Appendix 6 (as supplied by the authors): Forest plot

ARDS

Figure 1 Effect of corticosteroids on length of ICU stay in ARDS patients

	Cortic	ostero	ids	C	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Liu 2012	13.3	8.38	12	7.37	4.11	14	20.6%	5.93 [0.72, 11.14]	
Meduri 2007	6.25	2.27	63	8	5.27	28	40.5%	-1.75 [-3.78, 0.28]	
Steinberg 2006	14.5	7.91	89	15.5	7.53	91	38.9%	-1.00 [-3.26, 1.26]	
Total (95% CI)			164			133	100.0%	0.12 [-2.98, 3.23]	*
Heterogeneity: Tau* = Test for overall effect:				2 (P = 0).03); P	*= 73%	•		-10 -5 0 5 10 Corticosteroid Placebo

Figure 2 Effect of corticosteroids on length of hospital stay in ARDS patients

	Corti	Corticosteroids Control				Mean Difference	Mean Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Meduri 2007	10.5	4.93	63	17.8	11.72	28	32.3%	-7.30 [-11.81, -2.79]	
Steinberg 2006	19.5	12.81	89	22	7.9	91	44.1%	-2.50 [-5.62, 0.62]	
Zhao 2014	16	10.74	24	16.62	11.21	29	23.6%	-0.62 [-6.55, 5.31]	-
Total (95% CI)			176			148	100.0%	-3.61 [-7.20, -0.02]	•
Heterogeneity: Tau* = Test for overall effect				2 (P = 0	.13); [*=	: 50%			-20 -10 0 10 20 Corticosteroids Placebo

Figure 3 Effect of corticosteroids on duration of mechanical ventilation in ARDS patients

	Cortic	ostero	ids	C	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Meduri 2007	4	1.89	63	8.75	5.27	91	19.3%	-4.75 [-5.93, -3.57]	*
Rezk 2013	10.56	4.41	18	20.33	1.86	9	16.5%	-9.77 [-12.14, -7.40]	
Steinberg 2006	9.75	6.02	89	15.25	8.66	91	17.1%	-5.50 [-7.67, -3.33]	
Tongyoo 2016	11.8	7.8	98	13.9	9	99	16.6%	-2.10 [-4.45, 0.25]	
Villar 2020	14.3	13.3	139	20.2	14	138	14.3%	-5.90 [-9.12, -2.68]	
Zhao 2014	10.54	4.61	24	11.55	4.58	29	16.2%	-1.01 [-3.50, 1.48]	-
Total (95% CI)			431			457	100.0%	-4.83 [-7.03, -2.62]	•
Heterogeneity: Tau* =	6.21; Ch		-10 -5 0 5 10						
Test for overall effect	Z= 4.28	Corticosteroid Placebo							

Figure 4 Effect of corticosteroids on serious hyperglycemia in ARDS patients

	Corticoste	roids	Control			Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Meduri 2007	45	63	18	28	10.6%	1.11 [0.81, 1.53]	
Tongyoo 2016	79	98	67	99	38.1%	1.19 [1.01, 1.41]	-
Villar 2020	105	139	97	138	51.4%	1.07 [0.93, 1.24]	-
Total (95% CI)		300		265	100.0%	1.12 [1.01, 1.24]	•
Total events	229		182				
Heterogeneity: Tau* =	0.00; Chi*=	0.84, df	= 2 (P =	0.66); [2 = 0%		05 07 1 15 2
Test for overall effect	Z= 2.18 (P :	= 0.03)					Corticosteroid Placebo

Figure 5 Effect of corticosteroids on neuromuscular weakness in ARDS patients

	Corticoste	roids	Contr	lon		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Meduri 2007	4	63	1	28	2.2%	1.78 [0.21, 15.20]	
Steinberg 2006	37	89	45	91	97.8%	0.84 [0.61, 1.16]	=
Total (95% CI)		152		119	100.0%	0.85 [0.62, 1.18]	•
Total events	41		46				
Heterogeneity: Tau ² =			0.05 0.2 1 5 20				
Test for overall effect:	Z= 0.97 (P=	0.33)					Corticosteroid Placebo

Figure 6 Effect of corticosteroids on gastrointestinal bleeding in ARDS patients

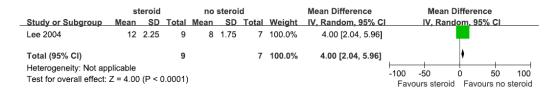
	Corticoste	Contr	rol		Risk Ratio	Risk Ratio	
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Tongyoo 2016	3	98	4	99	36.0%	0.76 [0.17, 3.30]	
Zhao 2014	4	24	7	29	64.0%	0.69 [0.23, 2.08]	-
Total (95% CI)		122		128	100.0%	0.71 [0.30, 1.73]	•
Total events	7		11				
Heterogeneity: Tau ² =	0.00; Chi*=	0.01, df	= 1 (P =	0.92); P	= 0%		0.01 0.1 1 10 100
Test for overall effect:	Z= 0.75 (P=	0.45)					Corticosteroid Placebo

Figure 7 Effect of corticosteroids on super-infection in ARDS patients

	Corticoste	roids	Contr	rol		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Meduri 2007	27	63	17	28	24.0%	0.71 [0.47, 1.07]	
Steinberg 2006	20	89	30	91	17.8%	0.68 [0.42, 1.11]	
Tongyoo 2016	34	98	41	99	30.7%	0.84 [0.59, 1.20]	
Villar 2020	33	139	35	138	23.9%	0.94 [0.62, 1.41]	
Zhao 2014	7	24	4	29	3.7%	2.11 [0.70, 6.37]	
Total (95% CI)		413		385	100.0%	0.82 [0.67, 1.02]	•
Total events	121		127				
Heterogeneity: Tau ² =	0.00; Chi ² =	4.35, df	= 4 (P =	0.36); F	= 8%		0.5 0.7 1 1.5 2
Test for overall effect:	Z=1.79 (P:	0.07)					Corticosteroid Placebo

SARS

Figure 8 Effect of corticosteroids on Median time for CoV RNA to become undetectable in plasma in SARS patients



Influenza

Figure 9 Effect of corticosteroids on superinfection in influenza patients

Appendix to: Ye Z, Wang Y, Colunga-Lozano LE, et al. Efficacy and safety of corticosteroids in COVID-19 based on evidence for COVID-19, other coronavirus infections, influenza, community-acquired pneumonia and acute respiratory distress syndrome: a systematic review and meta-analysis. *CMAJ* 2020. doi: 10.1503/cmaj.200645. Copyright © 2020 Joule Inc. or its licensors

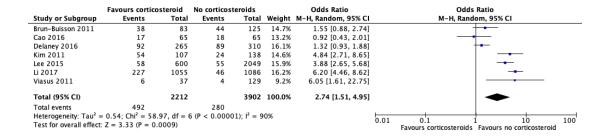


Figure 10 Effect of corticosteroids on rate of mechanical ventilation in influenza patients

	Favours cortico	steroid	No corticosteroids			Odds Ratio		Odds Ratio		
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI		M-H, Random, 9	5% CI	
Kim 2011	91	107	71	138	24.5%	5.37 [2.87, 10.05]			-	
Li 2017	367	1055	49	1086	26.0%	11.29 [8.25, 15.44]			-	
Linko 2011	53	72	14	60	23.4%	9.17 [4.14, 20.30]				
Moreno 2018	506	604	921	1242	26.2%	1.80 [1.40, 2.31]		-		
Total (95% CI)		1838		2526	100.0%	5.54 [1.83, 16.80]		-		
Total events	1017		1055							
Heterogeneity: Tau2	= 1.21; Chi ² = 86.	89, df = 3	B (P < 0.0000)	1); $I^2 = 9$	7%		0.01		10	-
Test for overall effect	ct: Z = 3.03 (P = 0.	002)					0.01	Favours corticosteroids Favou	10 urs no corticosteroid]

CAP

Figure 11 Effect of corticosteroids on length of ICU stay in CAP patients

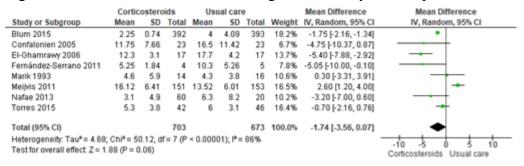


Figure 12 Effect of corticosteroids on length of hospital stay in CAP patients

	Cortic	ostero	ids	Us	ual car	Ð		Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Blum 2015	7.4	5	392	8.8	4.8	393	30.0%	-1.40 [-2.09, -0.71]	•
Confalonieri 2005	25.3	33.8	23	32	54.2	23	0.1%	-6.70 [-32.80, 19.40]	·
El-Ghamrawy 2006	16.4	3.9	17	23.1	6.3	17	6.5%	-6.70 [-10.22, -3.18]	
Fernández-Serrano 2011	10.7	3.1	23	13	7.1	22	7.5%	-2.30 [-5.53, 0.93]	
Gang 2016	28.5	8.61	29	36.21	15.26	29	2.3%	-7.71 [-14.09, -1.33]	
Meijvis 2011	6.8	3	151	8.1	4.6	153	27.6%	-1.30 [-2.17, -0.43]	-
Mikami 2007	11.3	5.5	15	15.5	10.7	16	2.6%	-4.20 [-10.14, 1.74]	
Nafae 2013	9.3	2.4	0	16.5	2.2	0		Not estimable	
Snijders 2010	10	12	104	10.6	12.8	109	7.2%	-0.60 [-3.93, 2.73]	_
Torres 2015	10.8	4.9	61	11.2	5.3	59	16.1%	-0.40 [-2.23, 1.43]	+
Total (95% CI)			815			821	100.0%	-1.79 [-2.79, -0.80]	•
Heterogeneity: Tau ² = 0.74;	-10 -5 0 5 10								
Test for overall effect: $Z = 3$.	Corticosteroids Usual care								

Figure 13 Effect of corticosteroids on the need of mechanical ventilation in CAP

Appendix to: Ye Z, Wang Y, Colunga-Lozano LE, et al. Efficacy and safety of corticosteroids in COVID-19 based on evidence for COVID-19, other coronavirus infections, influenza, community-acquired pneumonia and acute respiratory distress syndrome: a systematic review and meta-analysis. *CMAJ* 2020. doi: 10.1503/cmaj.200645. Copyright © 2020 Joule Inc. or its licensors

patients

	Corticoste	roids	Usual o	care		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Blum 2015	1	391	6	387	7.9%	0.16 [0.02, 1.36]	
Fernández-Serrano 2011	0	23	3	19	4.2%	0.12 [0.01, 2.17]	
Marik 1993	2	12	4	12	15.8%	0.50 [0.11, 2.23]	
Nafae 2013	8	52	5	15	38.5%	0.46 [0.18, 1.20]	
Torres 2015	5	56	9	50	33.7%	0.50 [0.18, 1.38]	
Total (95% CI)		534		483	100.0%	0.42 [0.23, 0.76]	•
Total events	16		27				
Heterogeneity: Tau* = 0.00;	Chi*= 1.77,	df = 4 (F	= 0.78);	P = 0%			0.01 0.1 1 10 100
Test for overall effect: $Z = 2$.	88 (P = 0.004	(1)					Corticosteroids Usual care

Figure 14 Effect of corticosteroids on duration of mechanical ventilation in CAP patients

	Cortic	ostero	ids	Usu	ial car	e		Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI
Confalonieri 2005	9	7.5	15	15	16.5	19	3.8%	-6.00 [-14.33, 2.33]	
El-Ghamrawy 2006	6.1	1.4	17	11.3	2.9	17	32.9%	-5.20 [-6.73, -3.67]	-
Gang 2016	13.39	2.62	29	16.16	5.85	29	24.3%	-2.77 [-5.10, -0.44]	-
Nafae 2013	1.2	3.75	8	4.3	7.83	5	4.8%	-3.10 [-10.44, 4.24]	
Sabry 2011	4.6	3.5	34	6.8	2.04	26	34.2%	-2.20 [-3.61, -0.79]	-
Total (95% CI)			103			96	100.0%	-3.51 [-5.21, -1.82]	•
Heterogeneity: Tau* =	-10 -5 0 5 10								
Test for overall effect	Z = 4.06	Corticosteroids Usual care							

Figure 15 Effect of corticosteroids on serious hyperglycemia in CAP patients

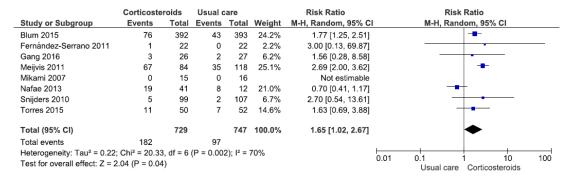


Figure 16 Effect of corticosteroids on gastrointestinal bleeding in CAP patients

	Corticoste	roids	Usual o	care		Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
Blum 2015	3	389	4	389	30.3%	0.75 [0.17, 3.33]	
Confalonieri 2005	1	22	1	23	9.2%	1.05 [0.07, 15.70]	
El-Ghamrawy 2006	2	15	1	16	12.8%	2.13 [0.22, 21.17]	
Fernández-Serrano 2011	1	22	0	22	6.8%	3.00 [0.13, 69.87]	-
Gang 2016	1	28	0	29	6.7%	3.10 [0.13, 73.12]	
Nafae 2013	1	59	1	19	9.1%	0.32 [0.02, 4.90]	-
Sabry 2011	2	38	2	38	18.5%	1.00 [0.15, 6.74]	
Torres 2015	0	61	1	58	6.7%	0.32 [0.01, 7.63]	•
Total (95% CI)		634		594	100.0%	0.99 [0.43, 2.24]	*
Total events	11		10				
Heterogeneity: Tau* = 0.00;	$Chi^2 = 2.69$,	df = 7 (P	= 0.91);	$l^2 = 0\%$			0.01 0.1 1 10 100
Test for overall effect: Z = 0.	03 (P = 0.97)						0.01 0.1 1 10 100 Corticosteroids Usual care

Appendix to: Ye Z, Wang Y, Colunga-Lozano LE, et al. Efficacy and safety of corticosteroids in COVID-19 based on evidence for COVID-19, other coronavirus infections, influenza, community-acquired pneumonia and acute respiratory distress syndrome: a systematic review and meta-analysis. *CMAJ* 2020. doi: 10.1503/cmaj.200645. Copyright © 2020 Joule Inc. or its licensors

Figure 17 Effect of corticosteroids on neuropsychiatric events in CAP patients

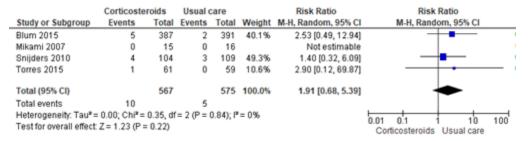


Figure 18 Effect of corticosteroids on super-infection in CAP patients

