ORIGINAL RESEARCH

Real-World Sarilumab Use and Rule Testing to Predict Treatment Response in Patients with Rheumatoid Arthritis: Findings from the RISE Registry

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Supplementary Material

Figure S1: Association between CRP and CDAI in sarilumab-treated patients

CDAI, Clinical Disease Activity Index; CRP, C-reactive protein

Figure S2: Association between CRP and CDAI in sarilumab-treated patients with CRP <40 mg/L

a) CDAI at follow-up

b) Change of CDAI at follow-up

CDAI, Clinical Disease Activity Index; CRP, C-reactive protein

Table S1: Characteristics of sarilumab initiators at different time points relative to FDA approval

	Years of sarilumab initiation				*P*-value
	2017	2018	2019	2020	
N	304	1237	1217	191	-
Age (years), mean ± SD	56.5 (10.3)	55.0 (11.9)	55.8 (12.5)	57.6 (12.5)	0.06
Women	249 (81.9)	1029 (83.2)	1007 (82.7)	162 (84.8)	-
Race					0.58
White	221 (72.7)	897 (72.5)	863 (70.9)	126 (66.0)	
Black/African American	16 (5.3)	110 (8.9)	119 (9.8)	26 (13.6)	
Other/Missing	67 (22.0)	230 (18.6)	235 (19.3)	39 (20.4)	
Ambulatory visits, mean ± SD[a]	18.6 (20.9)	13.9 (13.8)	14.5 (14.7)	15.6 (15.5)	0.05
CDAI score (*n* = 725), median (25th, 75th)	22.0 (14.0, 29.0)	18.5 (12.0, 28.0)	19.0 (11.5, 28.5)	19.8 (13.5, 28.5)	0.28
CDAI category at baseline (*n* = 919)					0.20
High	31 (35.2)	136 (33.8)	117 (31.8)	22 (36.1)	
Moderate	39 (44.3)	146 (36.3)	126 (34.2)	28 (45.9)	
Low	14 (15.9)	91 (22.6)	97 (26.4)	7 (11.5)	
Remission	4 (4.6)	29 (7.2)	28 (7.6)	4 (6.6)	
RAPID3 score (*n* = 990), median (25th, 75th)	12.7 (7.5, 18.3)	14.8 (8.7, 19.5)	14.8 (10.0, 19.8)	15.0 (9.3, 19.0)	0.13
RAPID3 category at baseline (*n* = 1450)					0.96
High	74 (54.8)	396 (59.2)	337 (60.3)	55 (63.2)	
Moderate	35 (25.9)	163 (24.4)	124 (22.2)	18 (20.7)	
Low	15 (11.1)	64 (9.6)	54 (9.7)	9 (10.3)	
Remission	11 (8.2)	46 (6.9)	44 (7.9)	5 (5.8)	
RA-related characteristics					
Current/recent MTX use[a]	117 (38.5)	482 (39.0)	452 (37.1)	74 (38.7)	0.82
History of MTX use	206 (67.8)	795 (64.3)	787 (64.7)	116 (60.7)	0.45
csDMARD use in history count, mean ± SD	1.6 (1.1)	1.5 (1.0)	1.5 (1.0)	1.5 (1.1)	0.19
History of TNFi use	216 (71.1)	875 (70.7)	839 (68.9)	124 (64.9)	0.35
History of b/tsDMARDs	275 (90.5)	1101 (89.0)	1068 (87.8)	164 (85.9)	0.33
Non-TNFi use in history count, mean ± SD	1.0 (1.0)	0.8 (0.9)	0.7 (0.8)	0.7 (0.9)	<0.01
History of tocilizumab use	143 (47.0)	409 (33.1)	351 (28.8)	49 (25.7)	<0.01
History of non-TNFi or JAKi count, mean ± SD	1.5 (1.3)	1.2 (1.1)	1.2 (1.1)	1.2 (1.1)	0.01
History of biologics (TNFi, non-TNFi, JAKi) count, mean ± SD	2.7 (2.1)	2.4 (1.8)	2.4 (1.8)	2.4 (1.9)	0.16

	Years of sarilumab initiation				*P*-value
	2017	2018	2019	2020	
Current/recent oral steroid use[a]	178 (58.6)	738 (59.7)	699 (57.4)	121 (63.4)	0.40
Current/recent opioid use[a]	70 (23.0)	256 (20.7)	174 (14.3)	32 (16.8)	<0.01
RF positive (n = 997)[b]	65 (21.4)	235 (19.0)	214 (17.6)	40 (20.9)	0.04
MDHAQ at baseline (n = 427), mean ± SD	0.26 (0.38)	0.38 (0.36)	0.39 (0.41)	0.47 (0.30)	0.03
CRP at/around index date (n = 1189), mg/L, mean ± SD[a]	9.5 (12.6)	11.6 (22.2)	11.1 (20.6)	12.9 (17.9)	0.10
Comorbidities and indices					
Diabetes diagnosis/ medication/laboratory results in history	41 (13.5)	172 (13.9)	183 (15.0)	38 (19.9)	0.16
COPD diagnosis in history	5 (1.6)	25 (2.0)	20 (1.6)	4 (2.1)	0.90
Hypertension diagnosis in history	43 (14.1)	139 (11.2)	138 (11.3)	28 (14.7)	0.29
RDCI in history, mean ± SD	0.56 (1.13)	0.49 (0.98)	0.47 (0.96)	0.69 (1.18)	0.04
Rx Risk count in history, mean ± SD[c]	9.6 (4.7)	8.9 (4.7)	9.0 (4.9)	9.8 (5.1)	0.02
Elixhauser in history, mean ± SD	1.9 (1.3)	1.6 (1.1)	1.6 (1.2)	1.8 (1.4)	<0.01

All the numbers in the table are n (%) unless indicated otherwise.

[a]Measured at the 12-month period prior to sarilumab initiation

[b]Denominator includes RF positive, negative, and missing. If excluding missing, the percentages would be 51.6, 56.1, 56.0, and 57.1% for 2017, 2018, 2019, and 2022, respectively (p = 0.82)

[c]Comorbidity based on prescription use

b/tsDMARD, biologic/targeted synthetic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; COPD, chronic obstructive pulmonary disease; CRP, C-reactive protein; csDMARD, conventional synthetic disease-modifying antirheumatic drug; FDA, Food and Drug Administration; JAKi, Janus kinase inhibitor; MDHAQ, Multidimensional Health Assessment Questionnaire; MTX, methotrexate; RA, rheumatoid arthritis; RDCI, Rheumatic Disease Comorbidity Index; RAPID3, Routine Assessment of Patient Index Data 3; RF, rheumatoid factor; Rx, prescription; SD, Standard deviation; TNFi, tumor necrosis factor inhibitors

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Table S2: Baseline demographic and clinical characteristics in Cohorts A, B, and C for change in CDAI in month 6 (±3) compared to index date

		Cohort A	Cohort B	Cohort C
Number of patients	*N*	545	330	439
Age (years)	Mean ± SD	56.0 (11.6)	56.8 (11.9)	53.7 (11.4)
Sex	Male	94 (17.2)	54 (16.4)	89 (20.2)
	Female	451 (82.8)	276 (83.6)	350 (79.8)
Race	Black	40 (7.3)	29 (8.8)	45 (10.3)
	White	377 (69.2)	224 (67.9)	296 (67.3)
	Other/missing	128 (23.5)	77 (23.3)	99 (22.4)
Index year	2017	71 (13.0)	49 (14.8)	84 (19.2)
	2018	280 (51.4)	167 (50.6)	258 (58.8)
	2019	194 (35.6)	114 (34.5)	96 (22.0)
Seropositive	Positive	192 (35.2)	107 (32.4)	157 (35.9)
	Negative	84 (15.4)	42 (12.7)	50 (11.4)
	Missing	269 (49.4)	181 (54.8)	232 (52.7)
CDAI at index date	Mean ± SD	21.0 (12.4)	23.6 (11.9)	30.9 (16.6)
csDMARD at 1-year baseline	Yes	319 (58.5)	177 (53.6)	231 (52.7)
MTX at 1-year baseline	Yes	190 (34.9)	111 (33.6)	146 (33.2)
History of TNFi	Yes	388 (71.2)	228 (69.1)	272 (62.0)
History of JAKi	Yes	240 (44.0)	161 (48.8)	185 (42.2)
History of non-TNFi bDMARDs	Yes	288 (52.8)	180 (54.5)	242 (55.1)
Rx of oral steroid at 1-year baseline	Yes	312 (57.2)	191 (57.9)	269 (61.3)
Rx of opioid at 1-year baseline	Yes	94 (17.2)	53 (16.1)	59 (13.4)

All the numbers in the table are *n* (%) unless indicated otherwise
bDMARD, biologic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; JAKi, Janus kinase inhibitors; MTX, methotrexate; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

Table S3: Baseline demographic and clinical characteristics in Cohorts A, B, and C for change in CDAI in month 12 (±3) compared to index date

		Cohort A	Cohort B	Cohort C
Number of patients	*N*	326	204	341
Age (years)	Mean ± SD	55.9 (11.4)	56.8 (11.4)	54.0 (10.7)
Sex	Male	58 (17.8)	36 (17.6)	73 (21.5)
	Female	268 (82.2)	168 (82.4)	268 (78.5)
Race	Black	19 (5.8)	14 (6.9)	29 (8.4)
	White	233 (71.5)	147 (72.1)	237 (69.5)
	Other/missing	74 (22.7)	43 (21.1)	76 (22.1)
Index year	2017	56 (17.2)	40 (19.6)	78 (22.9)
	2018	227 (69.6)	141 (69.1)	229 (67.0)
	2019	43 (13.2)	23 (11.3)	34 (10.1)
Seropositive	Positive	119 (36.5)	67 (32.8)	125 (36.7)
	Negative	57 (17.5)	31 (15.2)	39 (11.4)
	Missing	150 (46.0)	106 (52.0)	177 (51.9)
CDAI at index date	Mean ± SD	21.1 (12.9)	23.9 (12.6)	31.6 (17.2)
csDMARD at 1-year baseline	Yes	195 (59.8)	113 (55.4)	182 (53.4)
MTX at 1-year baseline	Yes	115 (35.3)	72 (35.3)	115 (33.6)
History of TNFi	Yes	237 (72.7)	144 (70.6)	218 (63.8)
History of JAKi	Yes	137 (42.0)	96 (47.1)	137 (40.0)
History of non-TNFi bDMARDs	Yes	183 (56.1)	117 (57.4)	197 (57.6)
Rx of oral steroid at 1-year baseline	Yes	188 (57.7)	118 (57.8)	203 (59.5)
Rx of opioid at 1-year baseline	Yes	61 (18.7)	40 (19.6)	51 (14.9)

All the numbers in the table are *n* (%) unless indicated otherwise
bDMARD, biologic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; JAKi, Janus kinase inhibitors; MTX, methotrexate; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

Table S4: Baseline demographic and clinical characteristics in Cohorts A, B, and C for change in RAPID3 in month 6 (±3) compared to index date

		Cohort A	Cohort B	Cohort C
Number of patients	*N*	710	476	759
Age (years)	Mean ± SD	55.7 (11.2)	55.6 (11.8)	52.8 (11.8)
Sex	Male	112 (15.8)	72 (15.1)	143 (18.8)
	Female	598 (84.2)	404 (84.9)	616 (81.2)
Race	Black	77 (10.8)	58 (12.2)	93 (12.3)
	White	512 (72.1)	336 (70.6)	517 (68.2)
	Other/missing	121 (17.0)	82 (17.2)	148 (19.5)
Index year	2017	89 (12.5)	53 (11.1)	83 (10.9)
	2018	382 (53.8)	258 (54.2)	492 (64.8)
	2019	239 (33.7)	165 (34.7)	185 (24.3)
Seropositive	Positive	180 (25.4)	125 (26.3)	216 (28.5)
	Negative	169 (23.8)	99 (20.8)	127 (16.7)
	Missing	361 (50.8)	252 (52.9)	416 (54.8)
CDAI at index date	Mean ± SD	14.1 (6.8)	15.4 (5.8)	15.8 (5.8)
csDMARD at 1-year baseline	Yes	435 (61.3)	284 (59.7)	451 (59.4)
MTX at 1-year baseline	Yes	271 (38.2)	185 (38.9)	294 (38.7)
History of TNFi	Yes	503 (70.8)	335 (70.4)	487 (64.2)
History of JAKi	Yes	316 (44.5)	229 (48.1)	337 (44.4)
History of non-TNFi bDMARDs	Yes	407 (57.3)	275 (57.8)	422 (55.6)
Rx of oral steroid at 1-year baseline	Yes	424 (59.7)	286 (60.1)	476 (62.7)
Rx of opioid at 1-year baseline	Yes	136 (19.2)	98 (20.6)	148 (19.5)

All the numbers in the table are *n* (%) unless indicated otherwise
bDMARD, biologic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; JAKi, Janus kinase inhibitors; MTX, methotrexate; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

Table S5: Baseline demographic and clinical characteristics in Cohorts A, B, and C for change in RAPID3 in month 12 (±3) compared to index date

		Cohort A	Cohort B	Cohort C
Number of patients	*N*	422	295	585
Age (years)	Mean ± SD	55.5 (11.4)	55.4 (11.6)	52.7 (11.4)
Sex	Male	69 (16.4)	49 (16.6)	117 (20.0)
	Female	353 (83.6)	246 (83.4)	467 (80.0)
Race	Black	35 (8.3)	28 (9.5)	65 (11.1)
	White	310 (73.5)	213 (72.2)	397 (67.8)
	Other/missing	77 (18.2)	54 (18.3)	123 (21.1)
Index year	2017	62 (14.7)	43 (14.6)	76 (12.9)
	2018	318 (75.4)	218 (73.9)	452 (77.3)
	2019	42 (10.0%)	34 (11.5%)	57 (9.7%)
Seropositive	Positive	110 (26.1)	76 (25.8)	165 (28.2)
	Negative	87 (20.6)	55 (18.6)	89 (15.3)
	Missing	225 (53.3)	164 (55.6)	330 (56.5)
CDAI at index date	Mean ± SD	14.2 (6.7)	15.3 (5.9)	15.9 (5.9)
csDMARD at 1-year baseline	Yes	269 (63.7)	176 (59.7)	350 (59.9)
MTX at 1-year baseline	Yes	167 (39.6)	116 (39.3)	230 (39.4)
History of TNFi	Yes	308 (73.0)	212 (71.9)	375 (64.2)
History of JAKi	Yes	187 (44.3)	144 (48.8)	256 (43.9)
History of non-TNFi bDMARDs	Yes	240 (56.9)	173 (58.6)	326 (55.8)
Rx of oral steroid at 1-year baseline	Yes	259 (61.4)	179 (60.7)	364 (62.3)
Rx of opioid at 1-year baseline	Yes	93 (22.0)	72 (24.4)	127 (21.7)

All the numbers in the table are *n* (%) unless indicated otherwise
bDMARD, biologic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; JAKi, Janus kinase inhibitors; MTX, methotrexate; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

Table S6: Baseline demographic and clinical characteristics in sarilumab-treated patients categorized by seropositivity* and CRP cutoff 12.3 mg/L (individual group data)

		Group 1	Group 2	Group 3	Group 4	*P*-value
Number of patients	*N*	53	91	11	50	
Age (years)	Mean ± SD	54.5 (11.7)	53.6 (8.7)	49.1 (10.2)	54.4 (12.0)	0.16
Sex						0.58
	Male	7 (13.2)	18 (19.8)	3 (27.3)	11 (22.0)	
	Female	46 (86.8)	73 (80.2)	8 (72.7)	39 (78.0)	
Race						0.01
	Black	10 (18.9)	5 (5.5)	0 (0.0)	0 (0.0)	
	White	32 (60.4)	62 (68.1)	10 (90.9)	39 (78.0)	
	Other/ missing	11 (20.8)	24 (26.4)	1 (9.1)	11 (22.0)	
CDAI at index date	Mean ± SD	25.5 (13.4)	25.0 (10.9)	31.1 (15.9)	25.3 (9.5)	0.61
CDAI category at index date						0.47
	Moderate	27 (50.9)	47 (51.6)	4 (36.4)	20 (40.0)	
	High	26 (49.1)	44 (48.4)	7 (63.6)	30 (60.0)	
csDMARD at 1-year baseline	Yes	35 (66.0)	63 (69.2)	4 (36.4)	35 (70.0)	0.17
MTX at 1-year baseline	Yes	28 (52.8)	39 (42.9)	2 (18.2)	21 (42.0)	0.19
Baseline csDMARD (excluding MTX)	Yes	18 (34.0)	37 (40.7)	4 (36.4)	20 (40.0)	0.87
History of TNFi	Yes	40 (75.5)	67 (73.6)	9 (81.8)	39 (78.0)	0.90
History of JAKi	Yes	18 (34.0)	41 (45.1)	7 (63.6)	30 (60.0)	0.04
History of non-TNFi agents	Yes	22 (41.5)	46 (50.5)	7 (63.6)	33 (66.0)	0.08
History of b/tsDMARDs	Yes	47 (88.7)	85 (93.4)	10 (90.9)	49 (98.0)	0.31
Rx of oral steroid at 1-year baseline	Yes	36 (67.9)	63 (69.2)	9 (81.8)	27 (54.0)	0.18
Rx of opioid at 1-year baseline	Yes	11 (20.8)	16 (17.6)	3 (27.3)	14 (28.0)	0.51
RF						<0.01
	Positive	23 (43.4)	44 (48.4)	0 (0.0)	0 (0.0)	
	Negative	0 (0.0)	10 (11.0)	5 (45.5)	23 (46.0)	
	Missing	30 (56.6)	37 (40.7)	6 (54.5)	27 (54.0)	
CRP at index date (−90 to 0 day)	Mean ± SD	33.5 (29.2)	2.7 (3.3)	26.9 (19.1)	3.4 (3.4)	<0.01

All the numbers in the table are *n* (%) unless indicated otherwise. Group 1: Seropositive and CRP >12.3 mg/L, Group 2: Seropositive and CRP ≤12.3 mg/L, Group 3: Seronegative and CRP >12.3 mg/L, Group 4: Seronegative and CRP ≤12.3 mg/L

*Seropositive patients were defined as those with a history of ACPA-positive status or RF-positive status or any ICD-10 diagnosis code of M05

	Group 1	Group 2	Group 3	Group 4	*P*-value

ACPA, anticyclic citrullinated peptide antibody; b/tsDMARD, biologic/targeted synthetic disease modifying antirheumatic drug; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; ICD, International Classification of Diseases; CRP, C-reactive protein; JAKi, Janus kinase inhibitors; MTX, methotrexate; RF, rheumatoid factor; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

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Table S7: Baseline demographic and clinical characteristics in sarilumab-treated patients (rule-positive vs. rule-negative patients categorized based on seropositive status and CRP cutoff at 5 mg/L)

		Rule-positive[a] group	Rule-negative[b] group
Number of patients	*N*	72	133
Age (years)	Mean ± SD	53.7 (10.9)	53.8 (10.3)
Sex	Male	11 (15.3)	28 (21.1)
	Female	61 (84.7)	105 (78.9)
Race	Black	10 (13.9)	5 (3.8)
	White	46 (63.9)	97 (72.9)
	Other/missing	16 (22.2)	31 (23.3)
CDAI at index date	Mean ± SD	27.1 (13.1)	24.7 (10.6)
CDAI category at index date	Moderate	32 (44.4)	66 (49.6)
	High	40 (55.6)	67 (50.4)
csDMARD at 1-year baseline	Yes	51 (70.8)	86 (64.7)
MTX at 1-year baseline	Yes	39 (54.2)	51 (38.3)
Baseline csDMARD (excluding MTX)	Yes	26 (36.1)	53 (39.8)
History of TNFi	Yes	52 (72.2)	103 (77.4)
History of JAKi	Yes	27 (37.5)	69 (51.9)
History of non-TNFi agents	Yes	32 (44.4)	76 (57.1)
Rx of oral steroid at 1-year baseline	Yes	52 (72.2)	83 (62.4)
Rx of opioid at 1-year baseline	Yes	14 (19.4)	30 (22.6)
RF	Positive	37 (51.4)	30 (22.6)
	Negative	3 (4.2)	35 (26.3)
	Missing	32 (44.4)	68 (51.1)
CRP at index date (−90 to 0 day)	Mean ± SD	26.8 (27.4)	4.2 (9.0)

All the numbers in the table are *n* (%) unless indicated otherwise

[a]Rule-positive patients are those with seropositive status and CRP level >12.3 mg/L. Seropositive patients were defined as those with a history of ACPA-positive status or RF-positive status or any ICD-10 diagnosis code of M05

[b]Rule-negative patients are those who do not meet the criteria of seropositive status and CRP level >12.3 mg/L.

ACPA, anticyclic citrullinated peptide antibody; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; CRP, C-reactive protein; ICD, International Classification of Diseases; JAKi, Janus kinase inhibitors; MTX, methotrexate; RF, rheumatoid factor; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors

Table S8: Baseline demographic and clinical characteristics in sarilumab-treated patients categorized by seropositivity* and CRP cutoff 5 mg/L (individual group data)

		Group 1	Group 2	Group 3	Group 4	*P*-value
Number of patients	*N*	72	72	26	35	
Age (years)	Mean ± SD	53.7 (10.9)	54.1 (8.9)	51.3 (9.8)	55.0 (13.0)	0.33
Sex						0.74
	Male	11 (15.3)	14 (19.4)	6 (23.1)	8 (22.9)	
	Female	61 (84.7)	58 (80.6)	20 (76.9)	27 (77.1)	
Race						0.10
	Black	10 (13.9)	5 (6.9)	0 (0.0)	0 (0.0)	
	White	46 (63.9)	48 (66.7)	21 (80.8)	28 (80.0)	
	Other/ missing	16 (22.2)	19 (26.4)	5 (19.2)	7 (20.0)	
CDAI at index date	Mean ± SD	27.1 (13.1)	23.3 (10.2)	27.0 (12.3)	25.8 (10.1)	0.27
CDAI category at index date						0.13
	Moderate	32 (44.4)	42 (58.3)	9 (34.6)	15 (42.9)	
	High	40 (55.6)	30 (41.7)	17 (65.4)	20 (57.1)	
csDMARD at 1-year baseline	Yes	51 (70.8)	47 (65.3)	16 (61.5)	23 (65.7)	0.82
MTX at 1-year baseline	Yes	39 (54.2)	28 (38.9)	10 (38.5)	13 (37.1)	0.19
Baseline csDMARD (excluding MTX)	Yes	26 (36.1)	29 (40.3)	8 (30.8)	16 (45.7)	0.64
History of TNFi	Yes	52 (72.2)	55 (76.4)	20 (76.9)	28 (80.0)	0.84
History of JAKi	Yes	27 (37.5)	32 (44.4)	16 (61.5)	21 (60.0)	0.06
History of non-TNFi agents	Yes	32 (44.4)	36 (50.0)	14 (53.8)	26 (74.3)	0.03
Rx of oral steroid at 1-year baseline	Yes	52 (72.2)	47 (65.3)	16 (61.5)	20 (57.1)	0.44
Rx of opioid at 1-year baseline	Yes	14 (19.4)	13 (18.1)	8 (30.8)	9 (25.7)	0.50
RF						0.00
	Positive	37 (51.4)	30 (41.7)	0 (0.0)	0 (0.0)	
	Negative	3 (4.2)	7 (9.7)	12 (46.2)	16 (45.7)	
	Missing	32 (44.4)	35 (48.6)	14 (53.8)	19 (54.3)	
CRP at index date (−90 to 0 day)	Mean ± SD	26.8 (27.4)	1.2 (1.6)	15.8 (15.6)	1.6 (1.7)	0.00

All the numbers in the table are *n* (%) unless indicated otherwise. Group 1: Seropositive and CRP >5 mg/L, Group 2: Seropositive and CRP ≤5 mg/L, Group 3: Seronegative and CRP >5 mg/L, Group 4: Seronegative and CRP ≤5 mg/L

*Seropositive patients were defined as those with a history of ACPA-positive status or RF-positive status or any ICD-10 diagnosis code of M05

ACPA, anticyclic citrullinated peptide antibody; CDAI, Clinical Disease Activity Index; csDMARD, conventional synthetic disease modifying antirheumatic drug; CRP, C-reactive protein; ICD, International Classification of Diseases; JAKi, Janus kinase inhibitors; MTX, methotrexate; RF, rheumatoid factor; Rx, prescription; SD; standard deviation; TNFi, tumor necrosis factor inhibitors

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Table S9: Outcomes at 24 weeks in sarilumab-treated patients categorized by seropositivity and CRP cutoff 12.3 mg/L

Outcome	Rule-positive patients (Group 1)	Rule-negative patients			*P*-value
		Group 2	Group 3	Group 4	
CDAI LDA	20 (37.7)	30 (33.0)	2 (18.2)	12 (24.0)	0.36
CDAI remission	5 (9.4)	2 (2.2)	0 (0.0)	0 (0.0)	0.04
CDAI MCID	20 (37.7)	35 (38.5)	2 (18.2%)	16 (32.0)	0.54
ΔCDAI[a], mean (SD)	−8.2 (13.9)	−7.4 (13.8)	−5.8 (18.7)	−4.4 (11.9)	0.16
ΔCDAI[a,b], LS mean (95% CI)	−7.6 (−11.9, −3.3)	−7.6 (−11.9, −3.4)	−2.3 (−10.0, 5.4)	−4.6 (−9.4, 0.3)	-
Odds ratio estimates[b], point estimate (95% Wald CI)	**Group 2 vs. Group 1**		**Group 3 vs. Group 1**	**Group 4 vs. Group 1**	
CDAI LDA	0.8 (0.4, 1.7)		0.4 (0.1, 2.1)	0.5 (0.2, 1.3)	
CDAI MCID	1.2 (0.5, 3.0)		0.1 (0.0, 0.9)	0.8 (0.3, 2.4)	

All the numbers in the table are *n* (%) unless indicated otherwise.
P-values were used to determine the difference between two or more groups. Group 1: Seropositive and CRP >12.3 mg/L, Group 2: Seropositive and CRP ≤12.3 mg/L, Group 3: Seronegative and CRP >12.3 mg/L, and Group 4: Seronegative and CRP ≤12.3 mg/L
[a]Change of CDAI from the index period to 3 to 9 months after the index date
[b]Adjusted for age, sex, race, TNFi, non-TNFi, steroid, diabetes, hypertension, number of Rx risk during baseline, and CDAI at index
CDAI, Clinical Disease Activity Index; CI, confidence interval; CRP, C-reactive protein; LDA, low disease activity; LS, least square; MCID, minimal clinically important difference; Rx, prescription; SD, standard deviation; TNFi, tumor necrosis factor inhibitors