# Real-world Effectiveness of Sarilumab in RA: Results from the Open-label, Prospective, Single-arm Observational PROFILE Study

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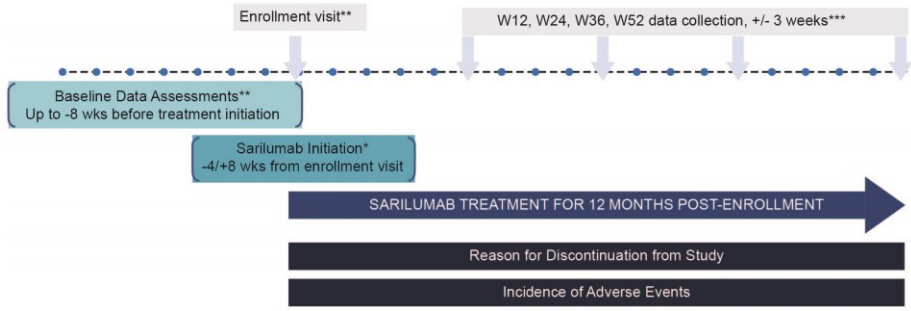
**Fig. S1** PROFILE study design




*Sarilumab initiation can be done up to 4 weeks prior to the enrollment visit or 8 weeks after the enrollment visit. Data were only collected after obtaining informed consent.
**Includes informed consent, inclusion/exclusion criteria, and baseline data collection.
***Visits intervals are calculated from the sarilumab initiation.
Wk, week.

**Fig. S2** Kaplan–Meier curves of time to sarilumab discontinuation by treatment groups

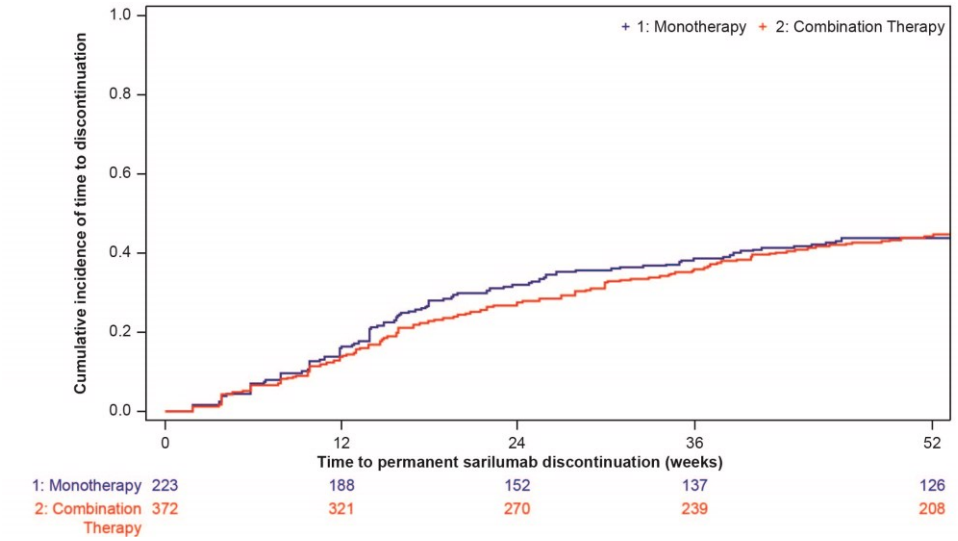
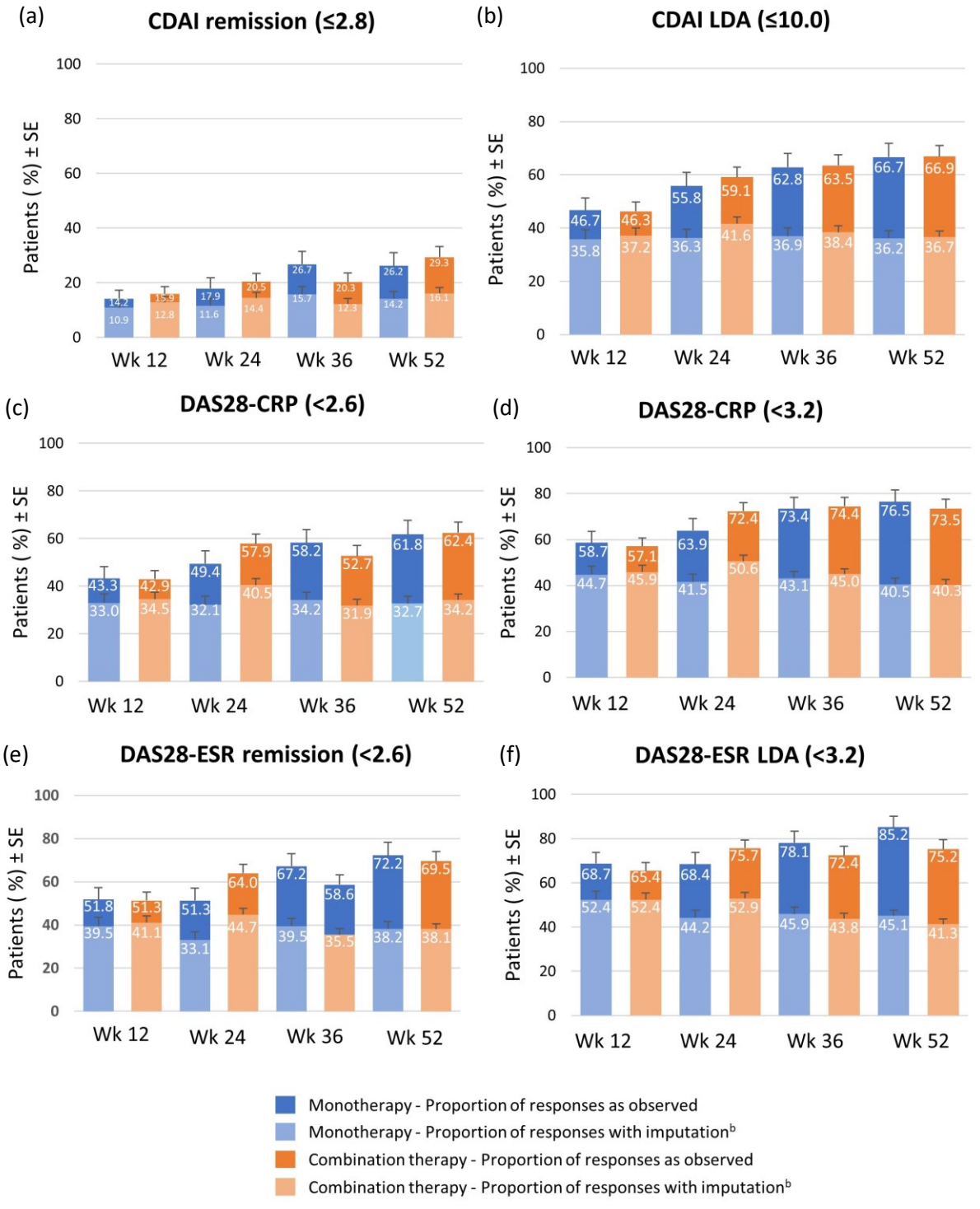


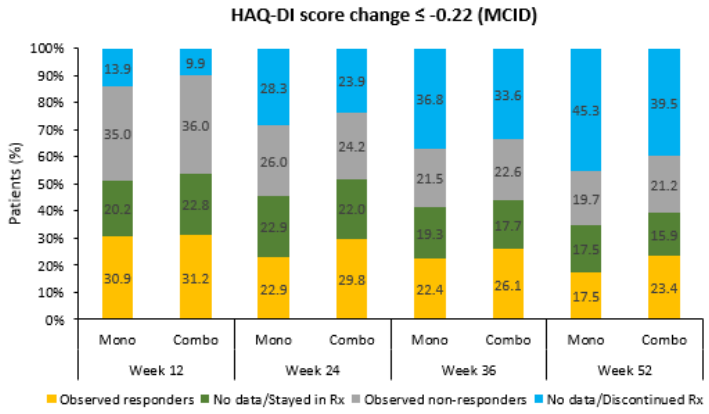
**Fig. S3** Proportion of patients achieving remission and LDA as observed among those with data available and the estimated proportion in ITT population after the specified imputation[a]



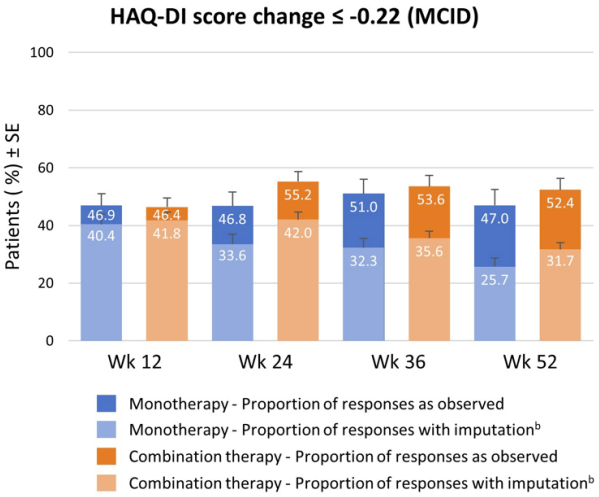

[a]Standard error was calculated by a normal approximation.
[b]Patients with missing data who discontinued the study treatment were imputed as non-responders, whereas the response rate of patients with missing data who stayed on study treatment was estimated as the same response rate as the observed.
CDAI, clinical disease activity index; CRP, C-reactive protein; DAS, disease activity score; ESR, erythrocyte sedimentation rate; LDA, low disease activity; SE, standard error; Wk, week.

**Fig. S4 Observed PRO MCID response and missing data in ITT population, and observed mean change from baseline in patients with data available**

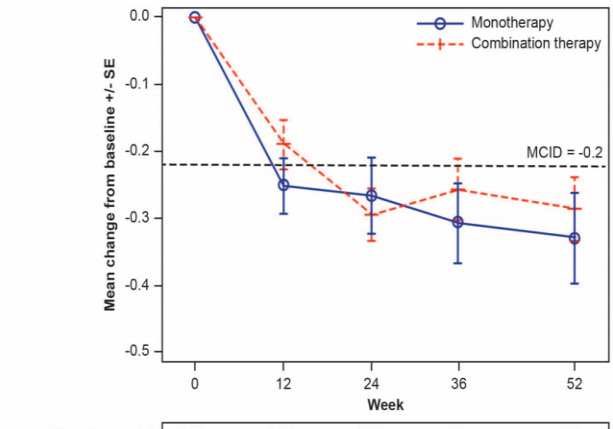
(a) Proportion of patients achieving MCID in HAQ-DI for observed and missing data




(b) Proportion of patients achieving MCID in HAQ-DI as observed among those with data available and the estimated proportion in ITT population after the specified imputation[a]

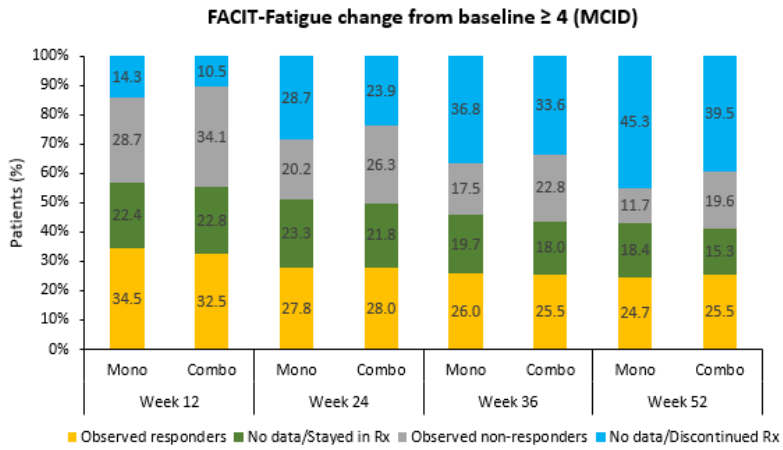



(c) Observed mean change from baseline in HAQ-DI score

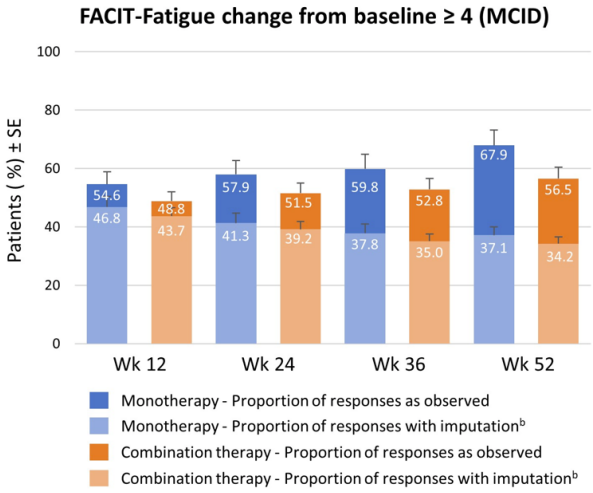



| | | | | | |
|---|---|---|---|---|---|
| Monotherapy (n) | 208 | 147 | 109 | 98 | 83 |
| Combination therapy (n) | 346 | 250 | 201 | 181 | 166 |
| P-value | | 0.4777 | 0.8564 | 0.2129 | 0.2158 |

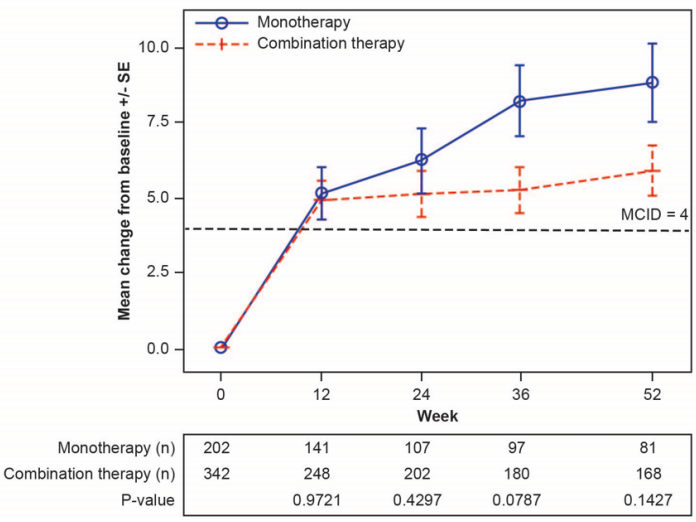
(d) Proportion of patients achieving MCID in FACIT-Fatigue for observed and missing data




(e) Proportion of patients achieving MCID in FACIT-Fatigue as observed among those with data available and the estimated proportion in ITT population after the specified imputation[a]

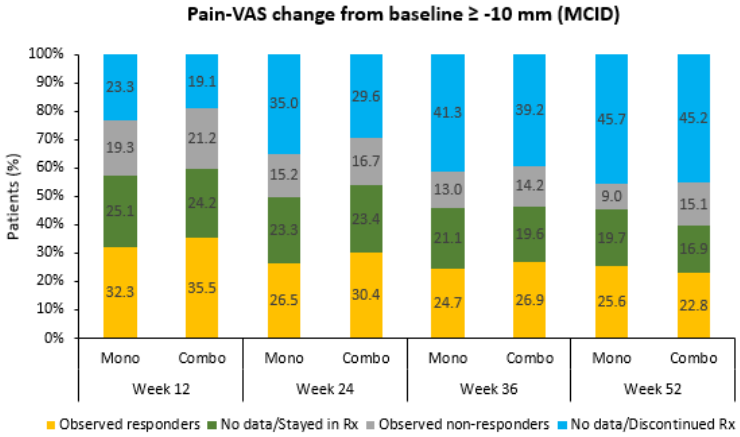



(f) Observed mean change from baseline in FACIT-Fatigue

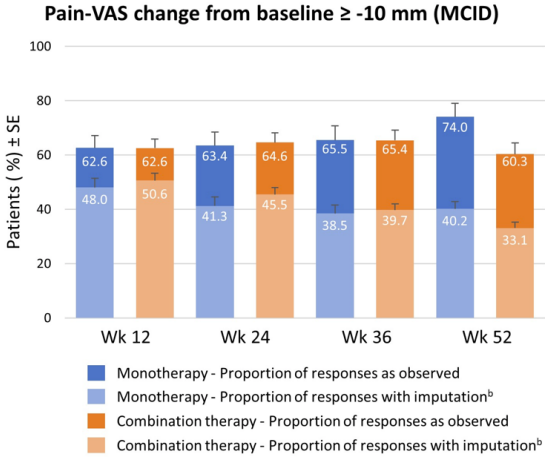



| | | | | | |
|---|---|---|---|---|---|
| Monotherapy (n) | 202 | 141 | 107 | 97 | 81 |
| Combination therapy (n) | 342 | 248 | 202 | 180 | 168 |
| P-value | | 0.9721 | 0.4297 | 0.0787 | 0.1427 |

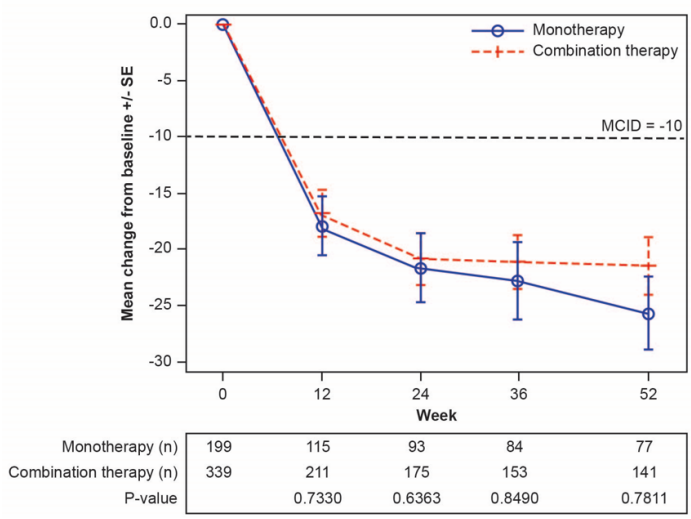
(g) Proportion of patients achieving MCID in Pain-VAS for observed and missing data




(h) Proportion of patients achieving MCID in Pain-VAS as observed among those with data available and the estimated proportion in ITT population after the specified imputation[a]

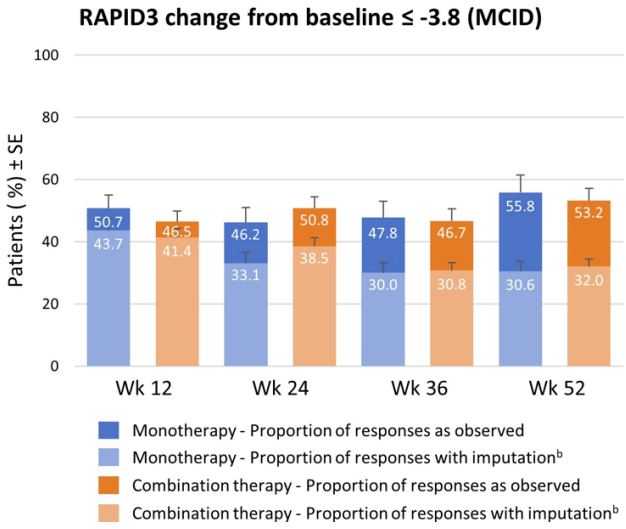



(i) Observed mean change from baseline in Pain-VAS

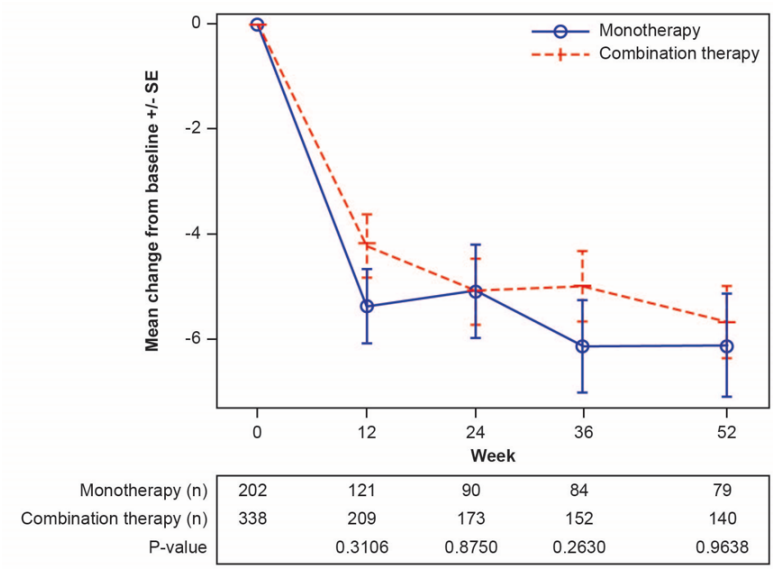



| | | | | | |
|---|---|---|---|---|---|
| Monotherapy (n) | 199 | 115 | 93 | 84 | 77 |
| Combination therapy (n) | 339 | 211 | 175 | 153 | 141 |
| P-value | | 0.7330 | 0.6363 | 0.8490 | 0.7811 |

(j) Proportion of patients achieving MCID in RAPID3 as observed among those with data available and the estimated proportion in ITT population after the specified imputation[a]



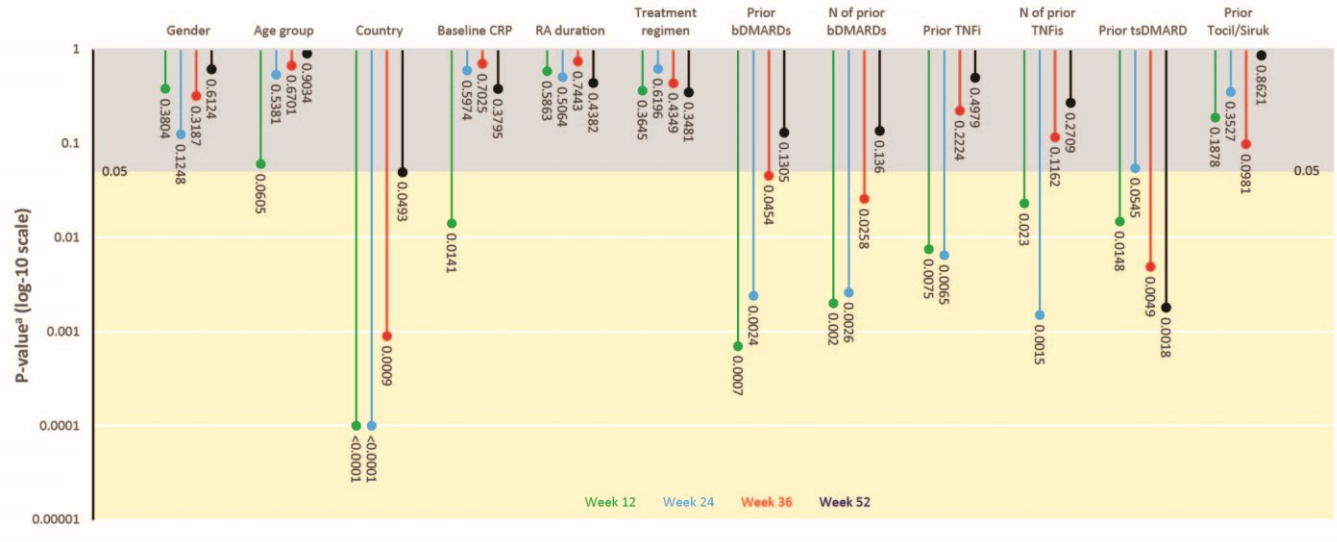

(k) Observed mean change from baseline in morning stiffness




| | | | | | |
|---|---|---|---|---|---|
| Monotherapy (n) | 202 | 121 | 90 | 84 | 79 |
| Combination therapy (n) | 338 | 209 | 173 | 152 | 140 |
| P-value | | 0.3106 | 0.8750 | 0.2630 | 0.9638 |

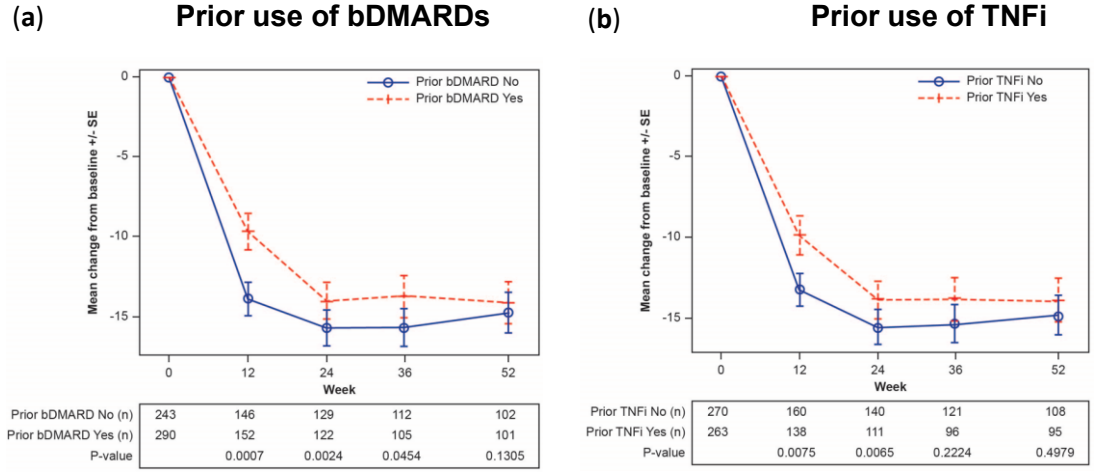
[a]Standard error was calculated by a normal approximation.
[b]Patients with missing data who discontinued the study treatment were imputed as non-responders, whereas the response rate of patients with missing data who stayed on study treatment was estimated as the same response rate as the observed.
In each figure of the observed mean change from baseline, the mean and SE at each visit were calculated based on the observed data at the visit; the *p*-values for a comparison between monotherapy and combination therapy were calculated using an MMRM approach that included the initial treatment regimen, visit, and initial treatment regimen-by-visit interaction as fixed effects and the baseline value as a covariate.
FACIT-Fatigue, Functional Assessment of Chronic Illness Therapy – Fatigue; HAQ-DI, Health Assessment Questionnaire – Disability Index; ITT, intention to treat; MCID, minimal clinically important differences; MMRM, mixed-effect model for repeated measures; PRO, patient reported outcome; RAPID3, Routine Assessment of Patient Index Data 3; Rx, treatment; SE, standard error; VAS, visual analog scale.

**Fig. S5** *p*-Values for comparisons of CDAI change from baseline among subgroups

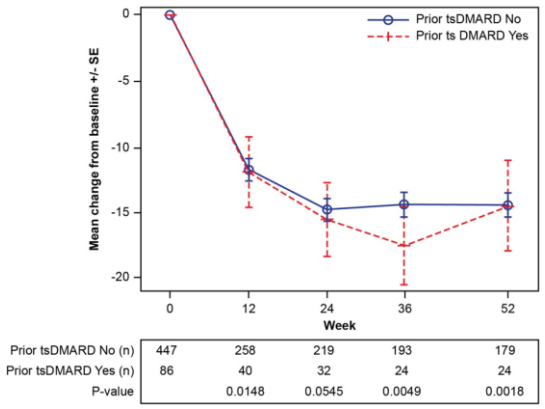



Subgroups: Gender (Male, Female), Age group (<65 years, ≥65 years), Country (Belgium, Canada, Germany, Mediterranean countries, Netherlands, USA), RA duration (≤36 months, >36 months), Baseline CRP (≤15 mg/L, >15 mg/L), Treatment regimen (Mono, Mono to Combo, Combo to Mono, Combo), Prior bDMARD (Yes, No), N of prior bDMARDs (0, 1, 2, ≥3), Prior TNFi (Yes, No), N of prior TNFis (0, 1, ≥2), Prior tsDMARD (Yes, No), Prior Toxil/Siruk (Yes, No).
[a]*P*-value for the overall subgroup main effect was calculated using a MMRM with the initial treatment regimen, subgroup, visit, and their 2-way and 3-way interactions as fixed effects, and baseline value as a covariate.
bDMARD, biologic DMARDs; CDAI, Clinical Disease Activity Index; CRP, c-reactive protein; DMARD, disease-modifying antirheumatic drugs; MMRM, mixed-effect model for repeated measures; RA, rheumatoid arthritis; tsDMARD, targeted synthetic DMARDs.

**Fig. S6** Mean change in CDAI (without adjustment for baseline values) at each visit by prior usage of RA medications: (a) bDMARDs, (b) TNFi, (c) tsDMARDs, and (d) tocilizumab or sirukumab

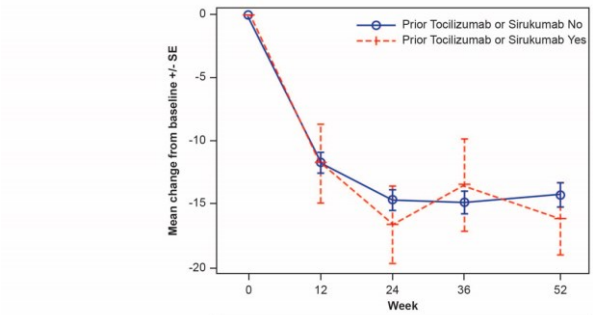


(c) **Prior use of tsDMARDs**




| | | | | | |
|---|---|---|---|---|---|
| Prior tsDMARD No (n) | 447 | 258 | 219 | 193 | 179 |
| Prior tsDMARD Yes (n) | 86 | 40 | 32 | 24 | 24 |
| P-value | | 0.0148 | 0.0545 | 0.0049 | 0.0018 |

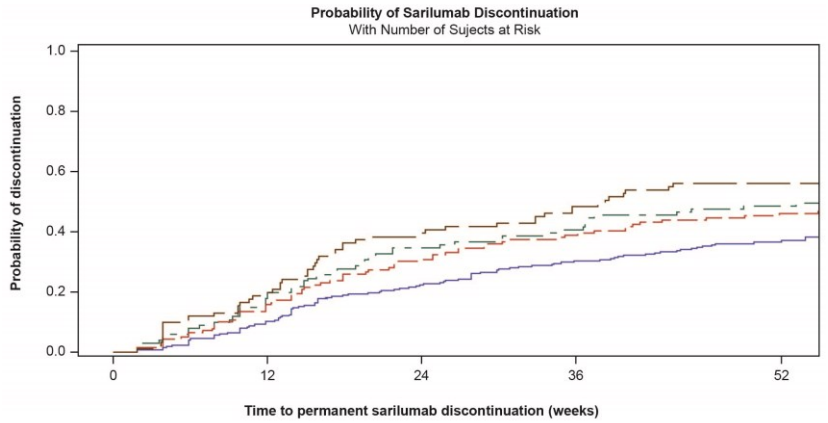
(d) **Prior use of tocilizumab or sirukumab**




| | | | | | |
|---|---|---|---|---|---|
| Prior Tocilizumab or Sirukumab No (n) | 473 | 272 | 227 | 195 | 181 |
| Prior Tocilizumab or Sirukumab Yes (n) | 60 | 26 | 24 | 22 | 22 |
| P-value | | 0.1878 | 0.3527 | 0.0981 | 0.8621 |

The *p*-values for the comparison between subgroups were calculated using a MMRM with the initial treatment regimen, subgroup, visit, and their 2-way and 3-way interactions as fixed effects, and baseline value as a covariate.
bDMARD, biologic DMARDs; CDAI, Clinical Disease Activity Index; DMARDs, disease-modifying antirheumatic drugs; MMRM, mixed-effect model for repeated measures; SE, standard error; TNFis, tumor necrosis factor inhibitors; tsDMARDs, targeted synthetic DMARDs.

**Fig. S7** Kaplan–Meier curve of time to sarilumab discontinuation by number of prior bDMARDs




| | | | | | |
|---|---|---|---|---|---|
| 0 | 264 | 237 | 205 | 184 | 167 |
| 1 | 139 | 117 | 96 | 85 | 75 |
| 2 | 101 | 83 | 66 | 60 | 52 |
| ≥3 | 91 | 72 | 55 | 47 | 40 |

**Table S1** Sarilumab exposure

| | **Monotherapy (N=223)** | **Combination therapy (N=372)** | **All (N=595)** |
|---|---|---|---|
| Cumulative exposure to sarilumab (patient years) | 165.9 | 277.4 | 443.4 |
| Treatment duration (weeks), mean (SD) | 38.82 (21.29) | 38.92 (19.18) | 38.88 (19.98) |
| Treatment duration group (weeks) | | | |
| ≤4 weeks, n (%) | 8 (3.6) | 16 (4.3) | 24 (4.0) |
| >4 and ≤52 weeks, n (%) | 123 (55.2) | 211 (56.7) | 334 (56.1) |
| >52 weeks, n (%) | 92 (41.3) | 145 (39.0) | 237 (39.8) |
| Patients persistent with sarilumab through end of study, n (%) | 114 (51.1) | 201 (54.0) | 315 (52.9) |
| Patients switched to another bDMARD or tsDMARD, n (%) | 57 (25.6) | 88 (23.7) | 145 (24.4) |

bDAMRDs, biologic disease-modifying antirheumatic drugs; *N*, number of patients; *n*, number of patients; SD, standard deviation; tsDMARDs, targeted synthetic disease-modifying antirheumatic drugs.