

Table 1

Subgroup	Number of studies	Priors						RECOVERY					
		Control			Tocilizumab			Control			Tocilizumab		
		Events	Total	Risk (%)	Events	Total	Risk (%)	Events	Total	Risk (%)	Events	Total	Risk (%)
Use of corticosteroids													
Not using	2	19	101	18.8	35	225	15.6	127	367	34.6	139	357	38.9
Using	2	152	440	34.5	131	464	28.2	600	1721	34.9	482	1664	29.0
Respiratory support													
Simple oxygen only	2	10	111	9.0	16	141	11.3	214	933	22.9	180	935	19.3
Non-invasive ventilation	3	95	375	25.3	73	396	18.4	366	867	42.2	310	819	37.9
Invasive mechanical ventilation	2	74	179	41.3	76	221	34.4	149	294	50.7	131	268	48.9

Table 2

Underlying Prior	Probability of Harm			Probability of Benefit			
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(> 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	5	18	25	67	58	48	22
Evidence-based	1	9	15	77	67	56	22
Skeptical	3	18	26	63	51	40	12
Optimistic	1	6	10	83	75	64	30
Pessimistic	11	38	50	38	27	18	4

Supplementary Table 1

Respiratory support				
Subgroup		Median	Lower limit	Upper limit
Priors				
Simple oxygen only		1.35	0.49	3.75
Non-invasive ventilation		0.65	0.45	0.92
Invasive mechanical ventilation		0.86	0.56	1.32
RECOVERY				
Simple oxygen only		0.80	0.64	1.00
Non-invasive ventilation		0.83	0.69	1.01
Invasive mechanical ventilation		0.93	0.67	1.30

95th interquantile intervals of priors and RECOVERY regarding respiratory support. This table complements Figure 1.

Supplementary Table 2

Subgroup	95% Highest Density Interval		
	Median	Lower limit	Upper limit
Use of corticosteroids			
Not using	-2.81	-9.23	3.45
Using	5.76	2.80	8.63
Respiratory support			
Simple oxygen only	3.31	-0.20	6.66
Non-invasive ventilation	5.73	1.70	9.62
Invasive mechanical ventilation	2.49	-4.07	8.86

95% highest density intervals of posterior distributions. This table complements Figure 2.

Supplementary Table 3

Subgroup	Probability of Risk Difference \geq X%			
	Pr(\geq 0%)	Pr(\geq 1%)	Pr(\geq 2%)	Pr(\geq 5%)
Use of corticosteroids				
Not using	18.9	11.5	6.3	0.6
Using	100.0	99.9	99.3	69.4
Respiratory support				
Simple oxygen only	96.2	89.7	76.6	16.0
Non-invasive ventilation	99.7	98.9	96.4	64.2
Invasive mechanical ventilation	77.3	67.3	55.8	22.4

Posterior probabilities of each subgroup. This table complements Figure 2.

Supplementary Table 4

Underlying Prior	Probability of Harm			Probability of Benefit			
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(> 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	43	74	82	11	7	4	0
Evidence-based	25	60	71	19	11	6	1
Skeptical	33	68	78	14	8	4	0
Optimistic	23	57	69	21	13	7	1
Pessimistic	44	78	86	8	4	2	0

Posteriors probabilities from sensitivity analyses regarding patients not using corticosteroids. This table complements Supplementary Figures 1 and 2.

Supplementary Table 5

Underlying_Prior	Median	.lower	.upper
Non-informative	-4.34	-11.53	2.75
Evidence-based	-2.81	-9.23	3.45
Skeptical	-3.54	-10.08	2.73
Optimistic	-2.60	-9.15	3.61
Pessimistic	-4.48	-11.04	1.88

95% highest density intervals from posterior distributions regarding patients not using corticosteroids. This table complements Supplementary Figures 1 and 2.

Supplementary Table 6

Underlying Prior	Probability of Harm			Probability of Benefit			
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(> 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	0	0	0	100	100	99	72
Evidence-based	0	0	0	100	100	99	69
Skeptical	0	0	0	100	100	99	65
Optimistic	0	0	0	100	100	99	72
Pessimistic	0	0	0	100	100	99	59

Posteriors probabilities from sensitivity analyses regarding patients using corticosteroids. This table complements Supplementary Figures 3 and 4.

Supplementary Table 7

Underlying_Prior	Median	.lower	.upper
Non-informative	5.90	2.86	8.81
Evidence-based	5.76	2.80	8.63
Skeptical	5.60	2.55	8.39
Optimistic	5.85	2.97	8.77
Pessimistic	5.36	2.43	8.30

95% highest density intervals from posterior distributions regarding patients using corticosteroids. This table complements Supplementary Figures 3 and 4.

Supplementary Table 8

Underlying Prior	Probability of Harm			Probability of Benefit			
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(> 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	0	0	1	97	93	82	22
Evidence-based	0	0	1	96	90	77	16
Skeptical	0	0	1	97	92	80	19
Optimistic	0	0	1	98	93	83	22
Pessimistic	0	0	1	97	90	78	17

Posteriors probabilities from sensitivity analyses regarding patients on simple oxygen only. This table complements Supplementary Figures 5 and 6.

Supplementary Table 9

Underlying_Prior	Median	.lower	.upper
Non-informative	3.68	0.10	7.03
Evidence-based	3.31	-0.20	6.66
Skeptical	3.52	0.00	6.77
Optimistic	3.70	0.16	6.90
Pessimistic	3.37	-0.13	6.70

95% highest density intervals from posterior distributions regarding patients on simple oxygen only. This table complements Supplementary Figures 5 and 6.

Supplementary Table 10

Underlying Prior	Probability of Harm			Probability of Benefit			
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(> 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	0	0	1	97	92	84	39
Evidence-based	0	0	0	100	99	96	64
Skeptical	0	1	2	95	87	75	22
Optimistic	0	0	0	99	96	89	42
Pessimistic	0	3	7	85	71	53	9

Posteriors probabilities from sensitivity analyses regarding patients on non-invasive ventilation. This table complements Supplementary Figures 7 and 8.

Supplementary Table 11

Underlying_Prior	Median	.lower	.upper
Non-informative	4.36	-0.24	8.91
Evidence-based	5.73	1.70	9.62
Skeptical	3.40	-0.71	7.45
Optimistic	4.57	0.46	8.44
Pessimistic	2.16	-2.00	6.25

95% highest density intervals from posterior distributions regarding patients on non-invasive ventilation.
This table complements Supplementary Figures 7 and 8.

Supplementary Table 12

Underlying_Prior	Median	.lower	.upper
Non-informative	4.36	-0.24	8.91
Evidence-based	5.73	1.70	9.62
Skeptical	3.40	-0.71	7.45
Optimistic	4.57	0.46	8.44
Pessimistic	2.16	-2.00	6.25

95% highest density intervals from posterior distributions regarding patients on invasive mechanical ventilation. This table complements Figure 3 and Supplementary Figure 9.

Supplementary Table 13

Subgroup	Number of studies	Priors						RECOVERY					
		Control			Tocilizumab			Control			Tocilizumab		
		Events	Total	Risk (%)	Events	Total	Risk (%)	Events	Total	Risk (%)	Events	Total	Risk (%)
Use of corticosteroids													
Not using	1	35	65	53.8	124	188	66.0	168	367	45.8	162	357	45.4
Using	1	36	79	45.6	42	106	39.6	873	1721	50.7	987	1664	59.3
Respiratory support													
Simple oxygen only	2	84	111	75.7	118	141	83.7	635	933	68.1	697	935	74.5
Non-invasive ventilation	2	77	102	75.5	110	154	71.4	362	867	41.8	401	819	49.0
Invasive mechanical ventilation	1	13	55	23.6	35	113	31.0	47	294	16.0	52	268	19.4

Number of events and sample size regarding the hospital discharge outcome.

Supplementary Table 14

Underlying Prior	Probability of Benefit				Probability of Harm		
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(< 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	7	26	35	46	43	33	10
Evidence-based	21	54	65	76	16	10	1
Skeptical	5	24	35	46	42	30	8
Optimistic	11	36	48	60	29	20	4
Pessimistic	3	15	23	33	55	43	14

Posteriors probabilities from sensitivity analyses using different priors. This table complements Supplementary Figure 16.

Supplementary Table 15

Underlying Prior	Probability of Benefit				Probability of Harm		
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(< 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	98	100	100	100	0	0	0
Evidence-based	96	100	100	100	0	0	0
Skeptical	97	100	100	100	0	0	0
Optimistic	98	100	100	100	0	0	0
Pessimistic	96	100	100	100	0	0	0

Posteriors probabilities from sensitivity analyses using different priors. This table complements Supplementary Figure 17.

Supplementary Table 16

Underlying Prior	Probability of Benefit				Probability of Harm		
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(< 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	77	99	100	100	0	0	0
Evidence-based	82	99	100	100	0	0	0
Skeptical	69	98	99	100	0	0	0
Optimistic	76	99	100	100	0	0	0
Pessimistic	61	96	99	100	0	0	0

Posteriors probabilities from sensitivity analyses using different priors. This table complements Supplementary Figure 18.

Supplementary Table 17

Underlying Prior	Probability of Benefit				Probability of Harm		
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(< 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	82	98	99	100	0	0	0
Evidence-based	82	99	100	100	0	0	0
Skeptical	76	98	99	100	0	0	0
Optimistic	81	99	100	100	0	0	0
Pessimistic	69	96	99	100	0	0	0

Posteriors probabilities from sensitivity analyses using different priors. This table complements Supplementary Figure 19.

Supplementary Table 18

Underlying Prior	Probability of Benefit				Probability of Harm		
	Pr(< -5%)	Pr(< -2%)	Pr(< -1%)	Pr(< 0%)	Pr(> 1%)	Pr(> 2%)	Pr(> 5%)
Non-informative	33	66	77	85	8	4	0
Evidence-based	37	75	85	92	4	1	0
Skeptical	20	57	70	82	9	4	0
Optimistic	30	68	80	89	5	2	0
Pessimistic	13	45	59	73	15	8	0

Posteriors probabilities from sensitivity analyses using different priors. This table complements Supplementary Figure 20.