

## Supplementary material

**Supplementary Table S1** Countries in each geographical region, including the number of patients diagnosed with axial spondyloarthritis per country analysed in this study (n=2,675)

Region	Countries
<b>Asia</b>	China (161), Taiwan (153), India (139), South Korea (113), Japan (31)
<b>Europe &amp; North America</b>	Germany (222), France (226), Spain (148), Portugal (116), Romania (97), Hungary (71), USA (46), the Netherlands (39), Italy (32), Canada (12), United Kingdom (0)
<b>Latin America</b>	Mexico (138), Argentina (73), Chile (25), Colombia (21)
<b>Middle East &amp; North Africa</b>	Turkey (356), Morocco (213), Lebanon (122), Egypt (121)

**Supplementary table S.2** Percentage of missing data regarding a positive family history per SpA-entirety for axSpA patients, stratified by degree of familial relationship

n=2,129	First generation relative	Second generation relative
<b>axSpA, n(%)</b>	64 (3)	128 (6)
<b>Uveitis, n(%)</b>	94 (4)	147 (7)
<b>Psoriasis, n(%)</b>	61 (3)	126 (6)
<b>IBD, n(%)</b>	100 (5)	157 (7)
<b>ReA, n(%)</b>	105 (5)	157 (7)

axSpA, axial spondyloarthritis; IBD, Inflammatory Bowel Disease; ReA, reactive arthritis

**Supplementary Table S3** Characteristics of axial spondyloarthritis patients in the ASAS-PerSpA cohort with known HLA-B27 status and family history, stratified by geographical region

	Total n=2,048	Asia n=545	Europe & North America n=840	Latin America n=202	Middle East & North Africa n=461
<b>Age, median (IQR)</b>	40 (31-50)	34 (26-44)	44 (34-53)	42 (33-52)	39 (31-48)
<b>Female</b>	638 (31%)	109 (20%)	303 (36%)	61 (30%)	165 (36%)
<b>Disease duration (yrs), median (IQR)</b>	11 (5-20)	8 (3-16)	14 (7-24)	13 (5-19)	9 (4-16)
<b>HLA-B27 positive</b>	1,609 (79%)	487 (89%)	658 (78%)	164 (81%)	300 (65%)
<b>IBP ASAS definition<sup>d</sup></b>	1,915 (94%)	485 (89%)	798 (95%)	195 (97%)	437 (95%)
<b>Positive family history for SpA</b>	780 (38%)	168 (31%)	337 (40%)	59 (29%)	216 (47%)
<b>Peripheral arthritis</b>	891 (44%)	289 (53%)	314 (37%)	142 (70%)	146 (32%)
<b>Enthesitis</b>	908 (44%)	287 (53%)	315 (38%)	144 (71%)	162 (35%)
<b>Dactylitis</b>	122 (6%)	45 (8%)	36 (4%)	27 (13%)	14 (3%)
<b>Uveitis</b>	487 (24%)	135 (25%)	214 (25%)	68 (34%)	70 (15%)
<b>Psoriasis</b>	171 (8%)	22 (4%)	114 (14%)	5 (2%)	30 (7%)
<b>IBD</b>	90 (4%)	6 (1%)	57 (7%)	8 (4%)	19 (4%)
<b>Elevated CRP</b>	1,405 (69%)	401 (74%)	546 (65%)	155 (77%)	303 (66%)
<b>Sacroiliitis on radiographs<sup>e</sup></b>	1,515 (74%)	462 (85%)	582 (69%)	135 (67%)	336 (73%)
<b>Sacroiliitis on MRI<sup>f</sup></b>	1,160 (81%) <sup>c</sup>	240 (77%) <sup>c</sup>	476 (76%) <sup>c</sup>	110 (83%) <sup>c</sup>	334 (92%) <sup>c</sup>
<b>Number of SpA features, mean <math>\pm</math> SD<sup>f</sup></b>	3 (2)	4 (1)	3 (2)	4 (1)	3 (2)
<b>LoC regarding axSpA diagnosis, mean <math>\pm</math> SD</b>	8 (3)	7 (3)	8 (3)	7 (4)	8 (3)
<b>Use of NSAIDs</b>	1,879 (99%) <sup>a</sup>	445 (99%) <sup>a</sup>	823 (99%)	194 (99%)	417 (99%) <sup>b</sup>
<b>Use of bDMARDs</b>	609 (32%)	180 (40%) <sup>b</sup>	194 (23%)	111 (57%)	124 (29%) <sup>a</sup>

Results are presented as n (%) unless specified otherwise.

<sup>a</sup> 5-10% missing values, <sup>b</sup> 10-20% missing values, <sup>c</sup> 20-40% missing values; <sup>d</sup> 4 out of 5 of the following features: onset before the age of 40, insidious onset, improvement with exercise, no improvement with rest, pain at night(21); <sup>e</sup> Based on reading of local radiologists; <sup>f</sup> Excluding HLA-B27 status and sacroiliitis on imaging.

**ASAS**, Assessment of SpondyloArthritis international Society; **axSpA**, axial spondyloarthritis; **bDMARD**, biological Disease Modifying Anti-Rheumatic Drug; **CRP**, C-reactive protein; **HLA-B27**, Human Leucocyte Antigen B27; **IBD**, Inflammatory Bowel Disease; **IBP**, Inflammatory Back Pain; **IQR**, interquartile range; **LoC**, Level of Confidence regarding diagnosis; **MRI**, Magnetic Resonance Imaging; **NSAIDs**, Non-Steroidal Anti Inflammatory Drugs; **ReA**, reactive arthritis; **SD**, standard deviation; **SpA**, Spondyloarthritis.