Prevalence and impact of fibromyalgia on disease outcomes and treatment in axial spondyloarthritis: 10-year follow-up data from the DESIR cohort

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BACKGROUND

Fibromyalgia (FM) has been reported as common, affecting approximately 20% of patients with axial spondyloarthritis (axSpA). It may be considered either as a differential diagnosis or a comorbidity of axSpA. FM can be suspected using the Fibromyalgia Rapid Screening Tool (FiRST).

OBJECTIVES

To evaluate the prevalence of suspected FM using the FiRST questionnaire and its impact on the disease, including 1) first TNFi initiation and retention rates, 2) Patient-Reported Outcomes (PROs) and disability, over the first 10 years of follow-up in patients with axSpA from the DESIR cohort.

METHODS

Patients: Patients diagnosed with axSpA by a rheumatologist for less than 3 years and included in the DESIR cohort.
Collected data: The FiRST tool became available starting from the seventh year (M84) and was then administered annually until year 10 (M120). Statistical analysis:

a) *Estimation of FM prevalence.* The percentage of FM+ patients was estimated for the entire cohort (n=708). Missing data were imputed using multiple imputation for longitudinal data at each of the four visits (M84 to M120). A patient was classified as FM+ if he/she was identified as FiRST+ at least twice during the four visits (M84-M120) after multiple imputation.
b) *Impact of FM:* This analysis excluded 45 patients (out of the 708 enrolled patients) who discontinued follow-up in the cohort due to a diagnosis other than axSpA (n=663). The impact of FM was assessed as follows: b.1.) at the start of the cohort (visit M0): by comparing objective signs of axSpA; b.2.) over the 10 years of follow-up: by analysing disease activity and disability using mixed models for repeated measures; b.3.) therapeutic impact: by evaluating the percentage of patients treated with a first TNFi and their therapeutic maintenance using Kaplan-Meier analyses.

RESULTS

Table 1. Baseline characteristics according to the presence of fibromyalgia.

	FM- N = 519	FM+ N = 144	p-value
Sex (female)	253 (48.8%)	52 (36.1%)	0.007
Age, mean (SD)	32.9 (8.5)	36.1 (8.6)	<0.001
University education	353 (68.7%)	36 (25.0%)	<0.001
Smoking (ever)	179 (34.7%)	66 (47.1%)	0.007
Symptoms duration, mean (SD)	1.5 (0.9)	1.4 (0.8)	0.117
HLA-B27 positive	329 (63.6%)	63 (43.8%)	<0.001
Positive MRI-SIJ according to ASAS definition	190 (37.6%)	43 (30.3%)	0.107
Positive radiographic sacroiliitis (local reader)	96 (19.0%)	15 (10.5%)	0.017
ASAS or ESSG or AMOR criteria	479 (93.4%)	134 (93.1%)	0.852
Peripheral arthritis (ever)	135 (26.3%)	54 (37.5%)	0.009
Any peripheral enthesitis (ever)	271 (52.3%)	100 (69.4%)	<0.001
Heel enthesitis (ever)	197 (41.0%)	78 (59.1%)	<0.001
Dactylitis (ever)	68 (13.2%)	28 (19.4%)	0.061
Uveitis (ever)	53 (10.2%)	11 (7.6%)	0.352
Inflammatory bowel disease (ever)*	25 (4.8%)	10 (6.9%)	0.299
Psoriasis	74 (14.3%)	41 (28.5%)	<0.001
Abnormal CRP (>5mg/dL)	146 (29.1%)	46 (32.9%)	0.396
NSAID-ASAS score (6 months), mean (SD)	46.2 (41.4)	44.5 (38.6)	0.663
csDMARDs intake during the last 6 months	76 (14.7%)	17 (11.8%)	0.377
BASDAI, mean (SD)	41.3 (20.3)	55.3 (15.8)	<0.001
BASFI, mean (SD)	27.0 (22.0)	42.5 (21.9)	<0.001
SF-36 MCS, mean (SD)	41.4 (11.3)	36.4 (9.7)	<0.001
SF-36 PCS, mean (SD)	40.7 (9.5)	34.6 (7.7)	<0.001
Days of sick leave, mean (SD)	25.8 (60.9)	55.2 (86.1)	<0.001
Disability	2 (0.4%)	4 (2.8%)	0.022
Level of confidence in SpA diagnosis (0-10)	7.1 (2.5)	6.9 (2.6)	0.325

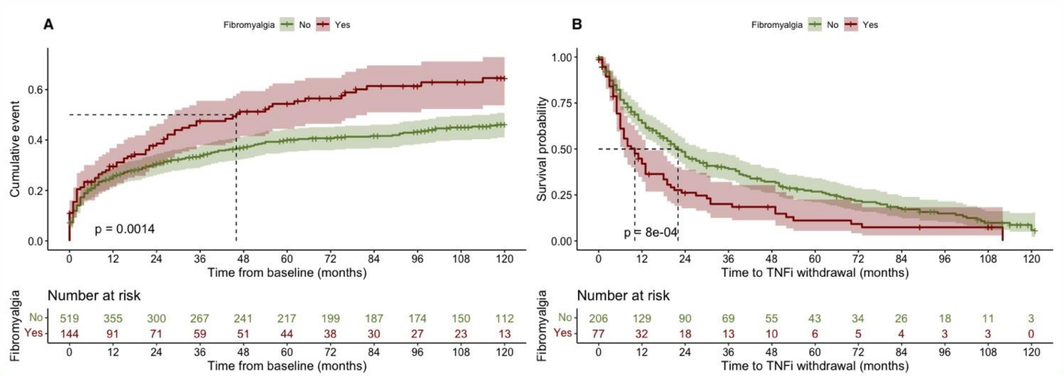
After the multiple imputation of visits M84 to M120, the estimated prevalence of FM+ patients was 144/663 (21.7%, 95%CI 18.6-25.1).

Table 2. Mixed models for Repeated Measures with random effects to compare disease activity and PROs over 10 years of follow-up between FM+ and FM-.

	FM- N = 519 Mean (SD) over 10 years	FM+ N = 144 Mean (SD) over 10 years	P-value: crude MMRM	p-value: MMRM adjusted for TNFi intake ever
BASDAI (0-100)	31.1 (20.1)	50.3 (19.7)	**<0.001**	**<0.001**
BASDAI Q1 (0-10)	4.5 (2.6)	6.3 (2.2)	**0.020**	**0.028**
BASDAI Q2 (0-10)	3.7 (2.5)	5.8 (2.3)	**0.015**	**0.009**
BASDAI Q3 (0-10)	1.9 (2.3)	3.8 (2.7)	**0.006**	**0.003**
BASDAI Q4 (0-10)	2.6 (2.7)	4.8 (2.6)	**<0.001**	**0.002**
BASDAI (Q5+Q6)/2 (0-10)	2.9 (2.3)	4.5 (2.4)	**<0.001**	**<0.001**
ASDAS (0-6)	2.0 (0.9)	2.8 (0.9)	**0.001**	**<0.001**
BASFI (0-100)	19.3 (19.3)	39.6 (22.3)	**<0.001**	**<0.001**
SF-36 MCS (0-100)	45.5 (10.6)	38.2 (11.1)	**<0.001**	**<0.001**
SF-36 PCS (0-100)	44.0 (9.5)	35.8 (8.6)	**<0.001**	**<0.001**
Days of sick leave	15.6 (49.7)	42.8 (81.6)	0.844	0.732

ASDAS: Axial Spondyloarthritis Disease Activity Score; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; BASFI: Bath Ankylosing Spondylitis Function Index; MM: Mixed Model for Repeated Measures; SF36-MCS: Mental Component Score from the SF-36 questionnaire; SF36-PCS: Physical Component Score from the SF-36 questionnaire; SD: Standard Deviation; TNFi: Tumour Necrosis Factor inhibitors.

Figure 2. Impact of concomitant FM on the probability of TNFi initiation (A) and on the retention rate to the first TNFi (B).



CONCLUSIONS

- This study confirms the high prevalence of FM in axSpA.
- The similarity of certain objective disease markers (such as MRI-SIJ positivity and abnormal CRP levels) between FM+ vs. FM- patients, as well as the comparable diagnostic confidence, suggests that fibromyalgia is more likely a comorbidity than a diagnostic error.
- The presence of FM negatively impacts disease activity scores and quality of life, resulting in a higher likelihood of permanent disability.
- FM is also associated with an increased likelihood of initiating biologic therapy; however, therapeutic maintenance is lower in these patients.

DESIR
DEVENIR DES SPONDYLARTHROPATHIES INDIFFERENCIEES RECENTES

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