

Supplementary material**Supplementary Table S1.** Patients' baseline characteristics.

Characteristics	Baseline	Source
HAQ, mean (SD)	1.6 (0.6)	(1)
Age (years), mean (SD)	50 (13.4)	(1)
Female proportion (%)	83	(1)
RA duration (years), mean (SD)	7.9 (8)	(1)

HAQ: Health Assessment Questionnaire. RA: rheumatoid arthritis

Supplementary Table S2. Characteristics of clinical studies included.

Author	Publication year	Treatment	Patient number	Follow up, months (median)	Age, years (mean)	RA duration, years (mean)	HAQ (mean)
Fleischmann (1)	2017	Tofacitinib (5 mg/d)	376	12	50	5.4	1.6
		Adalimumab (40 mg/2 weeks)	386	12	50.7	6	1.6
Ytterberg (2)	2022	Tofacitinib (5 mg/d)	1455	44.7	60.8	10.4	1.6
		Etanercept (50 mg/w) or Adalimumab (40 mg/2w)	1451	44	61.3	10.4	1.6
Emery (3)	2008	Tocilizumab (8 mg/kg/4w)	170	6	53.9	12.6	1.7
Kremer (4)	2016	Tocilizumab (8 mg/kg/4w)	399	43.2	51.9	9.6	1.5
Genovese (5)	2005	Abatacept (10 mg/kg/4w)	258	6	53.4	12.2	1.8
Genovese (6)	2012	Abatacept (10 mg/kg/4w)	218	43.4	53.1	12.1	1.8
Cohen (7)	2006	Rituximab (1000 mg) repeated treatment based on clinical treatment	308	56.3	52.2	12.1	1.9

Supplementary Table S3. Hazard ratio of death according to HAQ score, according to Michaud *et al.* (8).

HAQ	Hazard ratio (IC 95%)
0.00	1.0
0.125–0.375	1.4 (1.1, 1.8)
0.500–0.875	1.5 (1.2, 1.9)
1.000–1.375	1.8 (1.4, 2.2)
1.500–1.875	2.7 (2.2, 3.5)
2.000–2.375	4.0 (3.1, 5.2)
2.500–3.000	5.5 (3.9, 7.7)

Supplementary Table S4. Time (in years) by state.

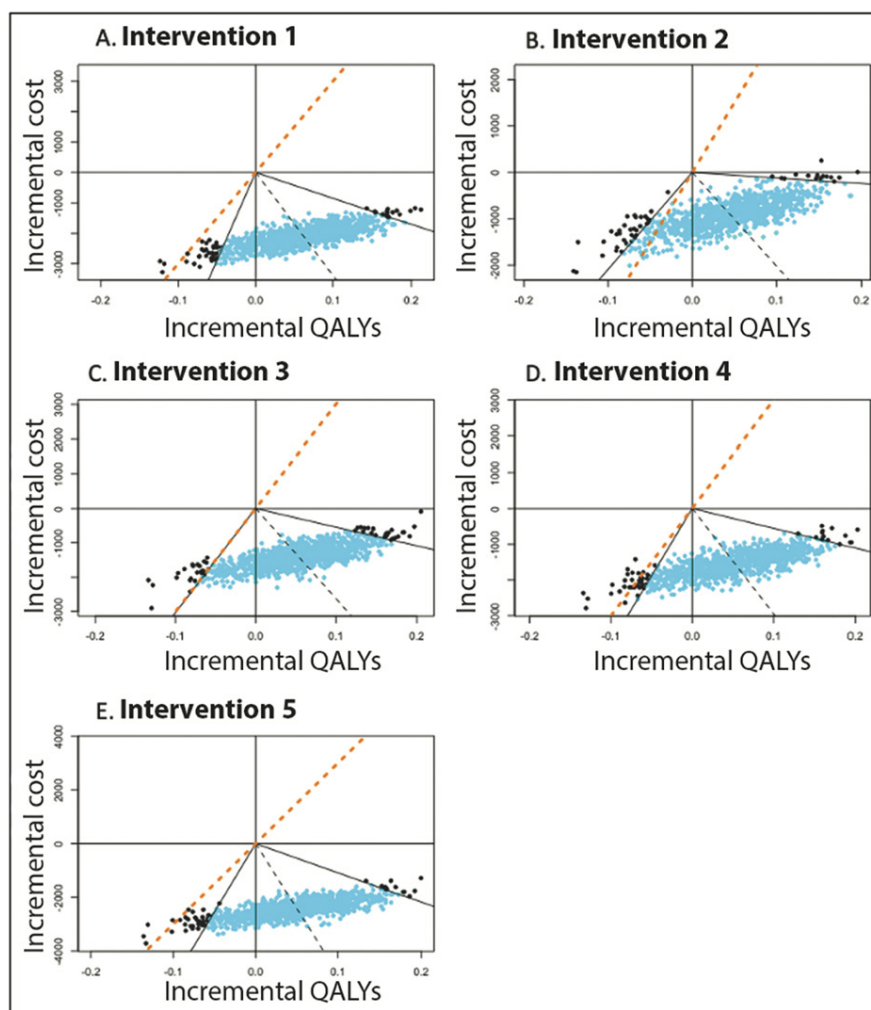
Sequence	Reference	Intervention 1	Intervention 2	Intervention 3	Intervention 4	Intervention 5
Death	18.1	17.9	17.9	17.9	17.9	17.8
Palliative Care	14.3	11.7	11.7	11.7	11.7	11.7
Treatment*	12.6	15.4	15.5	15.5	15.5	15.5
Tofacitinib	0.0	3.4	3.4	3.3	3.0	2.8
TNFi	4.9	4.9	4.9	4.9	4.9	4.9
Tocilizumab	2.6	2.5	2.5	2.6	2.6	2.6
Abatacept	2.8	2.6	2.6	2.6	2.8	2.8
Rituximab	2.3	2.1	2.1	2.1	2.1	2.3

* corresponds to the sum of time spent under treatment.

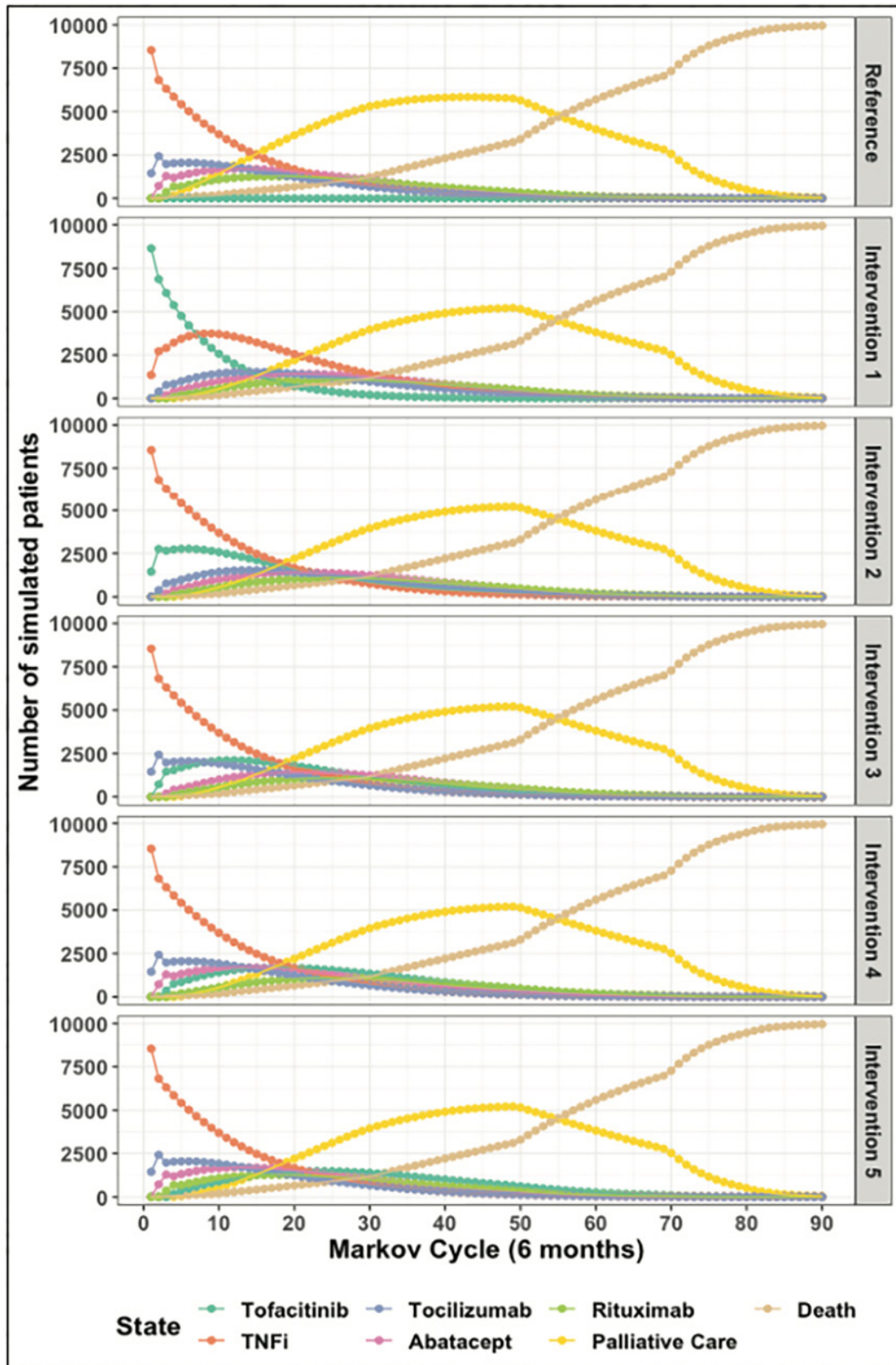
Supplementary Table S5. Numeric data from the deterministic sensitivity analysis.

Parameters	Value	Reference		Intervention 1		Intervention 2		Intervention 3		Intervention 4		Intervention 5	
		Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY
Day hospitalization	297.670	206547	8.80	204942	9.09	205265	9.10	205819	9.09	206464	9.08	206056	9.07
	446.510	207560	8.80	205808	9.09	206131	9.10	206685	9.09	207331	9.08	207069	9.07
Discontinuation probability first cycle - Abatacept	0.435	207464	8.82	205748	9.11	206072	9.12	206625	9.11	207337	9.10	207003	9.09
	0.557	206643	8.78	205002	9.07	205325	9.08	205878	9.07	206458	9.06	206122	9.05
Discontinuation probability first cycle - Rituximab	0.433	206745	8.81	205121	9.10	205445	9.11	205998	9.10	206644	9.09	206279	9.08
	0.547	207362	8.79	205628	9.07	205952	9.09	206505	9.08	207151	9.07	206846	9.06
Discontinuation probability first cycle - Tocilizumab	0.425	207425	8.82	205711	9.10	206034	9.11	206656	9.10	207301	9.10	206968	9.09
	0.575	206682	8.78	205039	9.07	205362	9.08	205847	9.07	206494	9.07	206158	9.06
Discontinuation probability first cycle (<61 years) - TNFi	0.246	207166	8.83	205484	9.11	205840	9.12	206394	9.11	207038	9.11	206705	9.10
	0.336	206935	8.77	205260	9.06	205549	9.07	206102	9.06	206749	9.06	206412	9.05
Discontinuation probability first cycle (<61 years) - Tofacitinib	0.225	207053	8.80	205278	9.10	205631	9.11	206213	9.10	206893	9.10	206541	9.09
	0.315	207053	8.80	205475	9.07	205768	9.08	206291	9.07	206902	9.07	206585	9.06
Discontinuation probability first cycle (>61 years) - TNFi	0.267	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	0.314	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Discontinuation probability first cycle (>61 years) - Tofacitinib	0.264	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	0.311	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Discontinuation probability subsequent cycles - Abatacept	0.075	207601	8.83	205838	9.11	206161	9.12	206715	9.11	207460	9.10	207125	9.10
	0.107	206583	8.78	204971	9.07	205294	9.08	205847	9.07	206411	9.06	206075	9.05
Discontinuation probability subsequent cycles - Rituximab	0.099	206815	8.81	205178	9.10	205501	9.11	206054	9.10	206700	9.09	206334	9.08
	0.123	207273	8.79	205557	9.08	205880	9.09	206434	9.08	207080	9.07	206772	9.06
Discontinuation probability subsequent cycles - Tocilizumab	0.099	207205	8.81	205502	9.09	205825	9.10	206411	9.09	207055	9.09	206720	9.08
	0.113	206910	8.79	205254	9.08	205577	9.09	206101	9.08	206748	9.08	206413	9.07
Discontinuation probability subsequent cycles (<61 years) - TNFi	0.491	207201	8.83	205497	9.11	205869	9.12	206418	9.11	207058	9.11	206724	9.10
	0.558	206915	8.77	205259	9.06	205539	9.07	206095	9.06	206745	9.06	206410	9.05
Discontinuation probability subsequent cycles (<61 years) - Tofacitinib	0.674	207053	8.80	205277	9.10	205636	9.11	206224	9.10	206909	9.10	206554	9.09
	0.727	207053	8.80	205467	9.07	205756	9.08	206278	9.07	206888	9.07	206572	9.06
Discontinuation probability subsequent cycles (>61 ans) - TNFi	0.821	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	0.859	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Discontinuation probability subsequent cycles (>61 ans) - Tofacitinib	0.813	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	0.852	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Discount rate	0.000	290994	12.00	290070	12.39	290156	12.41	290561	12.41	291079	12.41	290892	12.40
	0.023	164297	7.13	162315	7.36	162774	7.37	163402	7.35	164092	7.35	163712	7.34
Drug acquisition cost - Abatacept	3222.490	197653	8.80	197261	9.09	197582	9.10	198130	9.09	197497	9.08	197162	9.07
	5370.820	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Drug acquisition cost - Methotrexate	26.240	206803	8.80	205123	9.09	205446	9.10	205999	9.09	206645	9.08	206310	9.07
	31.490	207003	8.80	205325	9.09	205648	9.10	206201	9.09	206847	9.08	206512	9.07
Drug acquisition cost - Rituximab	2117.930	204650	8.80	203323	9.09	203646	9.10	204198	9.09	204843	9.08	204159	9.07
	2823.910	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Drug acquisition cost - TNFi	3702.830	174801	8.80	178460	9.09	178112	9.10	178660	9.09	179302	9.08	178953	9.07
	4937.110	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Drug acquisition cost - Tocilizumab	3222.490	197756	8.80	197240	9.09	197561	9.10	196954	9.09	197600	9.08	197265	9.07
	5370.820	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
Drug acquisition cost - Tofacitinib	2674.200	207053	8.80	194357	9.09	195643	9.10	197152	9.09	198851	9.08	199395	9.07
	4457.000	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
HAQ changes first cycle - Abatacept	-0.446	207053	8.80	205375	9.08	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	-0.454	207072	8.80	205404	9.09	205727	9.10	206281	9.09	206917	9.09	206581	9.08
HAQ changes first cycle - Palliative Care	-0.149	206245	8.60	204804	8.93	205127	8.95	205679	8.94	206325	8.93	205989	8.92
	-0.251	207847	9.00	205889	9.24	206212	9.25	206766	9.24	207412	9.23	207077	9.22
HAQ changes first cycle - Rituximab	-0.331	206835	8.75	205114	9.04	205437	9.05	205991	9.04	206637	9.04	206344	9.02
	-0.469	207149	8.85	205506	9.13	205829	9.14	206383	9.13	207029	9.12	206658	9.12
HAQ changes first cycle - Tocilizumab	-0.386	207053	8.80	205375	9.08	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	-0.394	207062	8.80	205390	9.09	205713	9.10	206260	9.09	206906	9.09	206571	9.08
HAQ changes first cycle (<61 years) - TNFi	-0.536	207053	8.80	205375	9.08	205698	9.09	206252	9.08	206898	9.08	206563	9.07
	-0.544	207053	8.81	205375	9.09	205698	9.10	206252	9.09	206898	9.09	206563	9.08
HAQ changes first cycle (<61 years) - Tofacitinib	-0.516	207053	8.80	205375	9.08	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	-0.524	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
HAQ changes first cycle (>61 years) - TNFi	-0.458	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	-0.462	207061	8.80	205391	9.09	205705	9.10	206259	9.09	206905	9.08	206570	9.07
HAQ changes first cycle (>61 years) - Tofacitinib	-0.498	207053	8.80	205375	9.09	205698	9.10	206252	9.09	206898	9.08	206563	9.07
	-0.502	207053	8.80	205375	9.09	205703	9.10	206260	9.09	206910	9.08	206581	9.07

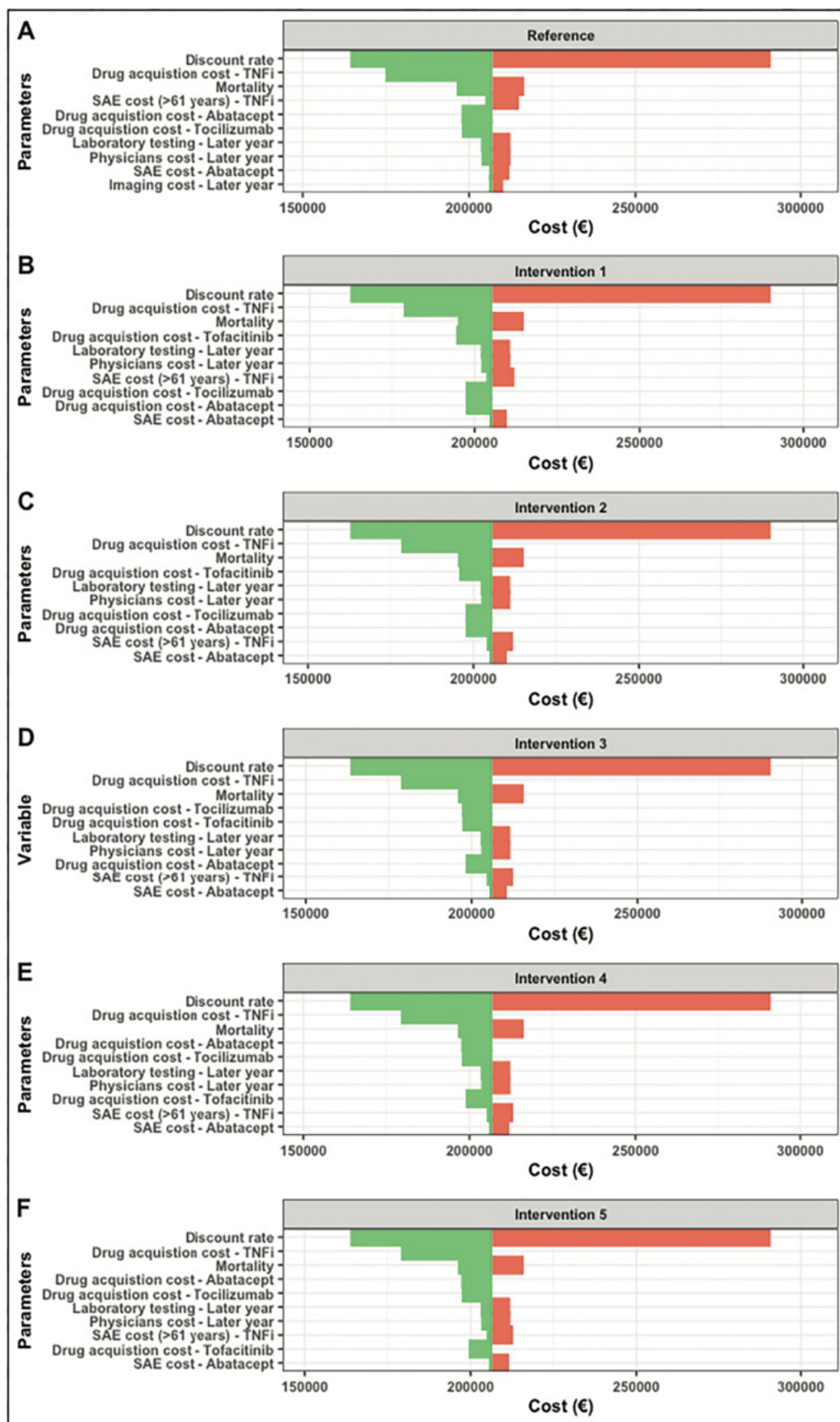
Parameters	Value	Reference		Intervention 1		Intervention 2		Intervention 3		Intervention 4		Intervention 5	
		Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY	Cost (€)	QALY
Imaging cost - First year	2.368	207008	8.80	205329	9.09	205652	9.10	206206	9.09	206852	9.08	206517	9.07
	75.784	207153	8.80	205475	9.09	205798	9.10	206351	9.09	206997	9.08	206662	9.07
Imaging cost - Later year	0.649	205935	8.80	204250	9.09	204573	9.10	205126	9.09	205771	9.08	205436	9.07
	120.016	210263	8.80	208603	9.09	208927	9.10	209482	9.09	210128	9.08	209795	9.07
Laboratory testing - First year	278.645	207339	8.80	205661	9.09	205984	9.10	206538	9.09	207183	9.08	206849	9.07
	42.795	206872	8.80	205193	9.09	205516	9.10	206070	9.09	206716	9.08	206381	9.07
Laboratory testing - Later year	298.511	212383	8.80	210737	9.09	211061	9.10	211616	9.09	212264	9.08	211930	9.07
	54.314	203530	8.80	201830	9.09	202153	9.10	202705	9.09	203350	9.08	203014	9.07
Mortality	High	196250	8.42	194900	8.71	195249	8.72	195835	8.71	196511	8.70	196174	8.70
	Low	216558	9.14	214850	9.43	215155	9.44	215691	9.43	216317	9.43	216000	9.42
Physicians cost - First year	254.680	207336	8.80	205658	9.09	205981	9.10	206535	9.09	207181	9.08	206846	9.07
	27.801	206886	8.80	205208	9.09	205531	9.10	206085	9.09	206730	9.08	206396	9.07
Physicians cost - Later year	282.708	212427	8.80	210781	9.09	211105	9.10	211660	9.09	212307	9.08	211974	9.07
	41.260	203673	8.80	201974	9.09	202297	9.10	202849	9.09	203494	9.08	203158	9.07
SAE cost - Abatacept	0.383	205988	8.80	204455	9.09	204778	9.10	205331	9.09	205832	9.08	205497	9.07
	18727.134	212097	8.80	209728	9.09	210052	9.10	210609	9.09	211941	9.08	211606	9.07
SAE cost - Rituximab	10131.012	208705	8.80	206785	9.09	207109	9.10	207663	9.09	208310	9.08	208214	9.07
	224.324	206339	8.80	204765	9.09	205088	9.10	205641	9.09	206286	9.08	205848	9.07
SAE cost - Tocilizumab	12741.153	208648	8.80	206770	9.09	207093	9.10	207846	9.09	208492	9.08	208157	9.07
	96.235	206472	8.80	204866	9.09	205189	9.10	205670	9.09	206316	9.08	205981	9.07
SAE cost (<61 years) - TNFi	11430.951	209540	8.80	207367	9.09	208185	9.10	208739	9.09	209384	9.08	209050	9.07
	235.200	205991	8.80	204524	9.09	204636	9.10	205189	9.09	205835	9.08	205500	9.07
SAE cost (<61 years) - Tofacitinib	14766.027	207053	8.80	208154	9.09	207772	9.10	207841	9.09	208016	9.08	207340	9.07
	24.996	207053	8.80	204536	9.09	205072	9.10	205772	9.09	206560	9.08	206328	9.07
SAE cost (>61 years) - TNFi	15.354	204788	8.80	203482	9.09	203917	9.10	204470	9.09	205115	9.08	204779	9.07
	15201.397	214985	8.80	212000	9.09	211934	9.10	212489	9.09	213136	9.08	212806	9.07
SAE cost (>61 years) - Tofacitinib	119.861	207053	8.80	205337	9.09	205535	9.10	206025	9.09	206617	9.08	206252	9.07
	12183.434	207053	8.80	205475	9.09	206127	9.10	206850	9.09	207636	9.08	207382	9.07
SAE probability - Abatacept	0.063	206888	8.80	205232	9.09	205556	9.10	206109	9.09	206732	9.08	206398	9.07
	0.087	207231	8.80	205529	9.09	205852	9.10	206405	9.09	207075	9.08	206741	9.07
SAE probability - Rituximab	0.062	206960	8.80	205295	9.09	205618	9.10	206171	9.09	206817	9.08	206469	9.07
	0.080	207156	8.80	205462	9.09	205785	9.10	206339	9.09	206985	9.08	206665	9.07
SAE probability - Tocilizumab	0.035	206985	8.80	205315	9.09	205638	9.10	206183	9.09	206829	9.08	206494	9.07
	0.045	207126	8.80	205439	9.09	205762	9.10	206324	9.09	206970	9.08	206635	9.07
SAE probability (<61 years) - TNFi	0.070	206793	8.80	205189	9.09	205475	9.10	206029	9.09	206675	9.08	206340	9.07
	0.083	207068	8.80	205385	9.09	205710	9.10	206264	9.09	206910	9.08	206575	9.07
SAE probability (<61 years) - Tofacitinib	0.068	207053	8.80	205235	9.09	205594	9.10	206172	9.09	206841	9.08	206523	9.07
	0.083	207053	8.80	205388	9.09	205708	9.10	206259	9.09	206903	9.08	206566	9.07
SAE probability (>61 years) - TNFi	0.190	206861	8.80	205197	9.09	205533	9.10	206086	9.09	206732	9.08	206397	9.07
	0.232	207257	8.80	205563	9.09	205873	9.10	206427	9.09	207073	9.08	206738	9.07
SAE probability (>61 years) - Tofacitinib	0.220	207053	8.80	205371	9.09	205681	9.10	206228	9.09	206868	9.08	206530	9.07
	0.264	207053	8.80	205379	9.09	205716	9.10	206276	9.09	206928	9.08	206597	9.07



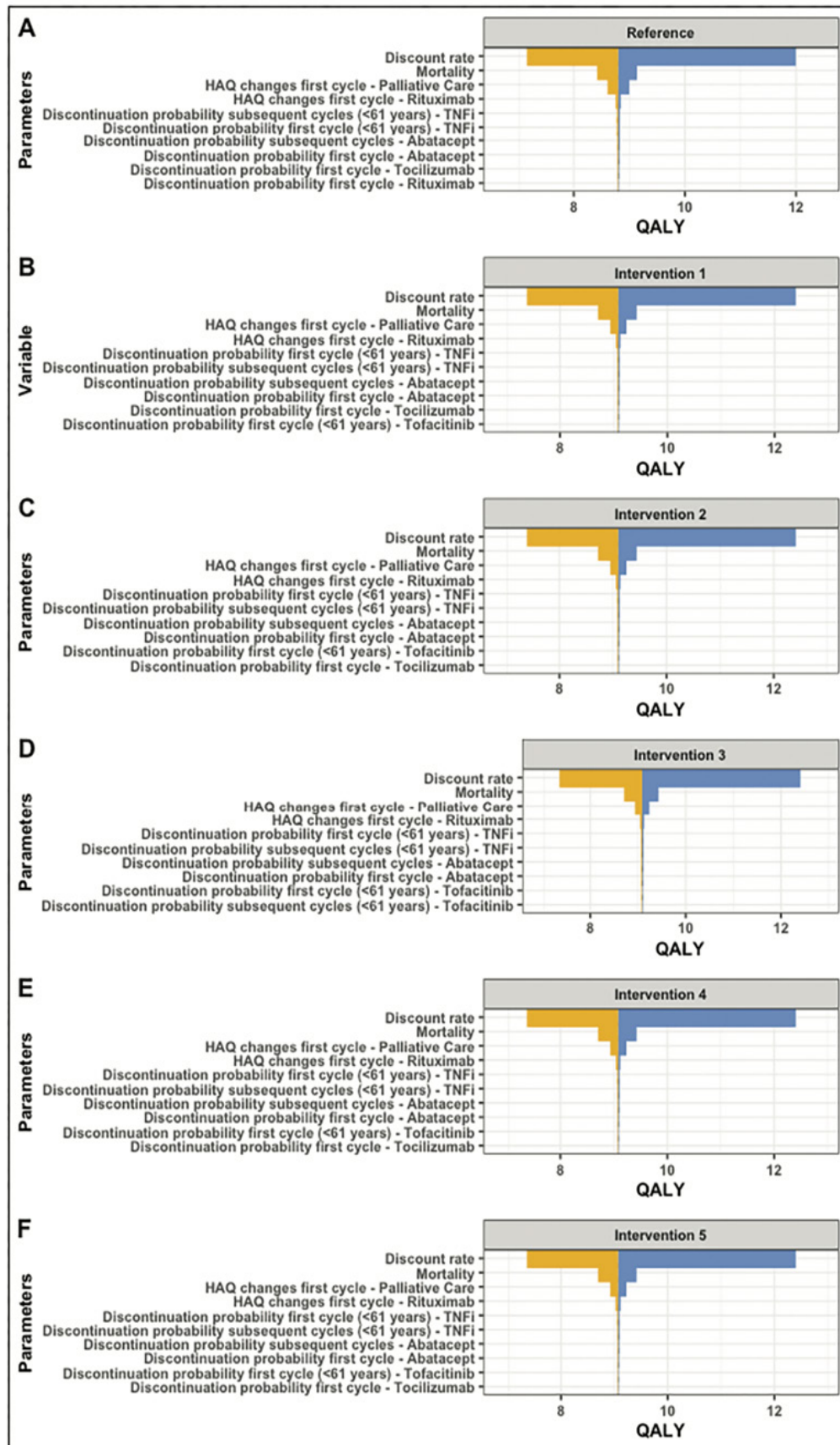
Supplementary Fig. S1. Scatter plot on the cost-effectiveness plane of “bootstrapped”. Each point represents a sample generated by the bootstrap method. Blue points are within the 95% confidence interval (represented by solid lines). The black dashed line represents the center of the confidence interval. The orange dashed line represents the threshold of acceptability at €30,000 per QALY.



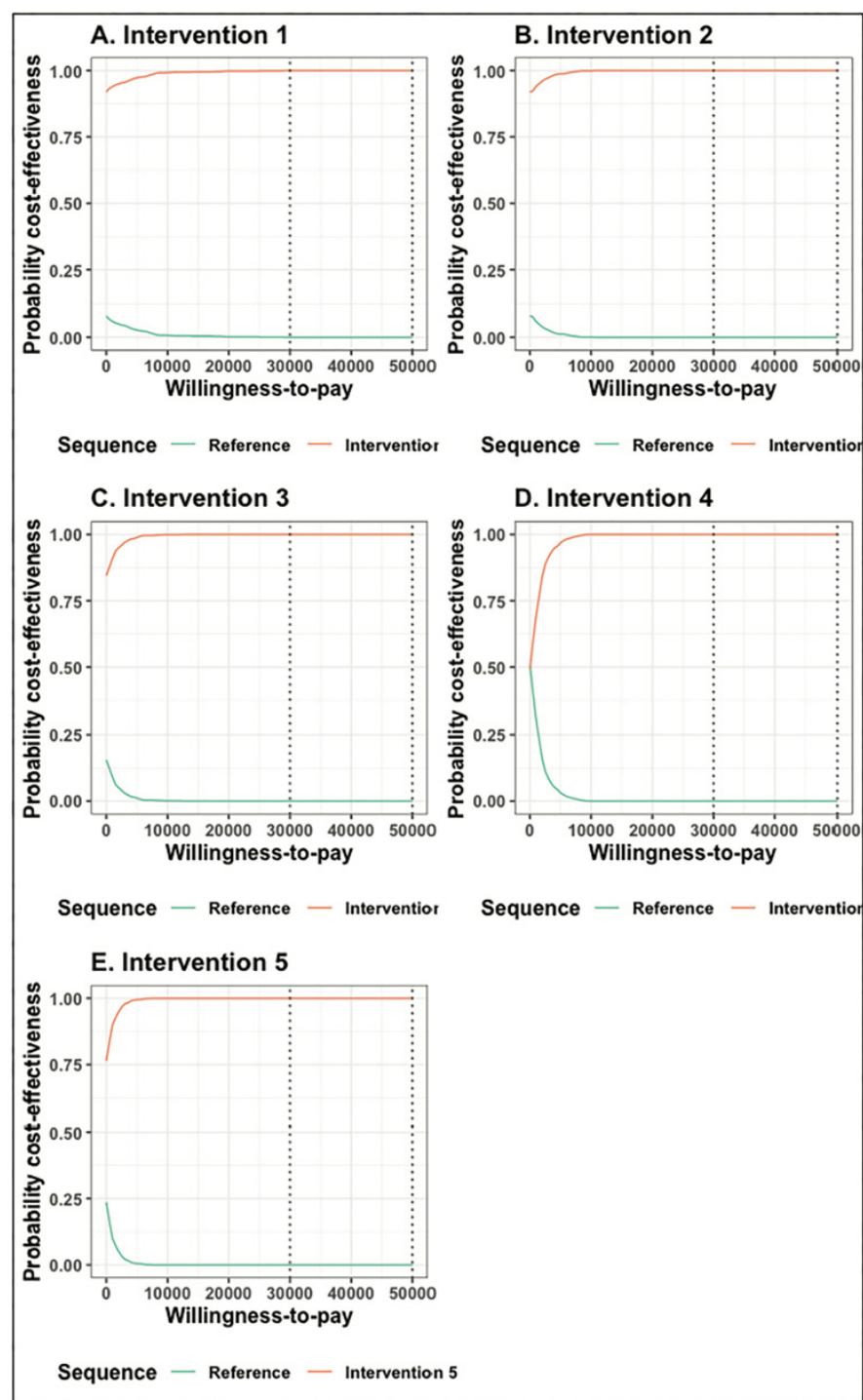
Supplementary Fig. S2. Evolution of the cohort by state. TNFi: tumour necrosis factor inhibitor



Supplementary Fig. S3. Tornado graph of one-way sensitivity analysis on the 10 parameters influencing most the costs (€). Green bars represent a decrease in costs, red bars represent an increase in costs. SAE: serious adverse event.



Supplementary Fig. S4. Tornado graph of one-way sensitivity analysis on the 10 variables influencing most the Quality-Adjusted Life Years (QALY). Blue bars represent an increase in QALYs, yellow bars represent a decrease in QALYs.



Supplementary Fig. S5. Cost-effective acceptability curve

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