

Evaluating the ASAS recommendations for early referral of axial spondyloarthritis in patients with chronic low back pain; is one parameter present sufficient for primary care practice?

New diagnostic tools and effective treatment for axial spondyloarthritis (axSpA) became available in the last decade. This has raised the need for adequate referral strategies for patients with low back pain suspected of axSpA. However, there is no agreement on which referral strategy is best. Recently, the Assessment of SpondyloArthritis international Society (ASAS) group has published recommendations for the early referral for suspected axSpA¹ (box 1). Nonetheless, some critical remarks can be made regarding these recommendations.

First, the recommendations have been developed using a Delphi process and final voting, but they have not been tested in daily practice yet. Testing in daily practice is important since it provides measures to determine the accuracy of the recommendations, such as sensitivity and specificity. Second, no primary care specialists were involved in this Delphi process, which is remarkable as the recommendations are intended to be used in primary care. Finally, it is not clear if the chosen cut point for referral, that is, at least one parameter present in patients with low back pain aged <45 years, is the optimal cut point for primary care practice. To find the optimal cut point not only a high sensitivity or specificity, but also an acceptable level of positive predictive value (PPV) is essential. The PPV is important for daily practice; it is the proportion of patients with a positive referral recommendation who actually have axSpA.²

Box 1 The Assessment of SpondyloArthritis international Society (ASAS)-endorsed recommendations for early referral of patients suspected for having axial spondyloarthritis by primary care physicians or non-rheumatologists

- ▶ Patients with chronic low back pain (duration ≥ 3 months) with back pain onset before 45 years of age should be referred to a rheumatologist if at least one of the following parameters is present:
 - Inflammatory back pain*
 - HLA-B27 positivity
 - Sacroiliitis on imaging, if available (on X-rays or MRI)†
 - Peripheral manifestations (arthritis, enthesitis and/or dactylitis)‡
 - Extra-articular manifestations (psoriasis, inflammatory bowel disease and/or uveitis)‡
 - Positive family history for spondyloarthritis‡
 - Good response to non-steroidal anti-inflammatory drugs‡
 - Elevated acute phase reactants§

*Any set of criteria, preferably ASAS definition of inflammatory back pain.⁵

†Only if imaging is available, not recommended as routine screening parameter.

‡According to the definition applied in the classification criteria for axial spondyloarthritis.⁵

§C reactive protein serum concentration or erythrocyte sedimentation rate above upper normal limit after exclusion of other causes for elevation.

Table 1 The performance of the ASAS recommendations in a primary care CLBP population (N=941) calculated per number of SpA parameters present in a patient

Number of parameters present*	Sensitivity (%)	Specificity (%)	PPV (%)
≥ 1	100.0	18.6	22.6
≥ 2	100.0	60.1	37.6
≥ 3	66.9	86.5	54.0
≥ 4	30.4	96.5	67.0
≥ 5	9.4	98.8	65.4
≥ 6	2.8	99.6	62.5

*Parameters as described by the ASAS recommendations; inflammatory back pain; HLA-B27 positivity; sacroiliitis on imaging (X-ray or MRI); peripheral manifestations (arthritis, enthesitis, dactylitis); extra-articular manifestation (psoriasis, inflammatory bowel disease, uveitis); positive family history for SpA; good response to non-steroidal anti-inflammatory drugs; elevated acute phase reactants (ESR or CRP). ASAS, Assessment of SpondyloArthritis international Society; CLBP, chronic low back pain; CRP, C reactive protein; ESR, erythrocyte sedimentation rate; SpA, spondyloarthritis; PPV, positive predictive value.

The two recently published CaFaSpA (Case Finding Axial SpondyloArthritis) studies provide a large cohort of young primary care patients (18–45 years) with chronic low back pain (CLBP).^{3, 4} The cohort consists of 941 Dutch patients (58% female, mean age 36.0 years), who had CLBP for at least 3 months and age of back pain onset <45 years. All patients underwent a complete diagnostic work-up, which included standardised history, physical examination, HLA-B27, C reactive protein; erythrocyte sedimentation rate, X-ray and MRI of the sacroiliac joints. AxSpA was defined by the ASAS criteria.⁵

One hundred and eighty-one (19%) of the 941 patients with CLBP were identified as having axSpA. Using the ASAS recommendations, 800 of the 941 patients would be referred to the rheumatologist, resulting in a sensitivity of 100%, specificity of 19% and PPV of 23% (table 1). This means that all axSpA cases are detected by the ASAS recommendations. However, more than 80% of the referred patients do not have axSpA, which is undesirable. Using a cut point of at least two parameters also results in a sensitivity of 100%, but the specificity increases to 60% and the PPV to 38%.

We believe that these findings are valid as they were assessed in a large primary care CLBP population, in which, information of all referral parameters was available. Assuming a prior probability of 5% of axSpA in a CLBP population,⁶ the probability of having axSpA increases to 23% if there is one parameter of the ASAS recommendations present. Using the cut point of two parameters present, the probability of axSpA increases to 38%; therefore, it seems more appropriate to use the cut point of two parameters in daily practice. For a more widespread validation of referral strategies for axSpA, prospective follow-up cohorts should be set up, where the real impact of referral strategies on patients should be investigated.

L van Hoesen,^{1,2} Bart W Koes,³ Johanna MW Hazes,¹ Angelique EAM Weel^{1,2}

¹Department of Rheumatology, Erasmus MC, Rotterdam, The Netherlands

²Department of Rheumatology, Maastad Hospital, Rotterdam, The Netherlands

³Department of General Practice, Erasmus MC, Rotterdam, The Netherlands

Correspondence to L van Hoesen, Department of Rheumatology, Erasmus MC, Wytemaweg 80, Rotterdam 3015 CN, The Netherlands; l.vanhoeven@erasmusmc.nl

Funding This work was supported by an unrestricted grant from Abbvie (grant number: IMM-10-0147). Abbvie had no influence on study design, collection of data, analysis or interpretation of data.

Competing interests None declared.

Patient consent Obtained.

Ethics approval The Medical Ethical Committee of the St Elisabeth Hospital, Tilburg, the Netherlands.

Provenance and peer review Not commissioned; internally peer reviewed.

Data sharing statement All relevant data are published in the letter.



CrossMark

To cite van Hoveen L, Koes BW, Hazes JMW, *et al.* *Ann Rheum Dis* 2015;**74**:e68.

Accepted 8 September 2015

Published Online First 28 September 2015



► <http://dx.doi.org/10.1136/annrheumdis-2015-208553>

Ann Rheum Dis 2015;**74**:e68. doi:10.1136/annrheumdis-2015-208547

REFERENCES

- 1 Poddubny D, van Tubergen A, Landewé R, *et al.* Assessment of SpondyloArthritis international Society (ASAS). Development of an ASAS-endorsed recommendation for the early referral of patients with a suspicion of axial spondyloarthritis. *Ann Rheum Dis* 2015;**74**:1483–7.
- 2 Altman DG, Bland JM. Diagnostic tests 2: Predictive values. *BMJ* 1994; **309**:102.
- 3 van Hoveen L, Luime J, Han H, *et al.* Identifying axial spondyloarthritis in Dutch primary care patients, ages 20–45 years, with chronic low back pain. *Arthritis Care Res (Hoboken)* 2014;**66**:446–53.
- 4 van Hoveen L, Vergouwe Y, de Buck PD, *et al.* External validation of a referral rule for axial spondyloarthritis in primary care patients with chronic low back pain. *PLoS ONE* 2015;**10**:e0131963.
- 5 Rudwaleit M, van der Heijde D, Landewé R, *et al.* The development of Assessment of SpondyloArthritis international Society classification criteria for axial spondyloarthritis (part II): validation and final selection. *Ann Rheum Dis* 2009;**68**:777–83.
- 6 Underwood MR, Dawes P. Inflammatory back pain in primary care. *Br J Rheumatol* 1995;**34**:1074–7.