

Supplementary Table 1. Baseline characteristics of the unmatched participants

	TNFi initiators (n=746)	TCZ initiators (n=321)	d
Female	607 (81.4)	268 (83.5)	0.056
Age (yr)	52.7±12.7	54.8±12.8	0.170
Disease duration (yr)	6.1±7.1	6.1±6.9	0.002
Body mass index (kg/m ²)	22.7±3.5	22.6±3.3	0.048
Smoking history			0.062
Ex-smoker	64 (8.6)	32 (10.0)	
Current smoker	57 (7.6)	21 (6.5)	
Never	625 (83.8)	268 (83.5)	
RF positivity	623 (84.5)	270 (84.4)	0.004
ACPA positivity	555 (85.8)	245 (83.6)	0.060
Hemoglobin (g/L)	120.9±13.7	119.7±14.6	0.087
White blood cell count (×10 ⁹ /L)	8.3±2.6	8.3±2.9	0.008
Platelet count (×10 ⁹ /L)	296.3±82.2	299.6±85.6	0.039
ESR (mm/hour)	47.9±27.7	46.0±28.0	0.069
CRP (mg/L)	20.9±23.6	23.8±29.0	0.110
Swollen joint count	7.1±5.8	6.5±5.0	0.108
Tender joint count	9.1±7.2	8.1±5.7	0.149
DAS28-ESR	5.5±1.1	5.5±1.0	0.015
DAS28-CRP	4.9±1.1	5.0±1.0	0.077
SDAI	29.0±11.3	29.5±10.7	0.045
CDAI	27.0±10.8	27.1±10.2	0.016
RAPID3	15.2±5.4	15.7±5.9	0.093
Radiographic joint erosion	267 (41.0)	120 (42.4)	0.028
Interstitial lung disease	17 (2.3)	20 (6.2)	0.197
Concurrent use of csDMARDs	737 (98.8)	317 (98.8)	0.004
Number of csDMARDs	1.71±0.73	1.81±0.73	0.128
Concurrent use of methotrexate	715 (95.8)	298 (92.8)	0.131
Concurrent corticosteroid	659 (88.3)	282 (87.9)	0.015
Corticosteroid dose (dose equivalent for prednisolone in mg/day)	5.5±3.3	5.5±3.6	0.010

Values are presented as number (%) or mean±standard deviation. TNFi: tumor necrosis factor inhibitors, TCZ: tocilizumab, d: standardized difference, RF: rheumatoid factor, ACPA: anti-citrullinated protein antibody, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, DAS28: Disease Activity Score in 28 Joints, SDAI: Simple Disease Activity Index, CDAI: Clinical Disease Activity Index, RAPID3: Routine Assessment of Patient Index Data 3, csDMARDs: conventional synthetic disease-modifying antirheumatic drugs.

Supplementary Table 2. Baseline comorbidities of the matched participants

	TNFi initiators (n=578)	TCZ initiators (n=315)	d
Chronic kidney disease	7 (1.2)	4 (1.3)	0.005
Hypertension	155 (26.8)	90 (28.6)	0.039
Ischemic heart disease	16 (2.8)	6 (1.9)	0.057
Arrhythmia	5 (0.9)	1 (0.3)	0.071
Congestive heart failure	6 (1.0)	2 (0.6)	0.044
Peripheral artery disease	1 (0.2)	1 (0.3)	0.029
Stroke	8 (1.4)	2 (0.6)	0.075
Chronic obstructive pulmonary disease	11 (1.9)	5 (1.6)	0.024
Bronchial asthma	11 (1.9)	4 (1.3)	0.051
Peptic ulcer	29 (5.0)	7 (2.2)	0.150
Chronic liver disease	7 (1.2)	2 (0.6)	0.060
Major depressive disorder	12 (2.1)	4 (1.3)	0.063
Hematologic malignancy	0 (0.0)	0 (0.0)	<0.001
Solid tumor	1 (0.17)	0 (0.0)	0.059

Values are presented as number (%). TNFi: tumor necrosis factor inhibitors, TCZ: tocilizumab, d: standardized difference.

Supplementary Table 3. Baseline characteristics of the participants with anemia

	TNFi initiators (n=294)	TCZ initiators (n=162)	d
Female	248 (84.4)	138 (85.2)	0.023
Age (yr)	55.5±12.1	55.4±13.1	0.009
Disease duration (yr)	6.3±7.4	5.4±6.8	0.130
Body mass index (kg/m ²)	22.4±3.6	22.4±3.3	0.004
Smoking history			0.057
Ex-smoker	25 (8.5)	13 (8.0)	
Current smoker	14 (4.8)	6 (3.7)	
Never	255 (86.7)	143 (88.3)	
RF positivity	250 (85.6)	131 (81.4)	0.115
ACPA positivity	218 (85.2)	115 (77.7)	0.193
Hemoglobin (g/L)	110.9±9.0	108.9±9.8	0.208
White blood cell count (×10 ⁹ /L)	8.3±2.6	8.4±3.0	0.032
Platelet count (×10 ⁹ /L)	306.4±89.0	317.2±86.3	0.123
ESR (mm/hour)	56.8±28.0	55.0±30.7	0.061
CRP (mg/L)	24.7±26.2	31.0±36.0	0.202
Swollen joint count	6.5±5.0	6.4±5.2	0.033
Tender joint count	8.1±5.9	7.6±5.7	0.100
DAS28-ESR	5.7±1.0	5.6±1.1	0.085
DAS28-CRP	4.9±1.0	4.9±1.1	0.007
SDAI	29.1±10.4	29.3±11.2	0.026
CDAI	26.7±9.8	26.2±10.5	0.046
RAPID3	15.7±5.3	16.2±6.2	0.086
Radiographic joint erosion	103 (40.9)	56 (40.0)	0.018
Interstitial lung disease	10 (3.4)	6 (3.7)	0.016
Concurrent use of csDMARDs	293 (99.7)	160 (98.8)	0.101
Number of csDMARDs	1.70±0.73	1.91±0.73	0.295
Concurrent use of methotrexate	280 (95.2)	151 (93.2)	0.087
Concurrent corticosteroid	260 (90.8)	143 (88.3)	0.083
Corticosteroid dose (dose equivalent for prednisolone in mg/day)	5.8±3.6	5.7±3.2	0.046

Values are presented as number (%) or mean±standard deviation. TNFi: tumor necrosis factor inhibitors, TCZ: tocilizumab, d: standardized difference, RF: rheumatoid factor, ACPA: anti-citrullinated protein antibody, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, DAS28: Disease Activity Score in 28 Joints, SDAI: Simple Disease Activity Index, CDAI: Clinical Disease Activity Index, RAPID3: Routine Assessment of Patient Index Data 3, csDMARDs: conventional synthetic disease-modifying antirheumatic drugs.

Supplementary Table 4. Baseline characteristics of the participants without anemia

	TNFi initiators (n=284)	TCZ initiators (n=153)	d
Female	232 (81.7)	124 (81.0)	0.017
Age (years)	52.1±12.6	53.8±12.4	0.139
Disease duration (yr)	5.9±6.9	6.9±6.9	0.139
Body mass index (kg/m ²)	22.8±3.3	22.7±3.3	0.014
Smoking history			0.162
Ex-smoker	23 (8.1)	19 (12.4)	
Current smoker	23 (8.1)	15 (9.8)	
Never	238 (83.8)	119 (77.8)	
RF positivity	234 (83.6)	133 (86.9)	0.095
ACPA positivity	214 (85.6)	124 (89.2)	0.109
Hemoglobin (g/L)	130.7±8.7	131.3±8.7	0.066
White blood cell count (×10 ⁹ /L)	8.4±2.6	8.1±2.6	0.109
Platelet count (×10 ⁹ /L)	284.8±73.7	279.6±76.2	0.069
ESR (mm/hour)	40.3±24.4	36.5±21.2	0.165
CRP (mg/L)	17.5±20.5	16.7±16.8	0.046
Swollen joint count	6.3±5.2	6.7±4.9	0.069
Tender joint count	8.0±6.3	8.6±5.8	0.102
DAS28-ESR	5.4±1.0	5.5±1.0	0.106
DAS28-CRP	4.8±1.0	4.9±0.9	0.172
SDAI	28.4±11.1	29.4±10.2	0.098
CDAI	26.7±10.6	27.8±9.8	0.109
RAPID3	15.3±5.2	15.1±5.4	0.028
Radiographic joint erosion	95 (38.2)	61 (44.5)	0.130
Interstitial lung disease	5 (1.8)	9 (5.9)	0.216
Concurrent use of csDMARDs	277 (97.5)	151 (98.7)	0.085
Number of csDMARDs	1.68±0.73	1.70±0.72	0.027
Concurrent use of methotrexate	272 (95.8)	144 (94.1)	0.076
Concurrent corticosteroid	244 (85.9)	133 (86.9)	0.030
Corticosteroid dose (dose equivalent for prednisolone in mg/day)	5.2±3.1	5.1±2.9	0.031

Values are presented as number (%) or mean±standard deviation. TNFi: tumor necrosis factor inhibitors, TCZ: tocilizumab, d: standardized difference, RF: rheumatoid factor, ACPA: anti-citrullinated protein antibody, ESR: erythrocyte sedimentation rate, CRP: C-reactive protein, DAS28: Disease Activity Score in 28 Joints, SDAI: Simple Disease Activity Index, CDAI: Clinical Disease Activity Index, RAPID3: Routine Assessment of Patient Index Data 3, csDMARDs: conventional synthetic disease-modifying antirheumatic drugs.