

Inflammatory Back Pain: Looking for the 'Needle in the Haystack' in Physiotherapy Services

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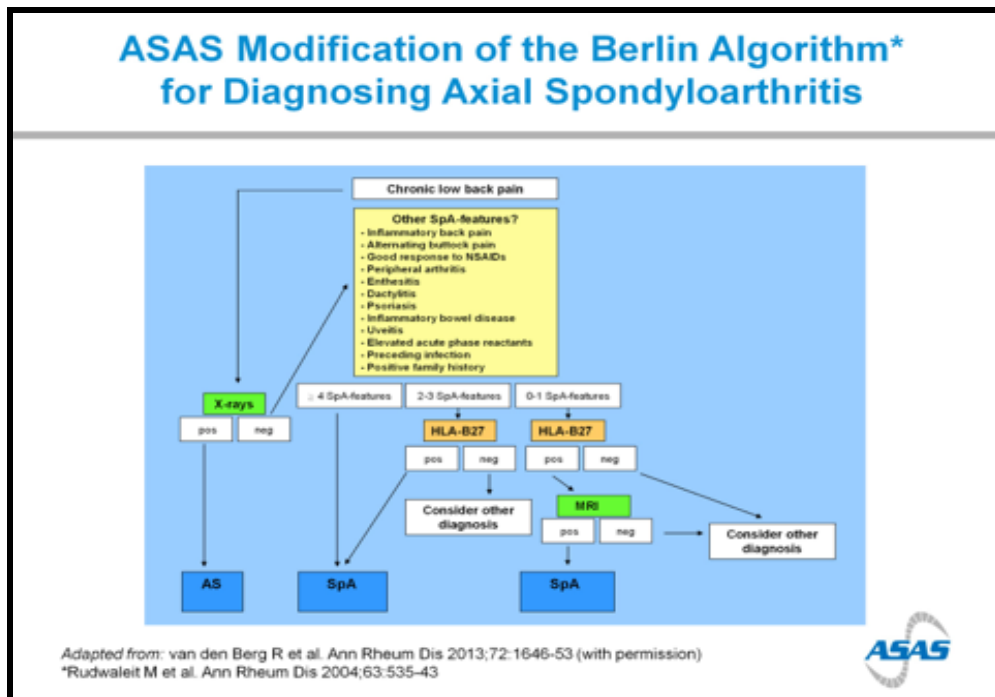
Delay to Diagnosis in Axial Spondyloarthritis

Whilst Inflammatory Back Pain (IBP) is recognised as the most common symptom of Axial Spondyloarthritis (Axial SpA) (Sieper et al, 2009), it is the equivalent of looking for a 'Needle in a Haystack' in terms of the prevalence of IBP in the chronic back pain population, reported between 3-13% (Hamilton et al, 2014; Underwood, 1995). Given that Axial SpA has a prevalence of 0.3-1.2% in the UK population (Hamilton et al, 2015) and general practitioners (GPs) awareness of the disease is reported to be low (Jois et al, 2008), diagnostic delay remains a major problem. Promisingly, Sykes et al (2015) reported a 51% increase in new diagnoses since 2009 of those attending two large secondary care centres in the UK, though with a mean diagnostic delay of 8.5 years. The median delay in diagnosis was two years and >50% were diagnosed within 5 years of symptom onset. These figures are similar to those reported by Feldtkeller et al (2003) and Hamilton et al (2011), suggesting that despite the apparent trends in the number of patients being diagnosed, the challenge of diagnosing Axial SpA early remains with patients potentially being denied effective timely treatment.

The Needle and The Haystack

As Axial SpA is associated with an insidious onset with no specific diagnostic test in the early stages, diagnosis (The Needle) is frequently fraught with error as there is often an evolving and incomplete clinical history at first presentation (The Haystack). Diagnostic delay may in part be due to the inability to differentiate IBP from mechanical back pain seen frequently in primary care. There is an identified need for Physiotherapists to reason the specificity of their questioning when a cluster of SpA features exist (The Haystack) and to consider the probability of Axial SpA (The Needle) in line with International Assessment of Spondyloarthritis Society (ASAS) diagnostic criteria (Figure 1) (Van Den Berg et al, 2013). Applying the logic of a diagnostic algorithm may be helpful to less experienced clinicians, however their use offer only diagnostic certainty of definite, probable or possible. With a lack of unique and specific assessment tests in early disease, the trade-off between sensitivity and specificity of screening tools (such as the ASAS criteria for IBP; sensitivity 79%; Sieper et al, 2009) is an important consideration in clinical practice. In the absence of a gold-standard, the use of expert defined criteria appears justified and is an important message to disseminate across physiotherapy services.

Figure 1: ASAS Diagnostic Algorithm for Axial Spondyloarthritis



Screening for Inflammatory Back Pain

The ASAS expert criteria for recognizing IBP (back pain history greater than 3 months) have been widely recommended as a simple screening tool in general practice, with 4 out of 5 ‘yes’ responses warranting a referral to rheumatology (Figure 2).

Figure 2: ASAS Inflammatory Back Pain Screening Tool

1.	Did your back pain start when you were aged 40 or under?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.	Did your back pain develop gradually?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3.	Does your back pain improve with exercise?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.	Do you find there is no improvement in your back pain when you rest?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5.	Do you suffer from back pain at night which improves upon getting up?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Does HLA-B27 status influence presentation of Axial Spondyloarthritis?

Significant variations in presentations have been identified between those with HLA-B27+ compared to HLA-B27-, including average age at diagnosis (33.2 and 39.1 years respectively), average diagnosis delay (8.5 and 11.4 years respectively), with the distribution of age at disease onset and percentage of late onset being significantly greater in B27- (Feldtkeller et al, 2003). Together with the increased prevalence of uveitis and first-degree relatives with AS in the HLA-B27+ population, HLA-B27 testing is included in the ASAS consensus statement (figure 3) for early referral (Poddubnyy et al, 2015). The clinical reality is HLA-B27 status as a screening tool has been used in primary care with caution and often in combination with a clinical screening tool (Braun et al, 2013). Despite the high sensitivity (90%), the cost and potential for error in interpretation of false negative results means testing in general practice is not routine.


Figure 3: ASAS Recommendations for Early Referral to a Rheumatologist

ASAS Endorsed Recommendations for Early Referral of Patients Suspected for Axial Spondyloarthritis

Patients with **chronic back pain (duration ≥ 3 months)** and **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 (X-rays or magnetic resonance imaging);
- Peripheral manifestations (arthritis, enthesitis, dactylitis);
- Extra-articular manifestations (psoriasis, inflammatory bowel disease, uveitis);
- Positive family history for SpA;
- Good response to non-steroidal anti-inflammatory drugs;
- Elevated acute phase reactants.

Poddubnyy D, et al. Ann Rheum Dis 2015;74:1483-7



Gender Differences in Axial Spondyloarthritis

Associated with the challenge of diagnosis is the historical perception of Radiographic Axial Spondyloarthritis i.e Ankylosing Spondylitis being a predominantly male disease. Together with gender differences at presentation (Table 1), 50% of non-radiographic Axial SpA affect females (Rudwaleit et al, 2009) with plain radiographs having a questionable role in females, especially in early disease. Consequently, gender differences are seen in diagnostic delay (Roussou & Sultana, 2011) with females with Axial SpA and widespread pain experiencing almost twice as long a delay time to diagnosis in comparison to women without widespread pain (Slobodin et al, 2011).

Table 1: Gender Differences in Axial Spondyloarthritis

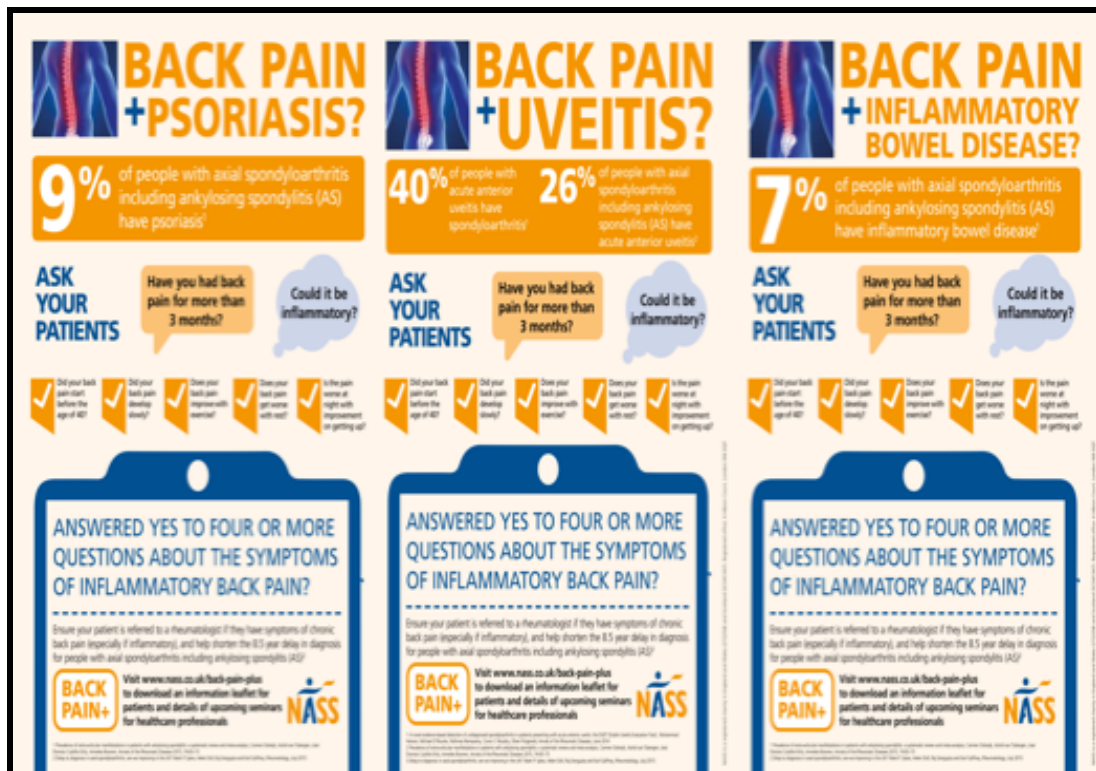
Characteristics	Age at presentation	Disease duration	Delay to diagnosis	Neck pain	Knee/hip pain	Foot pain	IBP	Sleep disturbance
Male						↑	=	
Female	↑	↑	↑	↑	↑		=	↑
Characteristics	Occiput to wall	Heel pain	Pelvic pain	Widespread pain	Night pain	Worse well-being	Higher mean ESR/CRP	Higher mean BASDAI/BASFI
Male	↑							
Female		↑	↑	↑	↑	↑	↑	↑

Roussou E & Sultana S. (2011); Slobodin G et al (2011)

NASS Education Initiatives

Having launched the ‘Meeting in a Box’ Education programme nationally for GPs in 2013, The National Ankylosing Spondylitis Society (NASS) have identified a further educational priority with the launch of the ‘**Back Pain Plus**’ awareness campaign in 2016 aimed at ophthalmologists, dermatologists and gastroenterologists. The focus of the campaign is to reduce delay in diagnosis by targeting people attending secondary care clinics associated with potentially undiagnosed Axial Spondyloarthritis (figure 3).

Figure 3: Advertising Campaign for Early Recognition of IBP in Secondary Care



Posters are available to download free at: www.nass.co.uk

Physiotherapists as Educators

With the advent of first contact practitioner roles, physiotherapists have a unique opportunity and professional responsibility to consider for each case of chronic back pain the possibility of IBP, which may contribute to earlier recognition of disease, especially in females. Therefore, greater understanding of pattern recognition of the clinical features with the use of appropriate screening tools and investigations is a priority for physiotherapists in order to lead the education of primary care practitioners and peers in the improvement drive to earlier recognition of Axial Spondyloarthritis.

Conclusion

Axial Spondyloarthritis has a prevalence of 0.3-1.2% in the UK population (Hamilton et al, 2015) and Inflammatory Back Pain is the most common presenting symptom. However, delay to diagnosis remains a clinical reality and has not yet improved (Sykes et al, 2015), despite attempts to raise awareness of IBP in primary care. The challenge for physiotherapists is to consider a reasonable application of recognized screening tools and diagnostic criteria to support early recognition of IBP and onward referral to a Rheumatologist. Exciting new roles for physiotherapists in primary care offer opportunities to lead the education of peers and fellow healthcare professionals in order to address the issue.

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