

2016 Novel Criteria for Early Classification of SpondyloArthritides

Iraj Salehi-Abari*

Associate professor, Rheumatology Research Center, Amir Alam Hospital, Tehran University of Medical Sciences, Tehran, Iran

Abstract

The SpondyloArthritides (SpA) are a group of chronic inflammatory diseases characterized by sacroiliitis, spondylitis, enthesitis, arthritis and dactylitis. They have a strong genetic background especially HLA-B27 positivity and familial aggregation. The Rheumatoid factor is usually negative in this group of diseases. Ankylosing Spondylitis (AS) is the prototype of this group and the other members are including: Reactive arthritis (formerly Reiter's syndrome), Psoriatic arthritis, Enteric (IBD-related) arthritis, Undifferentiated SpondyloArthritis and Juvenile SpondyloArthritis. Multiple classification criteria have been delivered for SpA. Some of the most important of them are including: Amor classification criteria, European Spondyloarthropathy Study Group (ESSG) classification criteria and Assessment of SpondyloArthritis international Society (ASAS) classification criteria. The author of this letter wants to deliver a new common classification criteria for all of the SpondyloArthritides presented in table A. I think classifying of SpA into axial, peripheral, non-radiographic and so on and delivery of separate classification criteria for them by ASAS can complicate the classification of SpA. For example I think non-radiographic axial SpA(nr-axSpA) is a case of Ankylosing spondylitis in early stage when the radiography cannot show sacroiliitis but by using MRI it can be detected very well.

Keywords: Spondyloarthritis; Amor Classification Criteria; ESSG Classification Criteria; ASAS Classification Criteria; Novel Criteria for Early Classification

***Corresponding Author:** Iraj Salehi-Abari, Associate professor, Rheumatology Research Center, Amir Alam Hospital, Tehran University of Medical Sciences, No 29, 6th Alley, Ghaem-magham St., P.O. Box 1586858111, Tehran, Iran; E-mail: salehiabari@sina.tums.ac.ir

Letter to Editor

The SpondyloArthritides (SpA) are a group of chronic inflammatory diseases characterized by sacroiliitis, spondylitis, enthesitis, arthritis and dactylitis. They have a strong genetic background especially HLA-B27 positivity and familial aggregation [1]. The Rheumatoid Factor (RF) is usually negative in this group of diseases. In the past, they were called Spondyloarthropathy due to axial and peripheral joint involvement and seronegative Rheumatism because of RF negativity within them. SEA syndrome and BASE syndrome were other names which sometime applied for this family of diseases.

- SEA; S: spondylitis/sacroiliitis; E: enthesitis; A: arthritis
- BASE; B: HLA-B27 positivity; A: arthritis; S: spondylitis/sacroiliitis; E: enthesitis

Sacroiliitis or inflammation of sacroiliac joints is presented as buttock pain especially alternative type [2, 3]. The physical finding of sacroiliitis is positive sacral push test. It is the tenderness of sacroiliac joints after bimanual compression of the center of sacrum when the patient is rested in prone position [4]. Spondylitis or inflammation of spine is presented as inflammatory back pain and spinal limitation of motion in all directions. Definite inflammatory back pain is a back pain with more than 3 months duration along with at least 4 items out of 5 including [5]:

- Age at onset of less than 40 years
- Insidious onset
- Improvement with activity/exercise
- No improvement with rest
- Nocturnal pain that is relieved after waking up toward midday

If the duration of the back pain is equal to 3 months or less than it or instead of at least 4 items out of 5, the presence of only 2 to 3 items are available, both induce the probable inflammatory back pain [4]. Both sacroiliitis and spondylitis can be confirmed by imaging. Radiology is low sensitive to detection of sacroiliitis and/or spondylitis in early stage of disease and after several months to several years; it can show them [6]. Sacroiliitis in radiography can be presented as narrowing, erosion, sclerosis and ankylosis of sacroiliac joints under a grading scale of 0 to 4 in which grade 0 is normal and grade 1 is suspicious. Grade 2 is mild, grade 3 is moderate and grade 4 is severe sacroiliitis [6]. The plain X-Ray of spine cannot show spondylitis until syndesmophyte formation after several months to several years [6]. The sensitivity of Magnetic Resonance Imaging (MRI) to detecting sacroiliitis can be high up to 95 percent [7]. The availability of MRI for detection of spondylitis has been under evaluation yet. However, recently a consensus (ASAS/OMERACT MRI working group) recommendation about it has been delivered, but it seems not to be useful in practice yet [8].

We think when MRI cannot resolve our problem in detection of sacroiliitis and/or spondylitis especially in subclinical cases of SPA, application of bone scintigraphy (whole body bone scan; WBS) can be helpful. It shows us the regions of inflammation regarding peripheral joints, entheses, sacroiliac joints and spine as significant increased uptake [9]. So we recommend a guideline for detection of imaging sacroiliitis and spondylitis presented in table B. Enthesitis is the inflammation of the site of insertion of ligaments, tendons, articular capsule or fascia to bone. It is usually the pathologic hallmark of the spondyloarthritis. The most common enthesitis observed in SPA is Heel enthesitis including: plantar fasciitis and Achille tendinitis. Other sites of enthesitis are including paraspinal and spinous processes, iliac crests, costochondral/sternal junctions, greater trochanters and so on [3, 10].

Arthritis in SPA is usually presented as asymmetric oligoarthritis of large joints in lower limb but small joint involvement, symmetric pattern, upper limb involvement and polyarthritis can be seen too [3]. Dactylitis or sausage digit is a cylindric swelling and erythema of a digit due to combination of arthritis and enthesitis

within a finger or toe. Dactylitis is mainly seen in SPA and sometimes it may be seen in Gout, Sarcoidosis, Tuberculosis, syphilis and sickle cell disease [11]. Indeed the cardinal manifestations of SpondyloArthritis are including: sacroiliitis, spondylitis, enthesitis, arthritis, dactylitis, Uveitis (acute anterior asymmetric), HLA-B27 positivity, family history positivity and RF-negativity. Other manifestations of SPA are including: IgA nephropathy and renal amyloidosis, Aortitis and aortic regurgitation, Ileocolitis, mucocutaneous features and so on. Ankylosing Spondylitis (AS) is the prototype of this group [12].

The other members are including:

- Reactive arthritis (formerly Reiter's syndrome): ReA
- Psoriatic arthritis : PsA
- Enteric (IBD-related) arthritis: IBD-rA
- Undifferentiated spondyloarthritis: USpA
- Juvenile spondyloarthritis: JSpA

The articular involvement of AS is essentially Axial with or without peripheral arthritis. Axial arthritis means sacroiliitis and/or spondylitis. Sacroiliitis is bilateral and symmetric in AS and spondylitis is ascending and symmetric too. The articular involvement of other members of this group can be divided into pure axial, pure peripheral, predominant axial, predominant peripheral and balanced axial/peripheral. Sacroiliitis in these members is unilateral or bilateral asymmetric. Spondylitis is not ascending and it is asymmetric with regional involvement along with skip area. Bilateral sacroiliitis is probably specific for SpA whereas unilateral sacroiliitis can be seen in Brucellosis and Tuberculosis too. The syndesmophyte is hallmark of SpA but it will be appeared too late in the radiography of spine. The syndesmophyte of AS is marginal and syndesmophyte of other members of this group is para-marginal and both are different from Osteophytes. Multiple classification criteria have been delivered for SpA. Some of the most important of them are including:

- Amor classification criteria [2]
- European Spondyloarthropathy Study Group (ESSG) classification criteria [3]
- Assessment of SpondyloArthritis international Society (ASAS) classification criteria [6]

I don't want to evaluate them. I don't want to discuss their sensitivity and specificity. I want to deliver new common criteria for early classification of the Spondyloarthritis presented in table A. I think classifying of SpA into axial, peripheral, non-radiographic and so on and delivery of separate classification criteria for them by ASAS can complicate the classification of SpA.

For example I think non-radiographic axial SpA(nr-axSpA) is a case of ankylosing spondylitis in early stage when the radiography cannot show sacroiliitis but by using MRI it can be detected very well [4]. According to this new classification criterion at first we can classify a case as a spondyloarthritis and after that we should differentiate it to individual members of this group. In the presence of IBD, Psoriasis and preceding dysentery or genitourinary infection the diagnosis are respectively IBD-rA, PsA and ReA. In the absence of above diseases; AS can be confirmed by using Iran criteria for it [4]. In the absence of IBD-rA, PsA, ReA

and AS, the final diagnosis is undifferentiated SpA (USpA). It can be a case of psoriatic arthritis sine psoriasis, psoriatic arthritis in which arthritis is preceding to psoriasis and psoriasis has not been presented yet or Reactive arthritis with subclinical/ missed preceding infection. Every case of SpA before the age of 16 can be called juvenile SpA.

Finally, the corresponding author of this letter [as the creator of 2015 ACR/SLICC Revised Criteria for Diagnosis of Systemic Lupus Erythematosus [13]; Iran criteria for early diagnosis of Rheumatoid arthritis [14], Ankylosing spondylitis [4], Granulomatosis with polyangiitis [15], Sjogren's syndrome [16], Pre-Scleroderma State [17]; 2015 Persian Gulf criteria for diagnosis of Polymyositis/Dermatomyositis [18], Relapsing polychondritis [19], Behcet's disease (20) and new criteria for diagnosis of Chondromalacia patella [21] and Pre-Rheumatoid Arthritis State [22]] would like to ask ASAS, ACR, EULAR and all of the Rheumatologists in the world to evaluate this new classification criteria of SpA. I would like to inform you we cannot evaluate it due to financial restriction, absence of proper research equipments and media.

Table A: 2016 Novel Criteria for early classification of SpondyloArthritides^a

Domain I:	
Sacroiliitis	Up to 2 points
Alternative buttock pain and positive sacral push test	1 point
Imaging sacroiliitis (grade ≥ 2)	2 points
Spondylitis	Up to 2 points
Inflammatory Back pain (definite or probable)	1 point
Lumbar limitation of motion in all directions	1 point
Imaging spondylitis	2 points
Arthritis	Up to 2 points
Seronegative asymmetric oligoarthritis of lower limb	2 points
Other patterns of arthritis	1 point
Dactylitis^b	2 points
Heel enthesitis	Up to 2 points
Plantar fasciitis	1 point
Achille tendinitis	1 point
Domain II:	
HLA-B27 positivity	1 point
Positive Family history of SpondyloArthritis	1 point
Acute Anterior Asymmetric Uveitis (AAAU)	2 points
Other patterns of Uveitis	1 point
Uveitis along with retinal vasculitis	0 point
Etiologic features	Up to 2 points
Inflammatory bowel disease or	2 points
Psoriasis or	2 points
Preceding Dysentery or Genito-urinary infection or	1 point
Behcet's disease ^c	1 point

a: We need 3 points with at least one point belonging to domain I to classify the patient as a case of SpondyloArthritis when there is not any better explanation for clinical features

b: Not better explained by other etiologies including Gout, Sarcoidosis, Tuberculosis, Syphilis, Sickle Cell disease

c: In the presence of any points of eye involvement; its point will be ignored

Table B: Amir Alam Hospital approach toward the application of imaging to detection of sacroiliitis and spondylitis.

Step I: plain X-Ray
Ia: plain antero-posterior X-Ray of pelvis
Ib: plain antero-posterior and lateral X-Ray of thoracolumbar spine ± cervical X-Ray
Step II: MRI of pelvis
Step III: The scintigraphy of bone or whole body bone scan.

References

1. Healy PJ, Helliwell PS. Classification of the spondyloarthropathies. *Curr Opin Rheumatol*. 2005; 17(4):395-9.
2. Amor B, Dougados M, Mijiyawa M. [Criteria of the classification of Spondylarthropathies]. *Rev Rhum Mal Osteoartic*. 1990; 57(2):85-9.
3. Dougados M, van der Linden S, Juhlin R, Huitfeldt B, Amor B, Calin A, et al. The European Spondylarthropathy Study Group preliminary criteria for the classification of spondylarthropathy. *Arthritis Rheum*. 1991; 34(10):1218-27.
4. Salehi-Abari I, Khazaeli S, Khak M. Early diagnosis of ankylosing spondylitis: an introduction to the newly designed Iran criteria for ankylosing spondylitis. *Rheumatol Int*. 2013; 33(5): 1303-8
5. Weisman MH. Inflammatory back pain: the United States perspective. *Rheum Dis Clin North Am*. 2012 Aug;38(3):501-12
6. Sieper J, Rudwaleit M, Baraliakos X, et al. The Assessment of SpondyloArthritis international Society (ASAS) handbook: a guide to assess spondyloarthritis. *Ann Rheum Dis* 2009; 68 Suppl 2:ii1.
7. Blum U, Buitrago-Tellez C, Mundinger A, Krause T, Laubenberger J, Vaith P, et al. Magnetic resonance imaging (MRI) for detection of active sacroiliitis--a prospective study comparing conventional radiography, scintigraphy, and contrast enhanced MRI. *J Rheumatol*. 1996 Dec;23(12):2107-15
8. Hermann KG, Baraliakos X, van der Heijde DM, et al. Descriptions of spinal MRI lesions and definition of a positive MRI of the spine in axial spondyloarthritis: a consensual approach by the ASAS/OMERACT MRI study group. *Ann Rheum Dis* 2012; 71:1278.
9. Song IH, Carrasco-Fernández J, Rudwaleit M, Sieper J. The diagnostic value of scintigraphy in assessing sacroiliitis in ankylosing spondylitis: a systematic literature research. *Ann Rheum Dis* 2008; 67:1535.
10. D'Agostino MA, Olivieri I. Enthesitis. *Best Pract Res ClinRheumatol* 2006; 20:473.
11. Healy PJ, Helliwell PS. Dactylitis: pathogenesis and clinical considerations. *Curr Rheumatol Rep* 2006; 8:338.
12. Strand V, Rao SA, Shillington AC, et al. Prevalence of axial spondyloarthritis in United States rheumatology practices: Assessment of SpondyloArthritis International Society criteria versus rheumatology expert clinical diagnosis. *Arthritis Care Res (Hoboken)* 2013; 65:1299.
13. Salehi-Abari I. 2015 ACR/SLICC Revised Criteria for Diagnosis of Systemic Lupus Erythematosus. *Autoimmune Dis Ther Approaches Open Access*. 2015;2:114.
14. Salehi-Abari I, Khazaeli S, Khak M. Early diagnosis of rheumatoid arthritis: an introduction to the newly designed Iran Criteria for Rheumatoid Arthritis. *Rheumatol Int*. 2013; 33(1): 45-50
15. Salehi-Abari I, Khazaeli S, Khak M, Motesaddi M, Hasibi M. Early diagnosis of granulomatosis with polyangiitis: an introduction to the newly designed Iran criteria for early diagnosis of granulomatosis with polyangiitis. *Indian Journal of Rheumatology*. 2013
16. Salehi-Abari I, Khazaeli S, Khak M, et al. Early Diagnosis of Sjogren's syndrome: An Introduction to the Newly Designed Iran Criteria for Early Diagnosis of Sjogren's syndrome. *Ann Orthop Rheumatol*. 2015;3(1): 1043
17. Salehi-Abari I. Pre-Scleroderma State. *Ann Orthop Rheumatol*. 2015;3(2): 1049
18. Salehi-Abari I. 2015 Persian Gulf Criteria for Early Diagnosis of Polymyositis/Dermatomyositis. *Open Science Journal of Clinical medicine*. 2015;3(5):169-172.

19. Salehi-Abari I. 2015 Persian Gulf Criteria for Early Diagnosis of Relapsing Polychondritis. Open Science Journal of Clinical Medicine.2015;3(5):166-168.
20. Salehi-Abari I. 2015 Persian Gulf Criteria for Early Diagnosis of Behcet's Disease. Open Science Journal of Clinical Medicine. 2015;3(5):188-190.
21. Salehi-Abari I, Khazaeli S, Niksirat A. Chondromalacia Patella and New Diagnostic Criteria. Open Science Journal of Clinical Medicine.2015;3(4):126-8.
22. Salehi-Abari I. Pre-Rheumatoid Arthritis State. Ann Orthop Rheumatol. 2015;3(1): 1040.