).

A patient will be considered as suffering from spondyloarthropathy if the sum of 12 criteria is at least 6:

There is a definite clinical overlap between different diseases which are included in the spondyloarthropathy concept. The diseases share not only many clinical and radiological locomotor manifestations such as inflammatory back pain, peripheral arthritis, enthesitis, sacroiliitis and spondylitis but also extra-articular manifestations in the eye, at the mucosal level and in the skin. Acute anterior uveitis which is linked to HLA B27 is the most common extra-articular manifestation of spondyloarthropathy and occurs in 20 to 40 percent of the patients during the course of the disease. Mucosal involvement in patients with spondyloarthropathy is seen in the gastrointestinal and urogenital tracts.

High index of suspicion is needed for diagnosing seronegative spondyloarthropathy. The present study aims to study the clinical profile of patients with seronegative spondyloarthropathy in North Kerala.

OBJECTIVES:

1. To study the clinical profile (age, sex distribution, major presenting manifestations and laboratory parameters) of adult patients with seronegative spondyloarthropathy.
2. To classify the patients with seronegative spondyloarthropathy into specific subtypes based on standard clinical criteria.

MATERIALS AND METHODS: A cross-sectional study was conducted among adult patients with clinical manifestations or laboratory evidence of seronegative spondyloarthropathy, who attended the Department of Internal Medicine and Rheumatology of Government Medical College, Calicut during 2007-2008. Patients who do not satisfy the Amor's criteria¹ and those who became seropositive during the

study period were excluded from the study. The sample size was 100.

The selected patients were evaluated in detail with clinical history, thorough clinical examination and relevant laboratory investigations done. The study variables included name, age, gender, history of urethritis, cervicitis, diarrhoea, dysentery, psoriasis, ulcerative colitis, Crohn's disease, family history of seronegative spondyloarthropathies, locomotor symptoms (morning stiffness, waking up at night due to pain, improvement with exercise/worsening at rest, onset, etc.), spinal problems (Low back ache, diffuse radiation of pain to buttocks and thorax, sacroiliitis, neck stiffness), peripheral joint pain and deformities, enthesopathy, skin, mucosal, eye and other system involvement. The diagnosis of seronegative spondyloarthropathy was based on Amor's criteria. Modified New York Criteria⁸ was used for diagnosis of ankylosing spondylitis.

Chest expansion is measured as the difference between maximal inspiration and maximal forced expiration in the fourth intercostal space in males or just below the breast in females. Normal chest expansion is ≥ 5 cm.

Schober's test is done by making the patient stand erect with heels together and marks are made directly over the spine 5 cm below and 10 cm above the lumbosacral junction. The patient then bends forward maximally, and the distance between two marks is measured. The distance between two marks increases by ≥ 5 cm in case of normal mobility and by < 4 cm in case of decreased mobility.

The investigations performed include complete haemogram, urine analysis, random blood sugar, blood urea, serum creatinine, C-reactive protein, ECG, chest X-ray, X-ray sacroiliac joint, X-ray lumbosacral spine, X-ray cervical spine, X-ray hand, serum electrolytes and rheumatoid factor.

The data was entered in Microsoft excel sheet and analysed. Institutional ethical committee clearance was obtained before the commencement of study. Written informed consent was obtained from each of the study participants.

RESULTS:

GENERAL OBSERVATIONS: Out of 100 patients, males were found to be more affected with a male female ratio of 2.7:1.

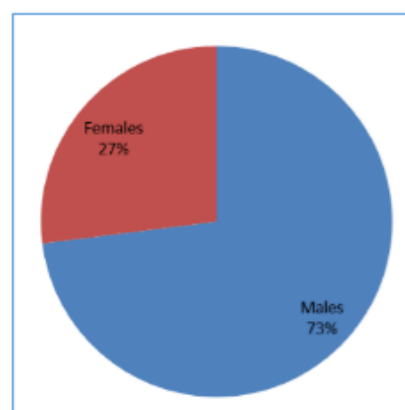


Fig. 1: Pie chart showing Sex distribution of study Subjects

In over 60% of patients, the disease started at 20 to 40 years of age.

Majority of the cases (58%) were in the age group of 20 to 40 years. Undifferentiated spondyloarthritis was the most common form followed by Psoriatic arthritis and reactive arthritis.

Enthesopathy was noted in 88% of patients. Skin and mucosal involvement was seen in 33%. Skin involvement was in the form of psoriatic rash and mucosal involvement was in the form of recurrent oral ulcers. Genitourinary involvement was mainly seen in reactive arthritis as the preceding inciting cause.

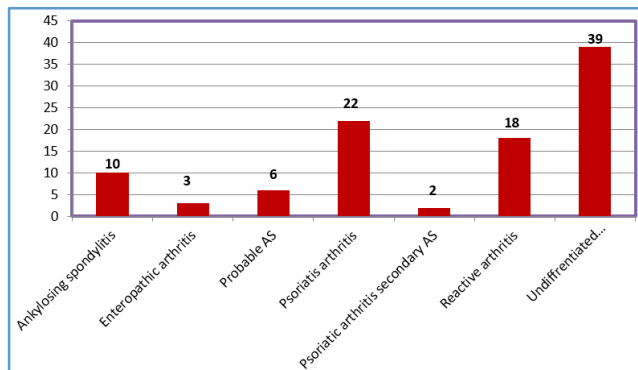


Fig. 2: Frequency of Various subgroups of Seronegative Spondyloarthritis

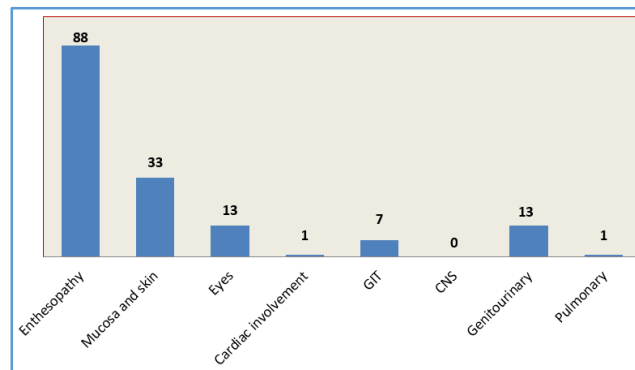


Fig. 3: System Involvement in Seronegative Spondyloarthropathies

Type	n(100)	Gender	Age of onset	Site of onset	Family history of seronegative spondyloarthritis
Ankylosing spondylitis (AS)	16	Males -13 Females -3	Average 28.15 years	Lower limb-9 Spine -7	Present in 3 cases
Psoriatic arthritis	24	Males- 17 Females- 7	20 to 40 years	Lower limbs -21 Spine – 1 Both upper and lower limbs- 2	Present in 2 cases
Enteropathic arthritis	3	Males – 1 Females-2	Average 5.5 yrs. after IBD	Lower limb-2 Spine - 1	Nil
Reactive arthritis	18	Males-11 Females-7	Average 29.6 years	Lower limbs-12 Spine-2 Upper limb -2	Nil
Undifferentiated spondyloarthritis	39	Males-31 Females-8	20 to 40 years	Lower limbs-26 Upper limbs -6 Spine-7	Present in one case

Table 1: Characteristics of various Seronegative Spondyloarthropathies

Early morning stiffness and spinal involvement was seen in all cases of AS. Enthesopathy was noted in all cases of AS with heel pain being the most common manifestation followed by plantar fasciitis and tendoachillitis. A positive Schober’s test with limited chest expansion was noted in 8 patients with longstanding definite AS. 18 out of 24 patients with psoriatic arthritis had nail changes in the form of pitting and onycholysis. All three cases of enteropathic arthritis were secondary to ulcerative colitis, oral ulcers were seen in all three and acute anterior uveitis was seen in two. All seven female patients with reactive arthritis developed the disease following urinary tract infection while of the eleven males only four gave a history of urinary tract infection and the rest had a history of diarrhoeal illness. Symmetric polyarthritis was the most common presentation of psoriatic arthritis seen in the study group.

Type (n)	Knee	Ankle	Foot	Elbow	Shoulder	Wrist	Hip	SCJ	TMJ	Small joints
Ankylosing spondylitis(16)	16	11	12	2	11	7	4	2	2	5
Psoriatic arthritis(24)	22	20	10	6	6	12	2	6	0	24
Enteropathic arthritis(3)	3	3	3	2	1	2	0	0	0	2
Reactive arthritis(18)	15	15	4	2	7	10	1	2	1	5
Undifferentiated spondyloarthritis(39)	33	31	22	11	12	23	2	6	2	8

Table 2: Peripheral Joint Involvement in various Spondyloarthropathies

Majority of patients who had low haemoglobin, were mainly having microcytic anaemia. Two main mechanisms could be occult gastrointestinal blood loss due to long term non-steroidal anti-inflammatory drug use and malnutrition. In a minority of anaemic patients, normocytic anaemia was noted. This can be probably due to longstanding inflammatory disease process in many of the patients thus leading to anaemia of chronic disease.

DISCUSSION:

	Present study	Malaviya et al⁹	Korean study¹⁰
Sex ratio	4.33:1	16:1	8.6:1
Age of onset	28.15 years	21.2 years	22.3 years
Duration of disease	9 years	8.7 years	10.8 years
Uveitis	44%	22%	19%
Knee involvement	100%	39%	92%

Table 3: Comparison of Ankylosing Spondylitis in present Study with other Studies

	Present study(n=18)		Chandrasekhar et al(n=31)	
	Enteric(n=21)	Genitourinary(n=10)	Enteric(n=4)	Genitourinary(n=14)
Sex(M:F)	18:3	8:2	4:0	7:7
Median duration(years)	0.25	0.45	1.25	1.87
Oligoarthritis	80%(17)	80%(8)	50%(2)	57%(8)
Polyarthritis	19%(4)	19%(4)	50%(2)	43%(6)
Enthesitis	43%(9)	50%(5)	50%(2)	86%(12)
Backache	48%(10)	50%(5)	50%(2)	57%(8)
Sacroiliitis	5%(1)	20%(2)	50%(2)	57%(8)
Conjunctivitis	0%(0)	10%(1)	0%(0)	14%(2)
Skin	5%(1)	10%(1)	0%(0)	7%(1)

Table 4: Comparison of Reactive Arthritis in present study with Study conducted by Chandrasekhar et al¹¹

	Korean study(1999) (n=107) Number(%)	Present study (n=39) Number(%)
Male/Female	58/49	31/8
Age at onset of disease(yrs.)	27.4	28.1
Disease duration	6.3 yrs.	5.5 yrs.
Family history of spondyloarthropathy.	12(11%)	1(2.5%)
Uveitis	14(13%)	0(0%)
Microscopic haematuria	9(8%)	0(0%)
Dactylitis	3(2%)	2(5%)
Sacroiliitis	22(21%)	23(59%)

Table 5: Comparison of Undifferentiated Spondyloarthropathy in the present Study with a Study conducted among Korean Population¹²

Psoriatic Arthritis: In various other studies,^{13,14,15,16} psoriatic arthritis was found to be preceding the diagnosis of psoriasis in about 15% of patients. In the present study, 8.3% of patients presented similarly. There was no definite relation noted between severity of psoriasis and psoriatic arthritis in the present study. A similar absent relation was noted in a study of 221 patients with psoriasis.¹⁷ In the present study, exception to the above observation was noted only in three cases where there was coexisting secondary spondyloarthropathy.

The incidence of iritis in psoriatic arthritis was around 8% cases similar to 7% incidence in previous studies.¹⁵

Other than oral ulcers in few patients, no other extra-articular manifestations such as aortic valve disease, colitis, etc., were seen in the present study.

CONCLUSION: Undifferentiated spondyloarthropathy is the most common subtype. Occurrence of ankylosing spondylitis in females is more common in North Kerala population. There is no disparity in the clinical profiles of Ankylosing spondylitis in both sexes as suggested by earlier studies in other populations. Enthesopathy is a characteristic and frequent accompaniment in this group of diseases. Upper limbs are seldom seen as site of onset of AS but

involvement of upper limbs during the course of disease is more common compared to North Indian population. In the lower limbs, knee and ankle are more commonly involved joints. Involvement of extra-articular systems other than anterior uveitis and oral ulcers is very uncommon. This was found to be true even in advanced cases. Anterior uveitis was seen mainly during the course of the disease of Ankylosing spondylitis rather than at the onset. Simultaneous involvement of both eyes is very rare. Incidence of reactive arthritis following urethritis is more common than the same following diarrhoea in this study group. Clinical evidence of sacroiliitis and conjunctivitis are more common in patients with reactive arthritis following genitourinary infection. The most common peripheral joints to involve in undifferentiated spondyloarthropathy is knee and ankle. The incidence of enthesopathy in undifferentiated spondyloarthropathy among north Kerala population is higher compared to those of North India. Psoriatic arthritis has symmetric polyarthritis as the most common form of presentation. Other than the uveitis, extra-articular manifestations are very rare in psoriatic arthritis.

The prevalence of seronegative spondyloarthropathies is on the rise among people of North Kerala. If left undiagnosed and untreated it can lead to severe impairment and crippling deformities. So early diagnosis and adequate treatment is necessary to prevent complications and to improve the quality of life of affected individuals.

LIMITATIONS: Since the study is hospital based and many of the cases seen here were either undiagnosed or referred, it may not be a sincere representation of disease in general population of North Kerala. Many cases presented with a full blown clinical picture, hence early clinical features and initial presentation could not be elucidated properly. No in-depth studies were available for North Kerala population regarding seronegative spondyloarthropathy for comparison. Further, large studies may be required for detailed evaluation of this emerging disease.

REFERENCES

- Schumacher HR, Bardin T. The spondyloarthropathies: classification and diagnosis. Do we need terminologies? *Bailliere's Clinical Rheumatology* 1998;12(4):551-565.
- Keat A. Reactive arthritis. *Advances in experimental medicine and biology* 1999;455:201-206.
- Espinoza LR, Cuellar ML, Sieleira LH. Psoriatic arthritis. *Current Opinion in Rheumatology* 1992;4(4):470-478.
- DeKeyser F, Elewaut D, Vos MD, et al. Bowel inflammation and spondyloarthropathies. *Rheumatic Diseases Clinics of North America* 1998;24(4):785-813.
- Rosenbaum JT. Acute anterior uveitis and spondyloarthropathies. *Rheumatic Diseases Clinics of North America* 1992;18(1):143-151.
- Zeidler H, Mau W, Khan MA. Undifferentiated spondyloarthropathies. *Rheumatic Diseases Clinics of North America* 1992;18(1):187-202.
- Veys EM, Mielants H, Joos R et al. Juvenile spondyloarthropathies in 1992. *Journal of Rheumatology* 1993;Suppl 37:19-25.
- Bennet PH, Burch TA. The epidemiological diagnosis of ankylosing spondylitis in population studies of the rheumatic diseases. Newyork: *Experta Medical Foundation* 1968:305-313.
- Prakash S, Mehra NK, Bhargava S, et al. Ankylosing spondylitis in north India: a clinical and immunogenetic study. *Annals of Rheumatic Diseases* 1984;43(3):381-385.
- Baek HJ, Shin KC, Lee YJ, et al. Clinical features of adult onset ankylosing spondylitis in Korean patients: patients with peripheral joint disease (PJD) have less severe spinal disease course than without PJD. *Rheumatology* 2004;43(12):1526-1531.
- Chandrashekar S, Aggarwal A, Prasad KN, et al. Sporadic reactive arthritis in north India. Lack of IgA response. *Journal of Indian Rheumatology Association* 2004;12:134-138.
- Tae-Hawn K, Lee HS, Ji JD, et al. Undifferentiated spondyloarthropathy in Korea. Focusing on peripheral arthritis. *Journal of Korean Medical sciences* 2002;17(1):71-74.
- Wright V, Moll JMH. Psoriatic arthritis. In seronegative polyarthritis. Amsterdam: North Holland publishing Co 1976:169-223.
- Kammer GM, Soter NA, Gibson DJ, et al. Psoriatic arthritis. A clinical, immunological and HLA study of 100 patients. *Seminars in Arthritis and Rheumatism* 1979;9(2):75-97.
- Gladman DD, Shuckett R, Russel ML, et al. Psoriatic arthritis on analysis of 220 patients. *Quarterly Journal of medicine* 1987;62(2):127-141.
- Jones SM, Armas JB, Cohen MG, et al. Psoriatic arthritis: outcome of disease subsets and relationship of joint disease to nail and skin disease. *British Journal of Rheumatology* 1994;33(9):834-839.
- Cohen MR, Reda DJ, Clegg DO. Baseline relationship between psoriasis and psoriatic arthritis: analysis of 221 patients with active psoriatic arthritis. Department of veteran affairs cooperative study group on seronegative spondyloarthropathies. *Journal of Rheumatology* 1999;26(8):1752-1756.