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Delay to diagnosis in axial spondyloarthritis: the gap is closing, but persistent association with severe disease

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Background:
Despite increased awareness, diagnostic delay in axial spondyloarthritis (axSpA) presents a challenge in the management of the condition. Reducing the gap between symptom onset and time of diagnosis is needed to minimise morbidity and mortality. Our aim was to assess if delay to diagnosis has reduced in individuals with a more recent onset of disease.

Methods:
The Ankylosing Spondylitis Registry of Ireland (ASRI) provided the cohort for this study based on descriptive epidemiological data on the Irish axSpA population. Delay to diagnosis was calculated as age at diagnosis minus age at symptom onset. Validated outcome measures were collected: Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath AS Functional Index (BASFI), Health Assessment Questionnaire (HAQ), AS Quality of Life (ASQoL), and Bath AS Metrology Index (BASMI).

Results:
886 patients were included, 644 were male (73%), mean age 46 years (SD 13) and 76% (n=667) fulfilled modified New York (mNY) criteria(Table 1).

Mean (SD) disease duration was 19 (12) years, with 27% having a duration of < 10 years, 32% between 10-20 years and 42% over 20 years. Median delay to diagnosis was 5 years (2, 11), with 51% (n=444) diagnosed within 5 years, 22% (n=192) diagnosed between 5-10 years and 27% (n=232) diagnosed > 10 years from symptom onset. The median delay to diagnosis has reduced significantly (<0.01) in recent years (see Figure 1).

Factors associated with a shorter delay to diagnosis include smoking (6.7 vs 8.9 years, p<0.01), peripheral arthritis (7.0 vs 8.4 years, p=0.02) and absence of sacroiliitis radiographically (6.5 vs 8.4 years, p=0.03). HLA-B27 status and gender had no impact on delay to diagnosis.
When compared to a delay of <5 years, individuals with a delay to diagnosis > 10 years had significantly higher BASMI (4.7 vs 4.0, p=0.01) and BASFI (4.8 vs 3.8, p=0.02) scores, with no difference in BASDAI (4.1 vs 3.9, p=0.6).

Conclusion:
Delay to diagnosis has reduced in individuals with a more recent diagnosis of axSpA. Longer delays to diagnosis are associated with more severe disease in this cohort, indicating a significant unmet need in the management of axSpA.

Table 1: Baseline demographic and clinical characteristics:

Age, mean (SD)	45.9 (12.6)
Female, n (%)	232 (26.2)
Smoker, n (%)	503 (56.8)
HLA-B27 positive, n (%)	602 (67.9)
Disease duration, median (25^{th},75^{th})	17.1 (9.5, 27.8)
Delay to diagnosis, median (25^{th},75^{th}) • 0-5 years, n (%) • 5-10 years, n (%) • >10 years, n (%)	5 (2.0, 11.0) • 444 (50.1) • 192 (21.7) • 232 (26.2)
AAU, n (%)	297 (33.5)
PsO, n (%)	144 (16.3)
IBD, n (%)	91 (10.3)
BASMI, mean (SD)	4.0 (2.1)
BASFI, mean (SD)	3.7 (2.9)
BASDAI, mean (SD)	4.0 (2.4)
HAQ, median (25^{th}, 75^{th})	0.38 (0.0, 0.75)
ASQoL, mean (SD)	6.5 (5.5)

Figure 1: