

**Supplementary Table S1.** Description of the 10 postoperative infectious complications.

Patient	Type of surgery	Type of complication	Details of complications	Time until complication	Treatment
66-year-old woman	Knee prosthesis	General infection	Hallux septic arthritis and cutaneous necrosis.	6 weeks	Favourable outcome, TCZ treatment restarted 19 months after surgery.
77-year-old woman	Infected knee prosthesis replacement	Surgical site infection	Scar necrosis and central catheter thrombosis	In the first days	Antibiotics and catheter extraction. TCZ definitely stopped.
67-year-old man	Diabetic foot ulcer	Surgical site infection	Second toe septic wound due to <i>Staphylococcus aureus</i> meti S.	3 weeks	Forefoot amputation and antibiotics. Favourable outcome, TCZ definitely stopped.
77-year-old woman	Amputation of the 4 <sup>th</sup> infected proximal interphalangeal	General infection	Deterioration of general condition due to oesophageal candidiasis and <i>Helicobacter pylori</i> gastric infection.	5 weeks	Antifungal and antibiotic treatment. Favourable outcome, TCZ restarted 3 months after surgery.
29-year-old woman	Tibiocalcaneal arthrodesis	Surgical site infection	Abscess and prosthesis infection due to <i>Peptoniphilus</i> .	12 weeks	Antibiotics and prosthesis extraction. Favourable outcome, TCZ restarted 6 months after surgery.
58-year-old man	Rotator cuff surgery	General infection	Otorhinolaryngology area viral infection.	3 weeks	Usual care. Favourable outcome. TCZ restarted 1 month after surgery.
53-year-old man	Hallux valgus surgery	Surgical site infection	Wound necrosis and surgical material infection.	3 weeks	Osteosynthesis material extraction and antibiotics. Favourable outcome, TCZ definitely stopped.
61-year-old woman	Sleeve surgery	General infection	Intra-abdominal haemorrhage and fever with urinary symptom and positive sample.	5 days	Laparotomy for hemoperitoneum evacuation and antibiotics. Favourable outcome, TCZ restarted 3 month after surgery.
58-year-old woman	Sigmoiditis abscess	Surgical site infection	Intraabdominal residual collection and colostomy dysfunction.	1 week	Revision surgery for residual collection evacuation and usual colostomy care. Favourable outcome. TCZ definitely stopped.
64-year-old woman	Cervical cellulitis with septic choc	General infection	Thigh haematoma due to thrombocytopenia, secondarily infected.	3 months	Usual care and antibiotics. TCZ definitely stopped.

**Supplementary Table S2.** Description of the 5 postoperative non-infectious complications.

Patient	Type of surgery	Type of complication	Details of complications	Time until complication	Treatment
76-year-old man	Interruptive mandibulectomy	Bowel obstruction	Intensive care management for severe bowel obstruction.	0 days	Usual care and antibiotics. Favourable outcome, 5 days after surgery. TCZ restarted 1 month after surgery.
44-year-old woman	Total hysterectomy	Haemorrhagic complication	Metrorrhagia.	0 days	Revision surgery and favourable outcome, TCZ restarted 1 month after surgery.
58-year-old woman	Cataract surgery	RA flare up	Fever and deterioration of general condition.	1 month	Spontaneous favourable outcome, TCZ restarted 2 months after surgery.
74-year-old man	Abdominal aortic aneurysm endoprosthesis	Deep venous thrombosis	Endoprosthesis thrombosis 1 month after TCZ treatment restart.	1 week	Extra anatomic revascularisation and endoprosthesis change with favourable outcome., TCZ restarted 8 months after surgery.
49-year-old woman	Total hysterectomy	Delayed wound healing	Early eventration symptoms.	1 month	Surgical revision and scar care. Favourable outcome, TCZ restarted 2 months after surgery.

**Supplementary Table S3.** Comparison of RA patients' characteristics at last visit preceding 175 surgery procedures with and without postoperative serious infectious complication: univariate analysis.

	Data available	Surgery without complications n=160	Surgery with complications n=15	p-value
n. women (%)	175	136 (85 %)	11 (73.3%)	0.202*
Mean age (years)	175	57.86 ± 12.78	60.80 ± 13.5	0.344
median		59.0	61.0	
min-max		22-87	29-78	
Mean weight (kg)	171	70.89 ± 15.94	73.60 ± 14.2	0.381
median		68.5	80.0	
min-max		41-116	49-98	
Mean disease duration (years)	167	15.19 ± 11.53	12.31 ± 7.6	0.574
median		12	13	
min-max		1-67	1-25	
Smoker (%)	166	35 (23.2%)	3 (20%)	0.537
Diabetes mellitus (%)	175	17 (10.6%)	3 (20.0%)	0.236*
Chronic respiratory disease (%)	175	32 (18.3%)	0 (0%)	0.042
Recurrent infection (%)	175	8 (5%)	1 (6.7%)	0.562
Chronic cardiac disease (%)	175	6 (3.8%)	1 (6.7%)	0.472
Positive rheumatoid factor (%)	149	99 (73.3%)	12 (85.7%)	0.254
Mean level (UI/mL)	78	229.77 ± 343.91	317 ± 261.0	0.219
median		107	341	
min-max		0-2120	0-675	
Positive anti-cyclic citrullinated peptide (%)	132	87 (72.5%)	11 (91.7%)	0.132
Mean level (UI/mL)	78	501.1 ± 1254.17	233.2 ± 120.6	0.433
median		200	297	
min-max		0-9210	0-340	
Orthopaedic surgery (%)	175	95 (59.4%)	8 (53.3%)	0.424
Prosthesis (%)	175	49 (30.6%)	3 (20%)	0.347
Spinal surgery (%)	175	9 (5.6%)	0 (0%)	0.468
Foot surgery (%)	175	15 (8.6%)	0 (0%)	0.246
Hip surgery (%)	175	19 (11.9%)	2 (13.3%)	0.562
Knee surgery (%)	175	20 (12.5%)	2 (13.3%)	0.590
Upper limb Surgery (%)	175	29 (18.1%)	4 (26.7%)	0.235*
Abdominal surgery (%)	175	26 (16.3%)	3 (20%)	0.468
Other surgery (%)	175	39 (24.4%)	4 (24.6%)	0.528
Concomitant sDMARDs (%)	175	95 (59.4%)	11 (73%)	0.220*
Concomitant MTX (%)	175	73 (45.6%)	9 (60%)	0.213*
Mean dose (mg)		14.90 ± 4.89	16.39 ± 4.1	0.237
med		15	17.5	
min-max		8-30	10-20	
Concomitant Leflunomide (%)	175	18 (11.3%)	2 (13.3%)	0.533
Concomitant Hydroxychloroquine (%)	175	4 (2.4%)	1 (6.67%)	0.365
Concomitant Sulfasalazine (%)	175	3 (1.8%)	0 (0%)	0.763
Concomitant steroids (%)	175	95 (59.4%)	12 (80%)	0.096*
Mean dose (mg)		7.83 ± 4.95	7.125 ± 3.0	0.810
med		6	6	
min-max		2-25	4-15	
Time since last infusion before surgery (weeks)	130	4.88 ± 2.64	5.54 ± 2.2	0.270
med		4	6	
min-max		0-12	2-10	
Mean DAS 28	137	3.42 ± 1.70	3.52 ± 2.1	0.711
med		3.32	3.87	
min-max		0.28-8.61	0.49-7.86	
DAS28 <2.6 (%)	137	41 (33.1 %)	4 (30.8%)	0.568
DAS 28 from 2.6 to 3.2 (%)	137	20 (16.1%)	0 (0%)	0.116
DAS 28 from 3.2 to 5.1 (%)	137	39 (23.4%)	6 (46.15%)	0.219
DAS28 >5.1 (%)	137	22 (17.74%)	3 (23.1%)	0.435
TCZ dose mg/month	174	7.79 ± 0.86	7.53 ± 1.2	0.736
med		8	8	
min-max		3.96-8	4-8	
Previous biological treatment	175	95 (59.4%)	12 (80%)	0.096*
RTX treatment in the previous year	175	16 (10%)	4 (26.7%)	0.074*
Mean neutrophil blood count (mm <sup>3</sup> )	157	4282.97 ± 2733	4226 ± 2046	0.700
med		3433	3290	
min-max		620-14460	1767-8984	
Mean TCZ courses before surgery	175	9.89 ± 7.92	8.67 ± 9.60	0.317
med		7	7	
min-max		1-36	1-40	

TCZ: Tocilizumab treatment; RTX: Rituximab treatment; sDMARDs: synthetic disease-modifying anti-rheumatic drugs, DAS28: Disease Activity Score in 28 joints..

\* p-value<0.25 and involved in multivariate analysis.

**Supplementary Table S4.** Comparison of RA patients' characteristics at last visit preceding 175 surgery procedures with and without postoperative serious infectious complication: univariate analysis.

	Data available	Surgery without infectious complications n=165	Surgery with infectious complications n=10	p-value
n. women (%)	175	139 (84.2%)	8 (80.0%)	0.497
Mean age (years)	175	57.93 ± 12.79	61.1 ± 13.83	0.324
median		59	62.5	
min-max		22-87	29-78	
Mean weight (kg)	171	71.12 ± 15.80	71.20 ± 16.19	0.963
median		69	67.5	
min-max		41-116	49-98	
Mean disease duration (years)	167	15.13 ± 11.42	11.63 ± 7.93	0.472
median		12	10	
min-max		1-67	1-23	
Smoker (%)	166	37 (23.7%)	1 (10.0%)	0.286
Diabetes mellitus (%)	175	17 (10.3%)	3 (30.0%)	0.091*
Chronic respiratory disease (%)	175	32 (19.4%)	0 (0%)	0.125
Recurrent infection (%)	175	9 (5.5%)	0 (0%)	0.581
Chronic cardiac disease (%)	175	7 (4.2%)	0 (0%)	0.657
Positive rheumatoid factor (%)	149	103 (73.6%)	8 (88.9%)	0.280
Mean level (UI/mL)	78	233.78 ± 39.76	239.83 ± 35.14	0.373
median		107.5	118	
min-max		0-2120	0-675	
Positive anti-cyclic citrullinated peptide (%)		91 (72.8%)	7 (100%)	0.117
Mean level (UI/mL)	132	487.18 ± 1229.5	266.33 ± 101.0	0.219
median	78	200	318.5	
min-max		0-9210	108-340	
Orthopaedic surgery (%)	175	96 (58.2%)	7 (70.0%)	0.349
Prosthesis (%)	175	49 (29.7%)	3 (30%)	0.489
Spinal surgery (%)	175	9 (5.4%)	0 (0%)	0.517
Foot surgery (%)	175	15 (9.1%)	0 (0%)	0.095*
Hip surgery (%)	175	19 (11.5%)	2 (20%)	0.398
Knee surgery (%)	175	20 (12.1%)	2 (20%)	0.343
Upper limb surgery (%)	175	29 (17.6%)	4 (40%)	0.365
Abdominal surgery (%)	175	27 (16.4%)	2 (20.0%)	0.517
Other surgery (%)	175	42 (25.5%)	1 (10%)	0.246*
Concomitant sDMARDs (%)	175	98 (59.4%)	8 (80%)	0.280
Concomitant MTX (%)	175	76 (46.1%)	6 (60.0%)	0.297
Mean dose (mg)		15 ± 4.83	15.83 ± 4.92	0.572
med		15	17.5	
min-max		8-30	10-20	
Concomitant Leflunomide (%)	175	18 (10.9%)	2 (20%)	0.320
Concomitant Hydroxychloroquine (%)	175	4 (2.4%)	1 (10%)	0.257
Concomitant Sulfasalazine (%)	175	3 (1.8%)	0 (0%)	0.837
Concomitant steroids (%)	175	100 (60.6%)	7 (70.0%)	0.408
Mean dose (mg)		7.73 ± 4.85	8.07 ± 3.72	0.498
med		6	7.5	
min-max		2-25	4-15	
Time since last infusion before surgery (weeks)	130	4.94 ± 2.65	5.0 ± 2.06	0.810
med		4	6	
min-max		0-12	2-8	
Mean DAS 28	137	3.43 ± 1.74	3.47 ± 1.73	0.602
med		3.32	4.2	
min-max		0.28 – 8.61	0.5-5.38	
DAS28 <2.6 (%)	137	43 (33.6%)	2 (22.2%)	0.383
DAS 28 from 2.6 to 3.2 (%)	137	20 (15.6%)	0 (0%)	0.231
DAS 28 from 3.2 to 5.1 (%)	137	40 (31.3%)	5 (55.6%)	0.130
DAS28 >5.1 (%)	137	23 (18%)	2 (22.2%)	0.515
TCZ dose mg/month	174	7.78 ± 0.87	7.60 ± 1.26	0.985
med		8	8	
min-max		3.96 – 8	4-8	
Previous biological treatment	175	100 (60.6%)	7 (70%)	0.408
RTX treatment in the previous year	175	18 (10.9%)	2 (20%)	0.320
Mean neutrophil blood count (mm <sup>3</sup> )	157	4315 ± 720.82	3714.7 ± 752.05	0.690
med		3456	3215	
min-max		620-14460	1767-6750	
Mean TCZ courses before surgery	175	9.89 ± 7.8	8.0 ± 11.8	0.084*
med		8	3.5	
min-max		1-36	1-40	

TCZ: Tocilizumab treatment; RTX: Rituximab treatment; DMARDs: disease-modifying anti-rheumatic drugs, DAS28: Disease Activity Score in 28 joints.

\*p-value<0.25 and involved in multivariate analysis