Supplementary Online Content

Sun M, Lai H, Na F, et al. Monoclonal antibody for the prevention of respiratory syncytial virus in infants and children: a systematic review and network meta-analysis. *JAMA Netw Open*. 2023;6(2):e230023. doi:10.1001/jamanetworkopen.2023.0023

This supplementary material has been provided by the authors to give readers additional information about their work.

eMethods

Statistical Analysis

Network meta-analysis: We conducted a random-effect model network meta-analysis using a consistency model with "netmeta V1.0-1" package under a frequentist framework in R 1.3.1093 software. Frequentist results were shown in league tables. A league table is a square matrix showing all pairwise comparisons in a network meta-analysis. Typically, both treatment estimates and confidence intervals are shown. The netsplit function was used to assess the inconsistency between direct and indirect estimates and obtain indirect effect estimates. Network estimates that have indirect and direct evidence, these estimates are split into three components. The network estimate, indirect estimate and direct estimate are inspected for consistency. Consistency is assessed mainly by inspection of the point estimate and the confidence intervals. P-scores were used to rank each intervention with the interpretation of the mean extent of certainty that one intervention was better than the other. We used contribute plots to presents the contribution of every interventions. This fuction generates the contribution of direct comparisons to every network treatment comparison. The contribution matrix shows how much each direct treatment effect contributes to each treatment effect estimate from network meta-analysis. The output is a matrix where rows represent network treatment effects and columns represent the contribution of direct treatment effects.

Pairwise meta-analyses: Pairwise meta-analyses were performed using RevMan 5.4.1, and the data were synthesized with a random-effects model to obtain direct effect estimates for each pairwise comparison.

Subgroup analysis, meta-regression, and sensitivity analysis: We conducted the subgroup analysis in direct comparisons for a priori specified variables including health status (healthy vs unhealthy, a predefined hypothesis of larger effect in unhealthy population; unhealthy was defined as participants reported having high-risk factors at baseline). We also performed meta-regression in gestational age, and ratio of male and female. Meta-regression is similar to simple regression, where the outcome of interest is predicted on the basis of one or more explanatory variables. Besides, we performed sensitivity analyses to observe the robustness of results by repeating the analyses using a bayesian hierarchical model, and using both fixed-effects model and random-effects model.

eResults

Network meta-analysis: Frequentist results were shown in league tables (appendix table S7-20). P-scores were used to rank each intervention with the interpretation of the mean extent of certainty that one intervention was better than the other (appendix table S21). The network plots were shown in appendix figure S2-9. The line width is proportional to the number of studies comparing each pair of interventions, and the size of each node is proportional to the number of participants (sample size). The node-split plots were shown in appendix figure S48-61. The contribute plots were shown in appendix figure S62-68, the matrix showed how much each direct treatment effect contributes to each treatment effect estimate from network meta-analysis.
Pairwise meta-analyses: Results of pairwise meta-analyses were shown in forest plots (appendix figure S10-46). Funnel plot of all-cause mortality was presented in appendix figure S47, showing that there may be no publication bias.
Subgroup analysis, meta-regression, and sensitivity analysis: Bayesian results were shown in league tables as sensitivity analyses (appendix table S31-46).

Appendix table S1: detailed search strategy

Database: PubMed <Mar 13, 2022>

Search Strategy:

#	Searches	Results
1	"Palivizumab" [Mesh]	825
2	((MEDI 493[Title/Abstract]) OR (MEDI-493[Title/Abstract]) OR (MEDI493[Title/Abstract]) OR (Monoclonal Antibody MEDI-493[Title/Abstract]) OR (Monoclonal Antibody MEDI 493[Title/Abstract]) OR (Monoclonal Antibody MEDI493[Title/Abstract]))	9
3	"Synagis" [Title/Abstract]	107
4	or/1-3	864
5	Motavizumab[Title/Abstract]	51
6	Nirsevimab[Title/Abstract]	14
7	MEDI8897[Title/Abstract]	7
8	Monoclonal antibod*[Title/Abstract]	197,940
9	Antibody, Monoclonal[Title/Abstract]	112
10	"Antibodies, Monoclonal"[Mesh]	261,297
11	or/4-10	345,203
12	"Respiratory Syncytial Viruses"[Mesh]	9,813
13	((Respiratory Syncytial Virus[Title/Abstract]) OR (Syncytial Virus, Respiratory[Title/Abstract]) OR (Syncytial Viruses, Respiratory[Title/Abstract]) OR (Virus, Respiratory Syncytial[Title/Abstract]) OR (Viruses, Respiratory Syncytia[Title/Abstract]) OR (Respiratory Syncytial Virus, Human) OR (Human respiratory syncytial virus))	15,694
14	#12 OR #13	16,669
15	"Respiratory Tract Infections"[Mesh]	518,149
16	((Infection, Respiratory Tract[Title/Abstract]) OR (Respiratory Tract Infection[Title/Abstract]) OR (Infections, Respiratory[Title/Abstract]) OR (Infections, Respiratory Tract[Title/Abstract]) OR (Respiratory Infections[Title/Abstract]))	28,593
17	#15 OR #16	53,1434
18	"Pneumonia"[Mesh]	242,236
19	"Bronchiolitis"[Mesh]	9,276
20	#14 OR #17 OR #18 OR #19	543,979
21	#11 and #20	7,413
22	“clinical trial”[Publication Type]	931,808
23	“Clinical Trials as Topic”[Mesh]	371,437
24	“Double-Blind Method”[Mesh]	170,548
25	(randomized[TIAB] AND (trial[TIAB] OR trials[tiab]))	411,238

26	((single[TIAB] OR double[TIAB] OR doubled[TIAB] OR triple[TIAB] OR tripled[TIAB] OR treble[TIAB] OR treble[TIAB]) AND (blind*[TIAB] OR mask*[TIAB]))	210,876
27	or/22-26	1,408,659
28	#21 and #27	890

Database: Embase <Mar 13, 2022>

Search Strategy:

#	Searches	Results
1	'palivizumab'/exp	3,293
2	palivizumab:ti,ab,kw	1,544
3	synagis:ti,ab,kw	179
4	'medi493':ti,ab,kw	12
5	'motavizumab'/exp	304
6	motavizumab:ti,ab,kw	69
7	'nirsevimab'/exp	71
8	nirsevimab:ti,ab,kw	20
9	MEDI8897:ti,ab,kw	15
10	'monoclonal antibody'/exp	673,595
11	or/1-10	673,737
12	'respiratory syncytial virus infection'/exp	6,669
13	'respiratory syncytial virus' OR rsv	32,136
14	'bronchiolitis'/exp	24,500
15	bronchiolit*:ti,ab,kw	19,154
16	'pneumonia'/exp	369,534
17	pneumon*:ti,ab,kw OR bronchopneumon*:ti,ab,kw OR pleuropneumon*:ti,ab,kw	320,840
18	'respiratory tract infection'/exp	517,513
19	'lower respiratory infection*':ti,ab,kw	2,305
20	'lower respiratory tract infection*':ti,ab,kw OR lrti:ti,ab,kw	11,138
21	'pneumovirus'/exp OR 'human respiratory syncytial virus'/exp	20,047
22	or/12-21	884,506
23	#11 and #22	44,911
24	rct:ti,ab,kw OR 'randomized controlled trial':ti,ab,kw	163,460
25	'randomized controlled trial'/exp	702,816
26	#24 or #25	756,536
27	#23 and 26	3,662

Database: CENTRAL <Mar 13, 2022>

Search Strategy:

#	Searches	Results
1	MeSH descriptor: [Palivizumab] explode all trees	49
2	(palivizumab):ti,ab,kw	146
3	(synagis):ti,ab,kw	33
4	(medi493):ti,ab,kw	0
5	(motavizumab):ti,ab,kw	23

6	(nirsevimab):ti,ab,kw	6
7	(MEDI8897):ti,ab,kw	14
8	MeSH descriptor: [Antibodies, Monoclonal] explode all trees	15,035
9	or/1-8	15,147
10	MeSH descriptor: [Respiratory Syncytial Virus] explode all trees	177
11	MeSH descriptor: [Respiratory Syncytial Virus Infections] explode all trees	330
12	((respiratory syncytial virus* or rsv)):ti,ab,kw	1290
13	MeSH descriptor: [Respiratory Syncytial Virus, Human] explode all trees	69
14	MeSH descriptor: [Bronchiolitis] in all MeSH products	398
15	(bronchiolit*):ti,ab,kw	1,536
16	((pneumon* or bronchopneumon* or pleuropneumon*)):ti,ab,kw	21,846
17	MeSH descriptor: [Respiratory Tract Infections] explode all trees	16,984
18	((lower respiratory infection*)):ti,ab,kw	4,409
19	((lower respiratory tract infection* or lrti)):ti,ab,kw	3,420
20	or/10-19	38,085
21	#9 and #20	765

Database: ClinicalTrials.gov <Mar 13, 2022>

#	Searches	Results
1	Intervention: palivizumab OR synagis OR med493 OR motavizumab OR nirsevimab OR MEDI8897	43

Appendix table S2: Excluded studies list

Author, Year	Population	Intervention	Outcome	Study design	Exclude reasons
Ramilo O, 2014	healthy infants	motavizumab	Clinical outcomes data collected included the duration of hospitalization, the need for supplemental oxygen and mechanical ventilation and admission to and length of stay in the intensive care unit (ICU). The incidence of ≥1 or ≥3 medically attended wheezing episodes	RCT	ineligible population
Meissner HC, 1999	preterm infants with or without bronchopulmonary dysplasia (BPD)	SB 209763	laboratory tests, Safety parameters, RSV disease symptoms, Pharmacokinetic parameters	RCT	unable to extract data
Malley R, 1998	RSV infection	palivizumab	serum concentration	RCT	ineligible population
Mori M, 2014	children ≤24 months	palivizumab	rate of RSV-associated hospitalizations occurring, Blood samples, Adverse events	NRCT	wrong study designs
SÁEZ-LLORENS X, 1998	preterm infants with or without bronchopulmonary dysplasia (BPD)	palivizumab	Adverse events, laboratory tests, Pharmacokinetic and immunogenicity assessments	NRCT	wrong study designs
Groothuis JR, 2003	preterm infants	palivizumab	need for hospitalization and hospital course, safety	NRCT	wrong study designs
Brunv, 2000	preterm infants	palivizumab	——	NRCT	wrong study designs
Alansari K, 2019	Infants with a confirmed diagnosis of RSV bronchiolitis	palivizumab	The primary efficacy outcome was readmission to either the infirmary- observation unit, hospital, or PICU during the 3 weeks after discharge.Final secondary outcomes were time to medical readiness for discharge on the initial admission, revisit (but not requiring admission) to any medical facility for the same illness in the 3- week follow-up period, and need for transfer to the PICU during the initial admission	RCT	ineligible population
Alyamovskaya, 2012	50–74 years old participants	long-acting beta-2-agonists	The forced expiratory volume in 1 s (FEV1), Skin blood perfusion changes	RCT	ineligible population
Lagos R, 2009	healthy children aged <2 years (gestational age >36 weeks)	motavizumab	lower respiratory disease scores, the durations of hospitalization, supplemental oxygen use during hospitalization, in- tensive care unit stay, and mechanical ventilation were also recorded. Adverse events (AEs) and serious AEs were monitored through study day 30	RCT	ineligible population
Null D, 2005	Children at 6 selected centers who had participated in IMpact-	palivizumab	Adverse events, palivizumab concentrations and anti-palivizumab reactivity	NRCT	wrong study designs

	RSV during the 1996–1997 winter season				
Sa´ez-Llorens X, 2004	children ≤24 months	palivizumab	RSV hospitalization and for 30 days after study drug administration for safety, determination of drug serum concentration and clinical outcome	RCT	ineligible population
Domachowske J, 2022	preterm infants with heart or lung disease	nirsevimab	Data on adverse events that occurred during treatment and adverse events of special interest were collected through day 361. Pharma cokinetics and antidrug antibody levels were assessed (see Section S3)	NRCT	wrong study designs
Marchac, 2006	——	palivizumab	——	NRCT	wrong study designs
Man WH, 2020	healthy preterm infants; Infants were younger than 6 months of age at the start of the RSV season	palivizumab	primary outcome was to assess the effect of palivizumab during infancy on the respiratory microbiota composition at age 1 year and 6 years; secondary outcomes were assessment of the effect of proven RSV infection in the first year of life on the respiratory microbiota composition at age 1 years and 6 years	RCT	unable to extract data
Makari D, 2014	preterm infants with chronic lung disease	palivizumab liquid	adverse events, Antidrug Antibodies	RCT	ineligible controls
Blanken M, 2012	Healthy preterm infants	palivizumab	The primary endpoint of the study was the number of wheezing days during the first year of life	RCT	unable to extract data

Appendix table S3: Baseline characteristics of included trials

First author, Year	Register number	Journal	Country	Weight (mean±SD)	Asian (%)	White (%)	Black (%)	Hispanic (%)	American Indian or Alaska Native (%)	Native Hawaiian or other Pacific Islander (%)	Other (%)	Multiple categories (%)
Griffin, 2020	NCT028 78330	N Engl J Med	Argentina, Australia, Belgium, Brazil, Bulgaria, Canada, Chile, Czech Republic, Estonia, Finland, France, Hungary, Italy, Latvia, Lithuania, New Zealand, Poland, South Africa, Spain, Sweden, Turkey, United Kingdom, United States	4.57±1.93	1.03	72.18	17.6	NR	0.07	0.76	7.16	1.17
O'Brien, 2015	NCT001 21108	Lancet Infect Dis	United States	5.16±1.79	NA	NA	NA	NR	98.78	NA	1.22	NA
Subramanian, 1998	NR	Pediatric Infectious Disease Journal	NR	4.67±0.72	NR	NR	NR	NR	NR	NR	NR	NR
Hammitt, 2022	NCT039 79313	N Engl J Med	Northern (69%), Southern (31%): Austria, Belgium, Bulgaria, Canada, Estonia, Finland, France, Germany, Israel, Japan, Lativa, Lithuania, Poland, Republic of Korea, Russia, South Africa, Spain, Sweden, United Kingdom,	NR	3.6	53.5	28.4	NR	5.6	0.7	8.1	

Feltes, 2011	NCT00240890, NCT00538785	Pediatric Research	Austria, Belgium, Bulgaria, Canada, Czech Republic, Denmark, France, Germany, Hungary, Israel, Lebanon, Poland, Russia, Spain, Sweden, United Kingdom, United States	6.72±2.61	1.46	86.56	3.48	3.56	NR	NR	4.94	NR
Carbonell-Estrany, 2010	NCT00129766	Pediatrics	United States, Canada, Austria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Poland, Spain, Sweden, United Kingdom, Argentina, Australia, Brazil, Bulgaria, Chile, Iceland, Israel, New Zealand, Russia, Turkey	4.45±1.99	1.28	78.57	7.85	8.58	NR	NR	3.69	NR
Feltes, 2003	NR	Journal of Pediatrics	United States, Canada, Poland, the United Kingdom, Germany, Sweden, France	6.05±0.1	NR	70.86	8.78	11.11	NR	NR	9.25	NR
IMpact-RSV, 1998	NR	Pediatrics	United States, the United Kingdom, Canada	4.83±0.1	2.2	58.06	23.7	10.92	NR	NR	5.13	NR
Simões, 2021	NCT02325791	Clin Infect Dis Clin Infect Dis.	18 countries	4.47±1.54	0.7	86.86	8.79	NR	0.17	0.17	2.35	NR
Scheltema, 2018	ISRCTN73641710	Lancet Respir Med	Netherlands	2.29	NR	NR	NR	NR	NR	NR	NR	NR
Domachowske, 2018	NCT02290340	Pediatric Infectious Disease Journal	United States, South Africa, Chile	6.82±1.9	1.4	11.3	57.7	NR	1.4	NR	25.4	2.8
Tavsu, 2014	NR	Am J Perinatol.	NR	1.36±0.26	NR	NR	NR	NR	NR	NR	NR	NR

Fernández, 2010	NCT003 16264	BMC Pediatrics	Chile, New Zealand, Australia	4.6±1.8	NR	27.3	NR	63.8	NR	NR	8.8	NR

Appendix table S4: Baseline characteristics of included trials

First author, Year	≥1 smoker in household	Overall smoke exposure	Household crowding, >5 individuals	Bronchopulmonary dysplasia (BPD) (%)	Congenital heart disease (CHD) (%)	Chronic lung disease (CLD) (%)	Timpoint of trial (before/during/after RSV season)	Any atopy (%)	Asthma/ Wheezing (%)	Eczema (%)	Hay fever (%)	Funding
Griffin, 2020	NR	NR	NR	NA	NA	NA	before	NR	NR	NR	NR	MedImmune/AstraZeneca and Sanofi Pasteur
O'Brien, 2015	22.57	67.94	77.76	NA	NA	NA	during	20.73	18.85	4.33	8.6	MedImmune
Subramanian, 1998	NR	NR	NR	83.87	NR	NR	during	NR	NR	NR	NR	NR
Hammitt, 2022	NR	NR	NR	NA	NA	NA	before	NR	NR	NR	NR	MedImmune/ AstraZeneca and Sanofi
Blanken, 2013	16.08/27.74/ 38.93	NR	NR	NA	NA	NA	during	36.6/35 .66	10.72/11.19	18.18/13. 05	21.68/2 2.38	Abbott Laboratories and by the Netherlands Organization for Health Research and Development
Feltes, 2011	38.14	NR	NR	NA	100	NA	during	38.38	NR	NR	NR	MedImmune
Carbonell-Estrany, 2010	32.99	NR	NR	NR	NR	21.78	during	44.6	27.99	16.46	20.38	NR
Feltes, 2003	33.72	NR	NR	NA	100	NA	during	NR	28.21	NR	NR	NR

IMpact-RSV, 1998	35.15	NR	NR	50.73	NA	NA	during	NR	35.82	16.44	28.96	NR
Simões, 2021	NR	NR	NR	NA	NA	NA	over 3 RSV seasons	NR	NR	NR	NR	Regeneron Pharmaceuticals
Scheltema, 2018	16.08/27.74/38.93	NR	NR	NA	NA	NA	during	36.6/35.66	10.72/11.19	18.18/13.05	21.68/22.38	AbbVie
Domachowske, 2018	NR	NR	NR	NA	NA	NA	NR	NR	NR	NR	NR	MedImmune
Tavsu, 2014	NR	NR	NR	NA	NA	NA	during	NR	NR	NR	NR	NR
Fernández, 2010	NR	NR	NR	NR	NR	15.8	during	NR	NR	NR	NR	MedImmune

Appendix table S5: risk of bias assessment in dichotomous outcomes

Study	Randomization process generated	Deviations from the intended intervention	Missing data	Measurement of the outcome	Selection of the reported results	Overall
Griffin MP, 2020	Low	Low	Low	Low	Low	Low
O'Brien KL, 2015	Low	Low	Low	Low	Low	Low
Subramanian KN, 1998	Low	Low	Low	Low	Low	Low
Hammitt LL, 2022	Low	Low	Low	Low	Low	Low
Blanken MO, 2013	Low	Low	Low	Low	Low	Low
FELTES TF, 2011	Low	Low	Low	Low	Low	Low
Carbonell-Estrany X, 2010	Low	Low	Low	Low	Low	Low
FELTES TF, 2003	Low	Low	Low	Low	Low	Low
IMpact-RSV, 1998	Low	Low	Low	Low	Low	Low
Simões EAF, 2021	Someconcerns	Low	Low	Low	Low	Someconcerns
Scheltema NM, 2018	Low	Low	Low	Low	Low	Low
Domachowske JB, 2018	Someconcerns	Low	Low	Low	Low	Someconcerns
Tavsu I, 2014	Someconcerns	Someconcerns	Low	Low	Low	Someconcerns
Fernández P, 2010	Low	Low	Low	Low	Low	Someconcerns*

* MedImmune was involved in study design, and analysis and interpretation of data.

Appendix table S6: risk of bias assessment in continuous outcomes

Study	Randomization process generated	Deviations from the intended intervention	Missing data	Measurement of the outcome	Selection of the reported results	Overall
Griffin MP, 2020	Low	Low	Low	Low	Low	Low
O'Brien KL, 2015	Low	Low	Low	Low	Someconcerns	Someconcerns
Subramanian KN, 1998	Low	Low	Low	Low	Low	Low
Hammitt LL, 2022	Low	Low	Low	Low	Low	Low
Blanken MO, 2013	Low	Low	Low	Low	Low	Low
FELTES TF, 2011	Low	Low	Low	Low	Low	Low
Carbonell-Estrany X, 2010	Low	Low	Low	Low	Someconcerns	Someconcerns
FELTES TF, 2003	Low	Low	Low	Low	Someconcerns	Someconcerns
IMpact-RSV, 1998	Low	Low	Low	Low	Low	Low
Simões EAF, 2021	Someconcerns	Low	Low	Low	Low	Someconcerns
Scheltema NM, 2018	Low	Low	Low	Low	Low	Low
Domachowske JB, 2018	Someconcerns	Low	Low	Low	Low	Someconcerns
Tavsu I, 2014	Someconcerns	Someconcerns	Low	Low	Low	Someconcerns
Fernández P, 2010	Low	Low	Low	Low	Low	Someconcerns*

* MedImmune was involved in study design, and analysis and interpretation of data.

Appendix table S7-S20: league tables of outcomes in fixed and random models

Outcomes were reported as odds ratio (95% credible interval). All tables list the treatments in alphabetical order. The estimate is in the cell in common between the column-defining intervention and the row-defining intervention. The league table contains the network estimates in the lower triangle and the direct treatment estimates from pairwise comparisons in the upper triangle. The blanks indicate that there is no comparison group for this outcome.

*Included studies for each outcome assessment:

Author, year	Intervention vs comparison	all-cause mortality	rate of RSV infection	RSV-related hospitalization	rate of ICU admission	rate of mechanical ventilation use	drug-related adverse events	rate of supplemental oxygen use
Griffin, 2020	Nirsevimab vs placebo	√	√	√	√	√	√	√
O'Brien, 2015	Motavizumab vs placebo	√	√		√	√		√
Subramanian, 1998	Palivizumab vs placebo	√	√	√			√	
Hammitt, 2022	Nirsevimab vs placebo	√	√	√			√	
Blanken, 2013	Palivizumab vs placebo		√	√				
Feltes, 2011	Motavizumab vs Palivizumab	√					√	
Carbonell-Estrany, 2010	Motavizumab vs Palivizumab			√	√	√	√	√
Feltes, 2003	Palivizumab vs placebo	√		√	√	√	√	
IMpact-RSV, 1998	Palivizumab vs placebo	√		√				
Simões, 2021	Suptavumab vs placebo	√	√	√			√	
Scheltema, 2018	Palivizumab vs placebo		√					
Domachowske, 2018	Nirsevimab vs placebo	√					√	
Tavsu, 2014	Palivizumab vs placebo		√	√				
Fernández, 2010	M+P vs Motavizumab	√					√	

Appendix table S7: league table of all-cause mortality in fixed effects model

M+P	1.12 (0.10 - 12.54)	.	.	.
1.12 (0.10 - 12.54)	Motavizumab	.	0.89 (0.36 - 2.20)	1.00 (0.18 - 5.48)
2.43 (0.11 - 55.88)	2.16 (0.29 - 16.03)	Nirsevimab	.	0.33 (0.05 - 1.97)
1.10 (0.09 - 14.04)	0.98 (0.44 - 2.20)	0.45 (0.07 - 2.93)	Palivizumab	0.70 (0.41 - 1.19)
0.80 (0.06 - 10.46)	0.71 (0.29 - 1.74)	0.33 (0.05 - 1.97)	0.72 (0.43 - 1.21)	Placebo

Appendix table S8: league table of all-cause mortality in random effects model

M+P	1.12 (0.10 - 12.54)	.	.	.
1.12 (0.10 - 12.54)	Motavizumab	.	0.89 (0.36 - 2.20)	1.00 (0.18 - 5.48)
2.43 (0.11 - 55.88)	2.16 (0.29 - 16.03)	Nirsevimab	.	0.33 (0.05 - 1.97)
1.10 (0.09 - 14.04)	0.98 (0.44 - 2.20)	0.45 (0.07 - 2.93)	Palivizumab	0.70 (0.41 - 1.19)
0.80 (0.06 - 10.46)	0.71 (0.29 - 1.74)	0.33 (0.05 - 1.97)	0.72 (0.43 - 1.21)	Placebo

Appendix table S9: league table of rate of RSV infection in fixed effects model

Motavizumab	.	.	**0.17 (0.12 - 0.23)**	.
0.68 (0.41 - 1.14)	Nirsevimab	.	**0.24 (0.16 - 0.37)**	.
0.52 (0.32 - 0.86)	0.77 (0.44 - 1.35)	Palivizumab	**0.32 (0.22 - 0.47)**	.
0.17 (0.12 - 0.23)	**0.24 (0.16 - 0.37)**	**0.32 (0.22 - 0.47)**	Placebo	0.94 (0.65 - 1.36)
0.16 (0.10 - 0.25)	**0.23 (0.13 - 0.40)**	**0.30 (0.18 - 0.51)**	0.94 (0.65 - 1.36)	Suptavumab

Appendix table S10: league table of rate of RSV infection in random effects model

Motavizumab	.	.	**0.17 (0.12 - 0.23)**	.
0.68 (0.41 - 1.14)	Nirsevimab	.	**0.24 (0.16 - 0.37)**	.
0.52 (0.32 - 0.86)	0.77 (0.44 - 1.35)	Palivizumab	**0.32 (0.22 - 0.47)**	.
0.17 (0.12 - 0.23)	**0.24 (0.16 - 0.37)**	**0.32 (0.22 - 0.47)**	Placebo	0.94 (0.65 - 1.36)
0.16 (0.10 - 0.25)	**0.23 (0.13 - 0.40)**	**0.30 (0.18 - 0.51)**	0.94 (0.65 - 1.36)	Suptavumab

Appendix table S11: league table of RSV-related hospitalization in fixed effects model

Motavizumab	.	0.73 (0.50 - 1.08)	.	.
1.34 (0.60 - 3.01)	Nirsevimab	.	**0.25** **(0.13 - 0.47)**	.
0.73 (0.50 - 1.08)	0.55 (0.27 - 1.12)	Palivizumab	**0.45** **(0.34 - 0.60)**	.
0.33 **(0.20 - 0.53)**	**0.25** **(0.13 - 0.47)**	**0.45** **(0.34 - 0.60)**	Placebo	1.00 (0.52 - 1.92)
0.33 **(0.15 - 0.74)**	**0.25** **(0.10 - 0.62)**	**0.45** **(0.22 - 0.92)**	1.00 (0.52 - 1.92)	Suptavumab

Appendix table S12: league table of RSV-related hospitalization in random effects model

Motavizumab	.	0.73 (0.50 - 1.08)	.	.
1.34 (0.60 - 3.01)	Nirsevimab	.	**0.25** **(0.13 - 0.47)**	.
0.73 (0.50 - 1.08)	0.55 (0.27 - 1.12)	Palivizumab	**0.45** **(0.34 - 0.60)**	.
0.33 **(0.20 - 0.53)**	**0.25** **(0.13 - 0.47)**	**0.45** **(0.34 - 0.60)**	Placebo	1.00 (0.52 - 1.92)
0.33 **(0.15 - 0.74)**	**0.25** **(0.10 - 0.62)**	**0.45** **(0.22 - 0.92)**	1.00 (0.52 - 1.92)	Suptavumab

Appendix table S13: league table of rate of ICU admission in fixed effects model

Motavizumab	0.52 (0.24 - 1.12)	**0.10** **(0.01 - 0.85)**
0.47 **(0.23 - 0.97)**	Palivizumab	0.54 (0.27 - 1.07)
0.23 **(0.09 - 0.59)**	**0.50** **(0.26 - 0.95)**	Placebo

Appendix table S14: league table of rate of ICU admission in random effects model

Motavizumab	0.52 (0.24 - 1.12)	**0.10** **(0.01 - 0.85)**
0.47 **(0.23 - 0.97)**	Palivizumab	0.54 (0.27 - 1.07)
0.23 **(0.09 - 0.59)**	**0.50** **(0.26 - 0.95)**	Placebo

Appendix table S15: league table of rate of mechanical ventilation use in fixed effects model

Motavizumab	**0.18** **(0.04 - 0.81)**	0.25 (0.02 - 2.76)
0.23 **(0.06 - 0.83)**	Palivizumab	0.57 (0.24 - 1.38)
0.14 **(0.03 - 0.57)**	0.62 (0.27 - 1.43)	Placebo

Appendix table S16: league table of rate of mechanical ventilation use in random effects model

Motavizumab	**0.18** **(0.04 - 0.81)**	0.25 (0.02 - 2.76)
0.23 **(0.06 - 0.83)**	Palivizumab	0.57 (0.24 - 1.38)
0.14 **(0.03 - 0.57)**	0.62 (0.27 - 1.43)	Placebo

Appendix table S17: league table of drug-related adverse events in fixed effects model

M+P	0.76 (0.40 - 1.42)	.	.	.	.
0.76 (0.40 - 1.42)	Motavizumab	.	0.99 (0.69 - 1.42)	.	.
0.83 (0.30 - 2.32)	1.10 (0.49 - 2.47)	Nirsevimab	.	0.93 (0.51 - 1.68)	.
0.75 (0.36 - 1.54)	0.99 (0.69 - 1.42)	0.90 (0.44 - 1.85)	Palivizumab	1.03 (0.68 - 1.56)	.
0.77 (0.34 - 1.77)	1.02 (0.59 - 1.76)	0.93 (0.51 - 1.68)	1.03 (0.68 - 1.56)	Placebo	0.99 (0.60 - 1.65)
0.77 (0.29 - 2.03)	1.01 (0.48 - 2.14)	0.92 (0.42 - 2.01)	1.02 (0.53 - 1.97)	0.99 (0.60 - 1.65)	Suptavumab

Appendix table S18: league table of drug-related adverse events in random effects model

M+P	0.76 (0.40 - 1.42)	.	.	.	.
0.76 (0.40 - 1.42)	Motavizumab	.	0.99 (0.69 - 1.42)	.	.
0.83 (0.30 - 2.32)	1.10 (0.49 - 2.47)	Nirsevimab	.	0.93 (0.51 - 1.68)	.
0.75 (0.36 - 1.54)	0.99 (0.69 - 1.42)	0.90 (0.44 - 1.85)	Palivizumab	1.03 (0.68 - 1.56)	.
0.77 (0.34 - 1.77)	1.02 (0.59 - 1.76)	0.93 (0.51 - 1.68)	1.03 (0.68 - 1.56)	Placebo	0.99 (0.60 - 1.65)
0.77 (0.29 - 2.03)	1.01 (0.48 - 2.14)	0.92 (0.42 - 2.01)	1.02 (0.53 - 1.97)	0.99 (0.60 - 1.65)	Suptavumab

Appendix table S19: league table of rate of supplemental oxygen use in fixed effects model

Motavizumab	.	0.64 (0.39 - 1.06)	**0.12** **(0.07 - 0.19)**
0.90 (0.26 - 3.04)	Nirsevimab	.	**0.13** **(0.04 - 0.39)**
0.64 (0.39 - 1.06)	0.72 (0.19 - 2.68)	Palivizumab	.
0.12 **(0.07 - 0.19)**	**0.13** **(0.04 - 0.39)**	**0.18** **(0.09 - 0.37)**	Placebo

Appendix table S20: league table of rate of supplemental oxygen use in random effects model

Motavizumab	.	0.64 (0.39 - 1.06)	**0.12** **(0.07 - 0.19)**
0.90 (0.26 - 3.04)	Nirsevimab	.	**0.13** **(0.04 - 0.39)**
0.64 (0.39 - 1.06)	0.72 (0.19 - 2.68)	Palivizumab	.
0.12 **(0.07 - 0.19)**	**0.13** **(0.04 - 0.39)**	**0.18** **(0.09 - 0.37)**	Placebo

Appendix table S21: cumulative ranking of interventions for different outcomes

Strategies were ranked according to P score, which is the mean extent of certainty that one intervention is better than another, averaged over all competing interventions.

Outcome	Rank	Intervention
Rate of RSV infection	1	Motavizumab
	2	Nirsevimab
	3	Palivizumab
	4	Placebo
	5	Suptavumab
All-cause mortality	1	Nirsevimab
	2	Palivizumab
	3	Motavizumab
	4	M+P
	5	Placebo
RSV-related hospitalization	1	Nirsevimab
	2	Motavizumab
	3	Palivizumab
	4	Suptavumab
	5	Placebo
Rate of supplemental oxygen use	1	Motavizumab
	2	Nirsevimab
	3	Palivizumab
	4	Placebo
Rate of mechanical ventilation use	1	Motavizumab
	2	Palivizumab
	3	Placebo
Rate of ICU admission	1	Motavizumab
	2	Palivizumab
	3	Placebo
Drug-related adverse events	1	M+P
	2	Nirsevimab
	3	Placebo
	4	Suptavumab
	5	Motavizumab
	6	Palivizumab

Appendix table S22: details of GRADE assessment in all-cause mortality

All-cause mortality						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Nirsevimab vs. Placebo	0.33 [0.05, 1.97]	High	——	——	0.33 [0.05, 1.97]	Moderate‡
Motavizumab vs. Placebo	1.00 [0.18, 5.48]	High	0.62 [0.22, 1.78]	High	0.71 [0.29, 1.74]	Moderate‡
Palivizumab vs. Placebo	0.70 [0.41, 1.19]	High	1.13 [0.16, 7.73]	High	0.72 [0.43, 1.21]	Moderate‡
Suptavumab vs. Placebo	1.37 [0.06, 33.61]	Moderate*	——	——	1.37 [0.06, 33.61]	Low§
Motavizumab vs. Palivizumab	0.89 [0.36, 2.20]	High	1.43 [0.24, 8.49]	High	0.98 [0.44, 2.20]	Moderate‡
M+P vs. Motavizumab	1.12 [0.10, 12.54]	Moderate†	——	——	1.12 [0.10, 12.54]	Low§
M+P vs. Nirsevimab	——	——	2.43 [0.11, 55.88]	Moderate†	2.43 [0.11, 55.88]	Low§
M+P vs. Palivizumab	——	——	1.10 [0.09, 14.04]	Moderate†	1.10 [0.09, 14.04]	Low§
M+P vs. Placebo	——	——	0.80 [0.06, 10.46]	Moderate†	0.80 [0.06, 10.46]	Low§
Motavizumab vs. Nirsevimab	——	——	2.16 [0.29, 16.03]	High	2.16 [0.29, 16.03]	Moderate‡
Nirsevimab vs. Palivizumab	——	——	0.45 [0.07, 2.93]	High	0.45 [0.07, 2.93]	Moderate‡
Suptavumab vs. M+P	——	——	——	——	——	——
Suptavumab vs. Motavizumab	——	——	——	——	——	——
Suptavumab vs. Nirsevimab	——	——	——	——	——	——
Suptavumab vs. Palivizumab	——	——	——	——	——	——

*Downgraded 1 level due to risk of bias.

†Downgraded 1 level due to risk of bias.

‡Downgraded 1 level due to imprecision.

§Downgraded 2 level due to imprecision and risk of bias.

Appendix table S23: details of GRADE assessment in RSV-related hospitalization

RSV-related hospitalization						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Nirsevimab vs. Placebo	0.25 [0.13, 0.47]	High	——	——	0.25 [0.13, 0.47]	High
Palivizumab vs. Placebo	0.45 [0.34, 0.60]	High	——	——	0.45 [0.34, 0.60]	High
Motavizumab vs. Palivizumab	0.73 [0.50, 1.08]	High	——	——	0.73 [0.50, 1.08]	Moderate†
Suptavumab vs. Placebo	1.00 [0.52, 1.92]	Moderate*	——	——	1.00 [0.52, 1.92]	Low‡
Motavizumab vs. Nirsevimab	——	——	1.34 [0.60, 3.01]	High	1.34 [0.60, 3.01]	Moderate†
Motavizumab vs. Placebo	——	——	0.33 [0.20, 0.53]	High	0.33 [0.20, 0.53]	High
Motavizumab vs. Suptavumab	——	——	0.33 [0.15, 0.74]	Moderate*	0.33 [0.15, 0.74]	Moderate*
Nirsevimab vs. Palivizumab	——	——	0.55 [0.27, 1.12]	High	0.55 [0.27, 1.12]	Moderate†
Nirsevimab vs. Suptavumab	——	——	0.25 [0.10, 0.62]	Moderate*	0.25 [0.10, 0.62]	Moderate*
Palivizumab vs. Suptavumab	——	——	0.45 [0.22, 0.92]	Moderate*	0.45 [0.22, 0.92]	Moderate*

*Downgraded 1 level due to risk of bias.

†Downgraded 1 level due to imprecision.

‡Downgraded 2 level due to imprecision and risk of bias.

Appendix table S24: details of GRADE assessment in rate of RSV infection

Rate of RSV infection						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Nirsevimab vs. Placebo	0.24 [0.16, 0.37]	High	——	——	0.24 [0.16, 0.37]	High
Motavizumab vs. Placebo	0.17 [0.12, 0.23]	High	——	——	0.17 [0.12, 0.23]	Moderate‡
Palivizumab vs. Placebo	0.32 [0.22, 0.47]	Moderate*	——	——	0.32 [0.22, 0.47]	Moderate*
Suptavumab vs. Placebo	1.06 [0.73, 1.53]	Moderate*	——	——	1.06 [0.73, 1.53]	Low†
Motavizumab vs. Nirsevimab	——	——	0.68 [0.41, 1.14]	High	0.68 [0.41, 1.14]	Moderate‡
Motavizumab vs. Palivizumab	——	——	0.52 [0.32, 0.86]	Moderate*	0.52 [0.32, 0.86]	Moderate*
Motavizumab vs. Suptavumab	——	——	0.16 [0.10, 0.25]	Moderate*	0.16 [0.10, 0.25]	Moderate*
Nirsevimab vs. Palivizumab	——	——	0.77 [0.44, 1.35]	Moderate*	0.77 [0.44, 1.35]	Low†
Nirsevimab vs. Suptavumab	——	——	0.23 [0.13, 0.40]	Moderate*	0.23 [0.13, 0.40]	Moderate*
Palivizumab vs. Suptavumab	——	——	0.30 [0.18, 0.51]	Moderate*	0.30 [0.18, 0.51]	Moderate*

*Downgraded 1 level due to risk of bias.

†Downgraded 2 level due to risk of bias and imprecision.

‡Downgraded 1 level due to imprecision.

Appendix table S25: details of GRADE assessment in drug-related adverse events

Drug-related AE						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Nirsevimab vs. Placebo	0.93 [0.51, 1.68]	High	——	——	0.93 [0.51, 1.68]	Moderate†
Palivizumab vs. Placebo	1.03 [0.68, 1.56]	High	——	——	1.03 [0.68, 1.56]	Moderate†
Motavizumab vs. Palivizumab	0.99 [0.69, 1.42]	High	——	——	0.99 [0.69, 1.42]	Moderate†
M+P vs. Motavizumab	0.76 [0.40, 1.42]	Moderate*	——	——	0.76 [0.40, 1.42]	Low‡
Suptavumab vs. Placebo	1.01 [0.61, 1.68]	Moderate*	——	——	1.01 [0.61, 1.68]	Low‡
M+P vs. Nirsevimab	——	——	0.83 [0.30, 2.32]	Moderate*	0.83 [0.30, 2.32]	Low‡
M+P vs. Palivizumab	——	——	0.75 [0.36, 1.54]	Moderate*	0.75 [0.36, 1.54]	Low‡
M+P vs. Placebo	——	——	0.77 [0.34, 1.77]	Moderate*	0.77 [0.34, 1.77]	Low‡
M+P vs. Suptavumab	——	——	0.77 [0.29, 2.03]	Moderate*	0.77 [0.29, 2.03]	Low‡
Motavizumab vs. Nirsevimab	——	——	1.10 [0.49, 2.47]	High	1.10 [0.49, 2.47]	Moderate†
Motavizumab vs. Placebo	——	——	1.02 [0.59, 1.76]	High	1.02 [0.59, 1.76]	Moderate†
Motavizumab vs. Suptavumab	——	——	1.01 [0.48, 2.14]	Moderate*	1.01 [0.48, 2.14]	Low‡
Nirsevimab vs. Palivizumab	——	——	0.90 [0.44, 1.85]	High	0.90 [0.44, 1.85]	Moderate†
Nirsevimab vs. Suptavumab	——	——	0.92 [0.42, 2.01]	Moderate*	0.92 [0.42, 2.01]	Low‡
Palivizumab vs. Suptavumab	——	——	1.02 [0.53, 1.97]	Moderate*	1.02 [0.53, 1.97]	Low‡

*Downgraded 1 level due to risk of bias.

†Downgraded 1 level due to imprecision.

‡Downgraded 2 level due to imprecision and risk of bias.

Appendix table S26: details of GRADE assessment in supplemental oxygen use

Rate of supplemental oxygen use						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Nirsevimab vs. Placebo	0.13 [0.04, 0.39]	High	——	——	0.13 [0.04, 0.39]	Moderate*
Motavizumab vs. Placebo	0.12 [0.07, 0.19]	High	——	——	0.12 [0.07, 0.19]	Moderate*
Motavizumab vs. Palivizumab	0.64 [0.39, 1.06]	High	——	——	0.64 [0.39, 1.06]	Moderate*
Motavizumab vs. Nirsevimab	——	——	0.90 [0.26, 3.04]	High	0.90 [0.26, 3.04]	Moderate*
Nirsevimab vs. Palivizumab	——	——	0.72 [0.19, 2.68]	High	0.72 [0.19, 2.68]	Moderate*
Palivizumab vs. Placebo	——	——	0.18 [0.09, 0.37]	High	0.18 [0.09, 0.37]	Moderate*

*Downgraded 1 level due to imprecision.

Appendix table S27: details of GRADE assessment in rate of mechanical ventilation use

Rate of MV use						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Motavizumab vs. Placebo	0.25 [0.02, 2.76]	High	0.10 [0.02, 0.59]	High	0.14 [0.03, 0.57]	Moderate*
Palivizumab vs. Placebo	0.57 [0.24, 1.38]	High	1.39 [0.08, 23.67]	High	0.62 [0.27, 1.43]	Moderate*
Nirsevimab vs. Placebo	0.16 [0.01, 4.05]	High	——	——	0.16 [0.01, 4.05]	Moderate*
Motavizumab vs. Palivizumab	0.18 [0.04, 0.81]	High	0.44 [0.03, 5.61]	High	0.23 [0.06, 0.83]	Moderate*
Motavizumab vs. Nirsevimab	——	——	——	——	——	——
Palivizumab vs. Nirsevimab	——	——	——	——	——	——

*Downgraded 1 level due to imprecision.

Appendix table S28: details of GRADE assessment in rate of ICU admission

Rate of ICU admission						
Comparison	Direct odds ratio (95% CI)	Certainty of evidence without imprecision	Indirect odds ratio (95% CI)	Certainty of evidence without imprecision	Network odds ratio (95% CI)	Certainty of evidence
Motavizumab vs. Placebo	0.10 [0.01, 0.85]	High	0.28 [0.10, 0.79]	High	0.23 [0.09, 0.59]	Moderate*
Palivizumab vs. Placebo	0.54 [0.27, 1.07]	High	0.19 [0.02, 1.87]	High	0.50 [0.26, 0.95]	Moderate*
Nirsevimab vs. Placebo	0.04 [0.00, 0.81]	High	——	——	0.04 [0.00, 0.81]	Moderate*
Motavizumab vs. Palivizumab	0.52 [0.24, 1.12]	High	0.18 [0.02, 1.76]	High	0.47 [0.23, 0.97]	Moderate*
Motavizumab vs. Nirsevimab	——	——	——	——	——	——
Palivizumab vs. Nirsevimab	——	——	——	——	——	——

*Downgraded 1 level due to imprecision.

Appendix table S29: details of GRADE assessment in drug-related serious adverse events

Drug-related SAE		
Comparison	Direct odds ratio (95% CI)	Certainty of evidence
Motavizumab vs. Placebo	8.56 [0.49, 148.58]	Moderate*
Palivizumab vs. Placebo	0.14 [0.01, 2.80]	Moderate*
Nirsevimab vs. Placebo	——	——
Motavizumab vs. Palivizumab	0.82 [0.25, 2.71]	Moderate*
M+P vs. Motavizumab	1.12 [0.10, 12.54]	Low†

*Downgraded 1 level due to imprecision.

†Downgraded 2 level due to imprecision and risk of bias.

Appendix table S30-S45: Bayesian league tables of outcomes in fixed and random models

Outcomes were reported as odds ratio (95% credible interval). All tables list the treatments in alphabetical order. The estimate is in the cell in common between the column-defining intervention and the row-defining intervention. The league table contains pairwise comparisons of the treatment in the row versus the treatment in the column in the lower triangle and column versus row in the upper triangle.

Appendix table S30: Bayesian league table of rate of RSV infection in random effects model

Motavizumab	1.45 (0.37, 5.65)	1.97 (0.58, 7.97)	6.02 (2.02, 17.99)	6.40 (1.37, 30.44)
0.69 (0.18, 2.72)	Nirsevimab	1.36 (0.49, 4.48)	4.14 (1.83, 9.60)	4.40 (1.13, 17.82)
0.51 (0.13, 1.73)	0.74 (0.22, 2.04)	Palivizumab	3.05 (1.36, 5.94)	3.26 (0.81, 11.29)
0.17 (0.06, 0.50)	0.24 (0.10, 0.55)	0.33 (0.17, 0.74)	Placebo	1.06 (0.36, 3.23)
0.16 (0.03, 0.73)	0.23 (0.06, 0.88)	0.31 (0.09, 1.24)	0.94 (0.31, 2.79)	Suptavumab

Appendix table S31: Bayesian league table of rate of RSV infection in fixed effects model

Motavizumab	1.47 (0.87, 2.45)	1.91 (1.16, 3.13)	6.03 (4.43, 8.31)	6.42 (3.97, 10.45)
0.68 (0.41, 1.15)	Nirsevimab	1.30 (0.74, 2.28)	4.11 (2.75, 6.22)	4.37 (2.55, 7.64)
0.53 (0.32, 0.86)	0.77 (0.44, 1.35)	Palivizumab	3.17 (2.17, 4.65)	3.37 (2.00, 5.76)
0.17 (0.12, 0.23)	0.24 (0.16, 0.36)	0.32 (0.21, 0.46)	Placebo	1.06 (0.74, 1.54)
0.16 (0.1, 0.25)	0.23 (0.13, 0.39)	0.30 (0.17, 0.50)	0.94 (0.65, 1.35)	Suptavumab

Appendix table S32: Bayesian league table of all-cause mortality in random effects model

M+P	0.73 (0.02, 9.32)	0.91 (0.02, 21.63)	0.72 (0.02, 10.7)	1.04 (0.03, 15.68)	113751.74 (0.19, 1764267809536012800)
1.38 (0.11, 43.94)	Motavizumab	1.28 (0.23, 8.13)	1 (0.44, 2.28)	1.45 (0.58, 3.55)	171012.94 (0.49, 2485624818560194560)
1.09 (0.05, 49.59)	0.78 (0.12, 4.39)	Nirsevimab	0.79 (0.14, 3.69)	1.14 (0.22, 4.86)	130929.84 (0.34, 1885003463665145600)
1.38 (0.09, 47.81)	1 (0.44, 2.26)	1.26 (0.27, 7.04)	Palivizumab	1.44 (0.86, 2.43)	169161.91 (0.51, 2442958399732975616)
0.96 (0.06, 33.48)	0.69 (0.28, 1.71)	0.88 (0.21, 4.53)	0.69 (0.41, 1.16)	Placebo	117377.89 (0.36, 1628536804196702720)
0 (0, 5.4)	0 (0, 2.05)	0 (0, 2.94)	0 (0, 1.96)	0 (0, 2.77)	Suptavumab

Appendix table S33: Bayesian league table of all-cause mortality in fixed effects model

M+P	0.73 (0.02, 9.32)	0.91 (0.02, 21.63)	0.72 (0.02, 10.7)	1.04 (0.03, 15.68)	113751.74 (0.19, 1764267809536012800)
1.38 (0.11, 43.94)	Motavizumab	1.28 (0.23, 8.13)	1 (0.44, 2.28)	1.45 (0.58, 3.55)	171012.94 (0.49, 2485624818560194560)
1.09 (0.05, 49.59)	0.78 (0.12, 4.39)	Nirsevimab	0.79 (0.14, 3.69)	1.14 (0.22, 4.86)	130929.84 (0.34, 1885003463665145600)
1.38 (0.09, 47.81)	1 (0.44, 2.26)	1.26 (0.27, 7.04)	Palivizumab	1.44 (0.86, 2.43)	169161.91 (0.51, 2442958399732975616)
0.96 (0.06, 33.48)	0.69 (0.28, 1.71)	0.88 (0.21, 4.53)	0.69 (0.41, 1.16)	Placebo	117377.89 (0.36, 1628536804196702720)
0 (0, 5.4)	0 (0, 2.05)	0 (0, 2.94)	0 (0, 1.96)	0 (0, 2.77)	Suptavumab

Appendix table S34: Bayesian league table of RSV-related hospitalization in random effects model

Motavizumab	1.52 (0.02, 260.25)	1.37 (0.04, 51.21)	5.9 (0.16, 472.6)	6.02 (0.04, 1972.77)
0.66 (0, 52.44)	Nirsevimab	0.88 (0.03, 14.59)	3.91 (0.3, 53.02)	3.98 (0.05, 344.37)
0.73 (0.02, 25.9)	1.13 (0.07, 36.1)	Palivizumab	4.43 (1.06, 35.88)	4.44 (0.11, 357.65)
0.17 (0, 6.29)	0.26 (0.02, 3.38)	0.23 (0.03, 0.94)	Placebo	1.01 (0.03, 38.5)
0.17 (0, 25.25)	0.25 (0, 20.55)	0.23 (0, 8.76)	0.99 (0.03, 36.09)	Suptavumab

Appendix table S35: Bayesian league table of RSV-related hospitalization in fixed effects model

Motavizumab	0.84 (0.37, 1.87)	1.37 (0.93, 2.01)	3.5 (2.17, 5.65)	3.54 (1.59, 8.16)
1.19 (0.54, 2.73)	Nirsevimab	1.62 (0.81, 3.4)	4.15 (2.2, 8.21)	4.22 (1.69, 11.05)
0.73 (0.5, 1.07)	0.62 (0.29, 1.24)	Palivizumab	2.56 (1.94, 3.39)	2.59 (1.28, 5.43)
0.29 (0.18, 0.46)	0.24 (0.12, 0.45)	0.39 (0.29, 0.52)	Placebo	1.01 (0.53, 2.01)
0.28 (0.12, 0.63)	0.24 (0.09, 0.59)	0.39 (0.18, 0.78)	0.99 (0.5, 1.88)	Suptavumab

Appendix table S36: Bayesian league table of rate of supplemental oxygen use in random effects model

Motavizumab	1.04 (0.02, 54.33)	1.55 (0.1, 24.05)	8.84 (0.57, 135.5)
0.96 (0.02, 52.12)	Nirsevimab	1.5 (0.01, 191.09)	8.43 (0.49, 154.15)
0.64 (0.04, 9.81)	0.67 (0.01, 84.42)	Palivizumab	5.68 (0.12, 270.02)
0.11 (0.01, 1.75)	0.12 (0.01, 2.06)	0.18 (0, 8.5)	Placebo

Appendix table S37: Bayesian league table of rate of supplemental oxygen use in fixed effects model

Motavizumab	1.06 (0.26, 3.45)	1.56 (0.95, 2.6)	8.79 (5.37, 15.11)
0.94 (0.29, 3.82)	Nirsevimab	1.48 (0.41, 6.49)	8.27 (2.91, 30.8)
0.64 (0.38, 1.05)	0.68 (0.15, 2.45)	Palivizumab	5.65 (2.77, 11.7)
0.11 (0.07, 0.19)	0.12 (0.03, 0.34)	0.18 (0.09, 0.36)	Placebo

Appendix table S38: Bayesian league table of rate of mechanical ventilation use in random effects model

Motavizumab	0 (0, 11.96)	5.03 (0.63, 45.73)	7.7 (0.74, 83.84)
24058.21 (0.08, 855629723170699904)	Nirsevimab	122529.85 (0.48, 4252162126839230976)	183653.94 (0.87, 5821885953627409408)
0.2 (0.02, 1.59)	0 (0, 2.1)	Palivizumab	1.54 (0.21, 10.2)
0.13 (0.01, 1.35)	0 (0, 1.16)	0.65 (0.1, 4.82)	Placebo

Appendix table S39: Bayesian league table of rate of mechanical ventilation use in fixed effects model

Motavizumab	0 (0, 7.71)	4.96 (1.52, 23.27)	8.27 (2.12, 43.62)
26691.14 (0.13, 56102833244432992)	Nirsevimab	138661.44 (0.76, 309977006714859136)	227408.63 (1.31, 518393465197570240)
0.2 (0.04, 0.66)	0 (0, 1.32)	Palivizumab	1.64 (0.72, 3.96)
0.12 (0.02, 0.47)	0 (0, 0.76)	0.61 (0.25, 1.4)	Placebo

Appendix table S40: Bayesian league table of rate of ICU admission in random effects model

Motavizumab	0 (0, 0.35)	2.53 (0.17, 54.84)	6.12 (0.4, 191.16)
5847429934.38 (2.86, 1.673431187075e+26)	Nirsevimab	15616450915.69 (8.23, 4.51961657999075e+26)	40371913834.37 (25.82, 1.03437981491577e+27)
0.4 (0.02, 5.99)	0 (0, 0.12)	Palivizumab	2.39 (0.16, 50.19)
0.16 (0.01, 2.5)	0 (0, 0.04)	0.42 (0.02, 6.26)	Placebo

Appendix table S41: Bayesian league table of rate of ICU admission in fixed effects model

Motavizumab	0 (0, 0.14)	2.22 (1.1, 4.81)	4.66 (1.92, 12.04)
217989677350.61 (6.9, 1.01180718649146e+31)	Nirsevimab	490291654606.98 (15.84, 2.24726925127156e+31)	1025081497855.31 (33.16, 4.47461804254501e+31)
0.45 (0.21, 0.91)	0 (0, 0.06)	Palivizumab	2.08 (1.1, 4.17)
0.21 (0.08, 0.52)	0 (0, 0.03)	0.48 (0.24, 0.91)	Placebo

Appendix table S42: Bayesian league table of drug-related adverse events in random effects model

M+P	1.32 (0.43, 3.99)	1.34 (0.23, 8.62)	1.29 (0.32, 4.76)	1.25 (0.24, 5.96)	1.27 (0.18, 8.34)
0.76 (0.25, 2.32)	Motavizumab	1.02 (0.26, 4.49)	0.98 (0.43, 2.04)	0.95 (0.29, 2.9)	0.96 (0.19, 4.45)
0.75 (0.12, 4.3)	0.98 (0.22, 3.92)	Nirsevimab	0.96 (0.26, 2.93)	0.93 (0.37, 2.02)	0.95 (0.23, 3.38)
0.78 (0.21, 3.17)	1.02 (0.49, 2.34)	1.04 (0.34, 3.82)	Palivizumab	0.97 (0.42, 2.32)	0.99 (0.26, 3.93)
0.8 (0.17, 4.13)	1.06 (0.34, 3.48)	1.07 (0.49, 2.69)	1.03 (0.43, 2.4)	Placebo	1.02 (0.35, 2.93)
0.79 (0.12, 5.58)	1.04 (0.22, 5.15)	1.05 (0.3, 4.39)	1.01 (0.25, 3.91)	0.99 (0.34, 2.83)	Suptavumab

Appendix table S43: Bayesian league table of drug-related adverse events in fixed effects model

M+P	1.32 (0.69, 2.46)	1.34 (0.48, 3.75)	1.33 (0.64, 2.74)	1.29 (0.55, 2.96)	1.31 (0.49, 3.49)
0.76 (0.41, 1.44)	Motavizumab	1.01 (0.46, 2.29)	1.01 (0.7, 1.45)	0.98 (0.56, 1.69)	0.99 (0.47, 2.12)
0.75 (0.27, 2.09)	0.99 (0.44, 2.18)	Nirsevimab	1 (0.48, 2.02)	0.97 (0.53, 1.71)	0.98 (0.45, 2.13)
0.75 (0.36, 1.57)	0.99 (0.69, 1.42)	1 (0.49, 2.09)	Palivizumab	0.97 (0.64, 1.46)	0.98 (0.51, 1.92)
0.78 (0.34, 1.8)	1.02 (0.59, 1.77)	1.03 (0.58, 1.9)	1.03 (0.68, 1.56)	Placebo	1.01 (0.61, 1.72)
0.76 (0.29, 2.04)	1.01 (0.47, 2.13)	1.02 (0.47, 2.24)	1.02 (0.52, 1.95)	0.99 (0.58, 1.63)	Suptavumab

Appendix table S44: Bayesian league table of drug-related serious adverse events in random effects model

M+P	0.71 (0.01, 48.35)	20222.9 (0, 1.84127748263721e+29)	0.17 (0, 26.53)	0.25 (0, 61.71)
1.4 (0.02, 147.72)	Motavizumab	31979.62 (0, 2.1964172568143e+29)	0.25 (0.01, 4.39)	0.37 (0.01, 12.1)
0 (0, 2985881300883712)	0 (0, 1697149564964730)	Nirsevimab	0 (0, 433416757509325)	0 (0, 511717295620109)
5.97 (0.04, 2028)	4.07 (0.23, 132.29)	142821.12 (0, 1.04766699009681e+30)	Palivizumab	1.41 (0.04, 84.76)
4.02 (0.02, 1803.64)	2.68 (0.08, 151.91)	94516.74 (0, 5.53272420784994e+29)	0.71 (0.01, 24.09)	Placebo

Appendix table S45: Bayesian league table of drug-related serious adverse events in fixed effects model

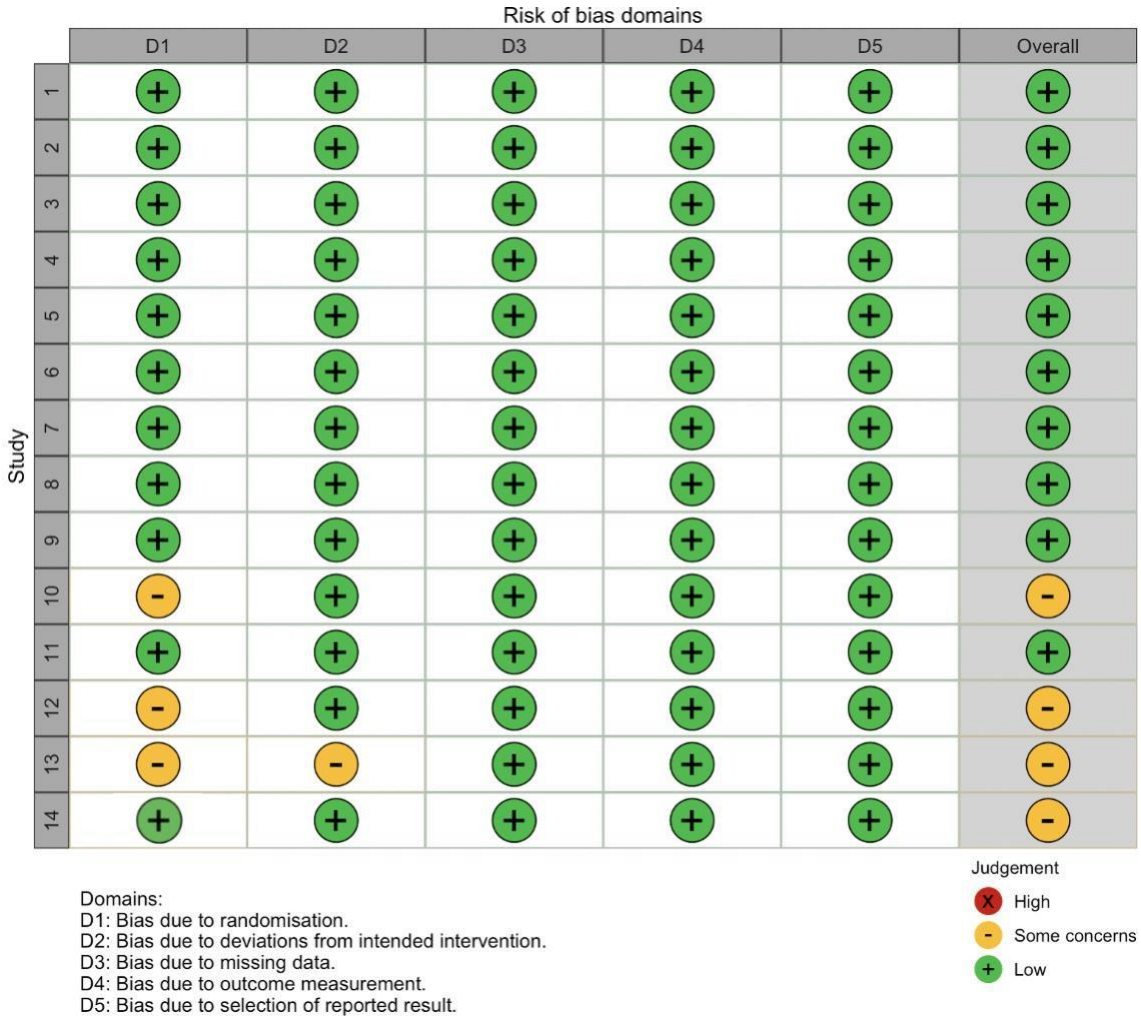
M+P	0.74 (0.02, 9.58)	14312.42 (0, 6.39254240399028e+28)	0.45 (0.01, 7.68)	0.33 (0.01, 6.43)
1.35 (0.1, 44.04)	Motavizumab	21367.07 (0, 8.86040823969649e+28)	0.63 (0.18, 1.96)	0.47 (0.09, 1.88)
0 (0, 1347470867106858)	0 (0, 784023877300891)	Nirsevimab	0 (0, 504596108636899)	0 (0, 346926025479572)
2.2 (0.13, 84.25)	1.59 (0.51, 5.41)	33999.92 (0, 1.38689577917869e+29)	Palivizumab	0.74 (0.13, 3.63)
3.03 (0.16, 134.87)	2.12 (0.53, 11.6)	47959.76 (0, 1.86085058214622e+29)	1.35 (0.28, 7.75)	Placebo

Appendix table S46: details of continuous outcomes

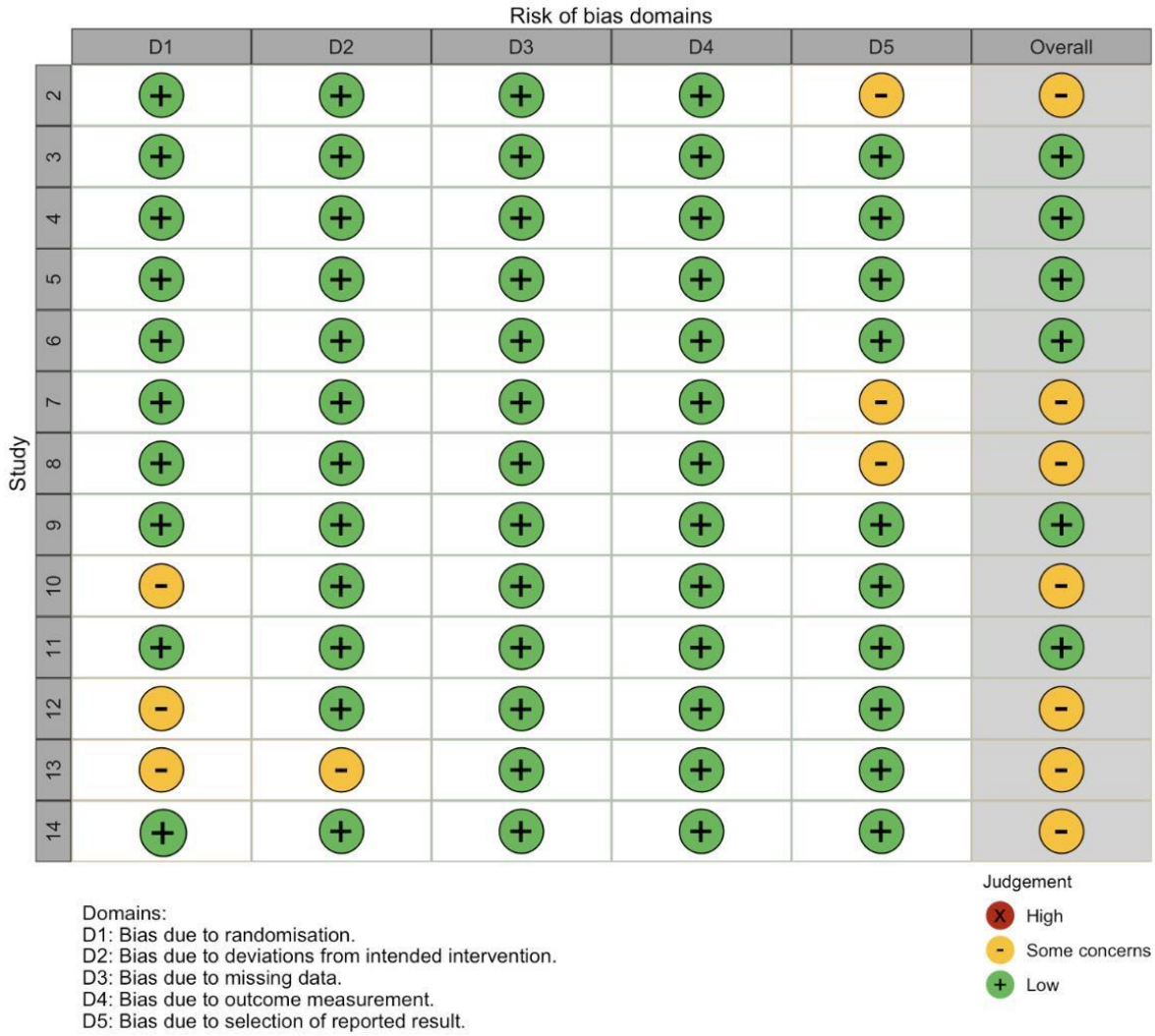
First author, year	Intervention	Comparison	Participants (I/C)	mean (I)	mean (C)
Duration of MV use (total days/100 children)					
O'Brien KL, 2015	Motavizumab	Placebo	1417/710	0.21	1.83
Carbonell-Estrany, 2010	Motavizumab	Palivizumab	3329/3306	0.5	3.8
Feltes, 2003	Palivizumab	Placebo	639/648	6.5	54.7
Duration of RSV-related hospital stay (total days/100 children)					
O'Brien KL, 2015	Motavizumab	Placebo	1417/710	7.41	52.96
Carbonell-Estrany, 2010	Motavizumab	Palivizumab	3329/3306	9.1	18.1
Feltes, 2003	Palivizumab	Placebo	639/648	57.4	129
Griffin MP, 2020	Nirsevimab	Placebo	969/484	5.37	28.93
Duration of RSV ICU stay (total days/100 children)					
O'Brien KL, 2015	Motavizumab	Placebo	1417/710	0.28	3.66
Carbonell-Estrany, 2010	Motavizumab	Palivizumab	3329/3306	2	6.3
Feltes, 2003	Palivizumab	Placebo	639/648	15.9	71.2
Duration of supplemental oxygen use					
O'Brien KL, 2015	Motavizumab	Placebo	1417/710	6.28	44.93
Carbonell-Estrany, 2010	Motavizumab	Palivizumab	3329/3306	4.1	9.5
Feltes, 2003	Palivizumab	Placebo	639/648	27.9	101.5

APPENDIX FIGURES

Appendix figure S1: risk of bias assessment



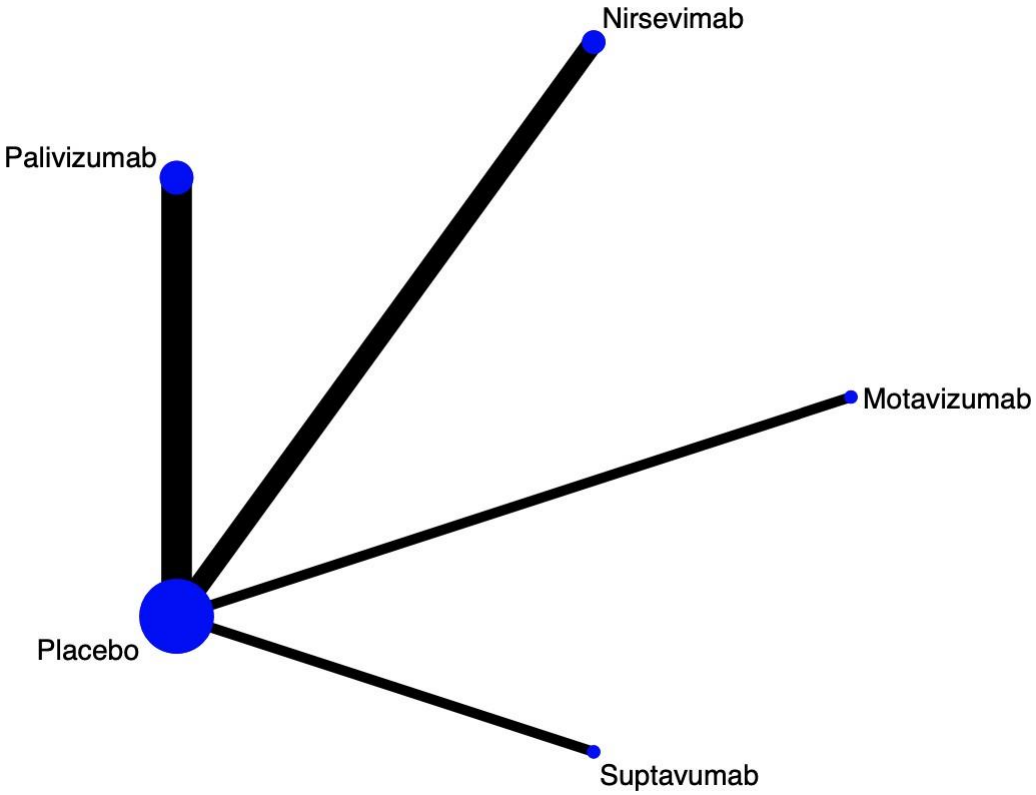
Appendix figure S1-1: risk of bias assessment for dichotomous outcome



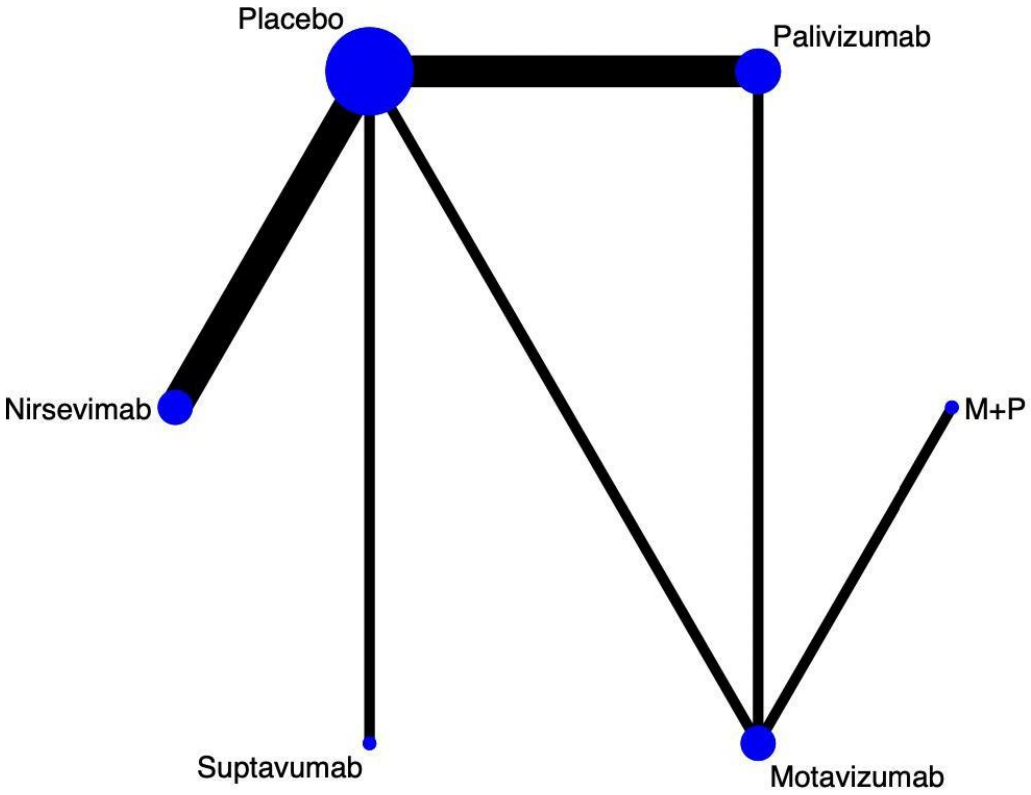
Appendix figure S1-2: risk of bias assessment for continuous outcome

Appendix figure S2-S9: network plots

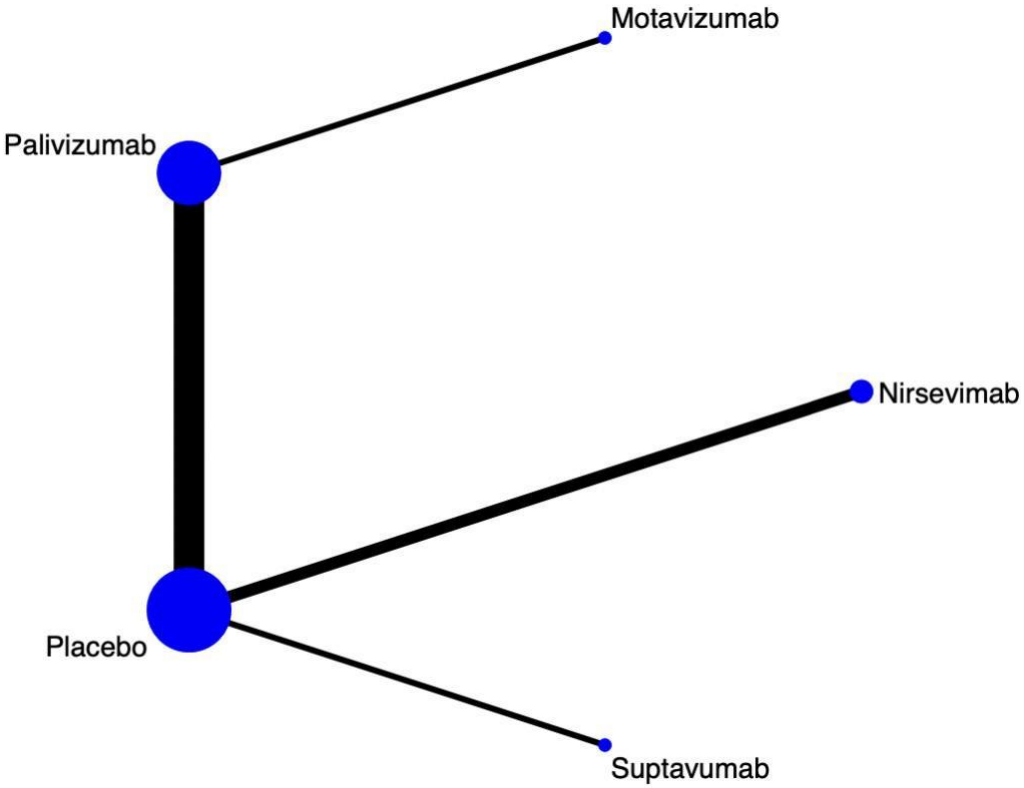
Network plot comparing mAbs in preventing RSV in children. The line width is proportional to the number of studies comparing each pair of interventions, and the size of each node is proportional to the number of participants (sample size).



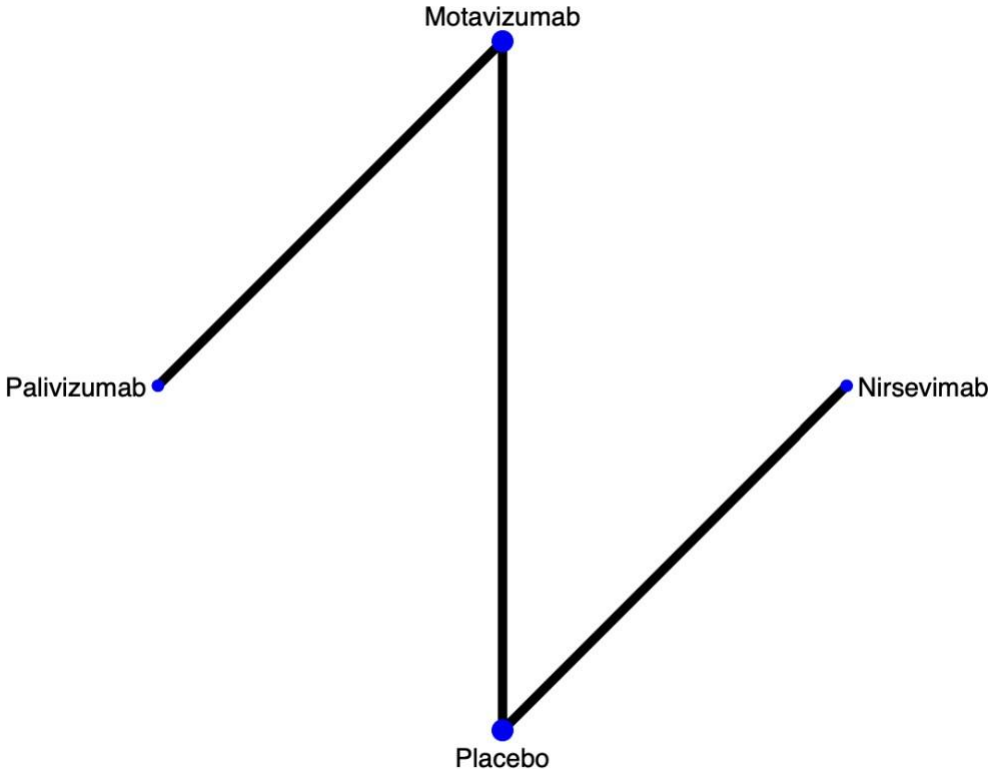
Appendix figure S2: network plot of rate of RSV infection



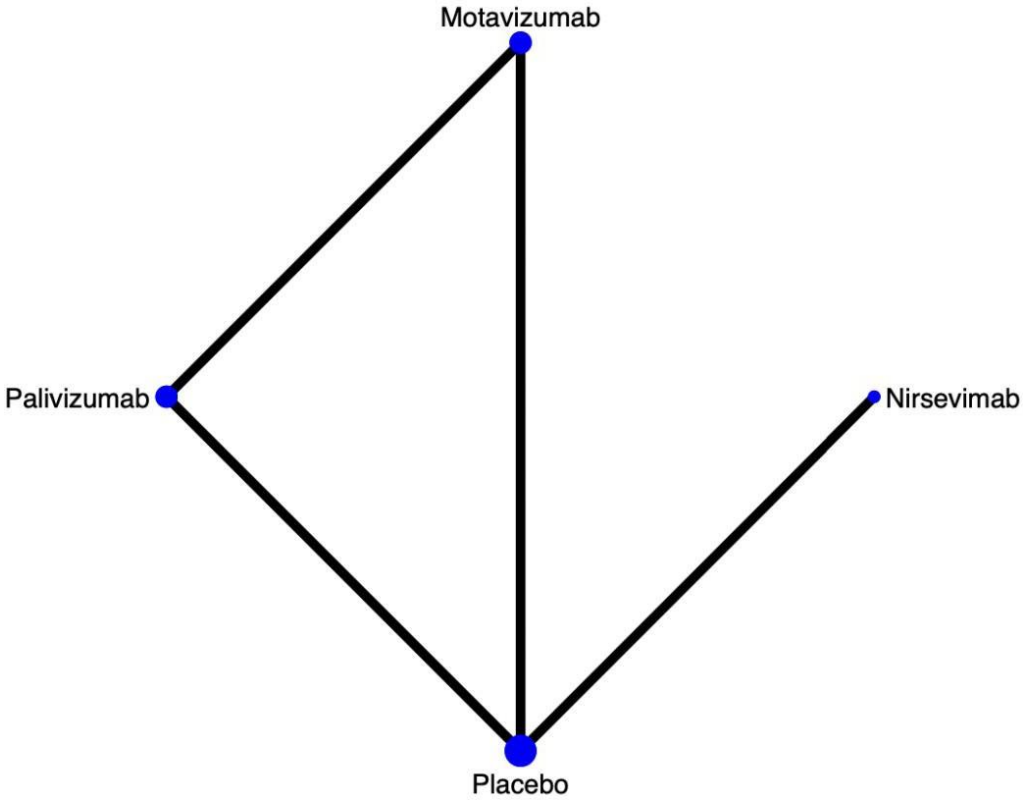
Appendix figure S3: network plot of all-cause mortality



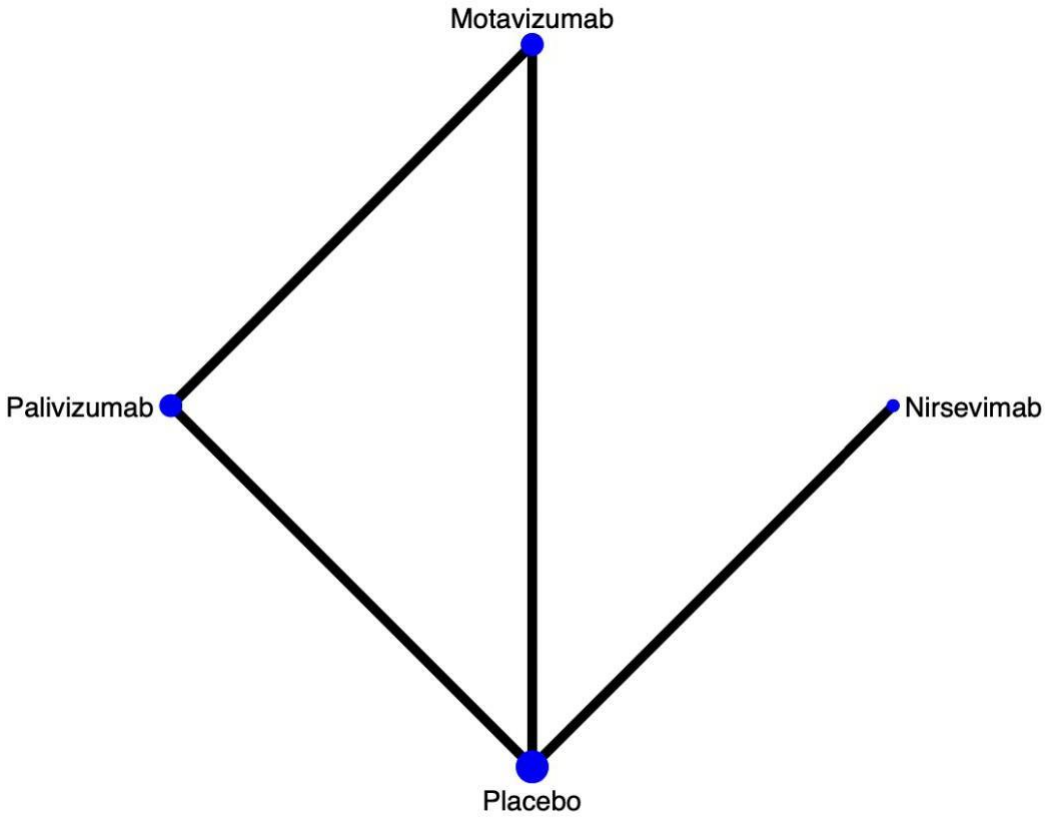
Appendix figure S4: network plot of RSV-related hospitalization



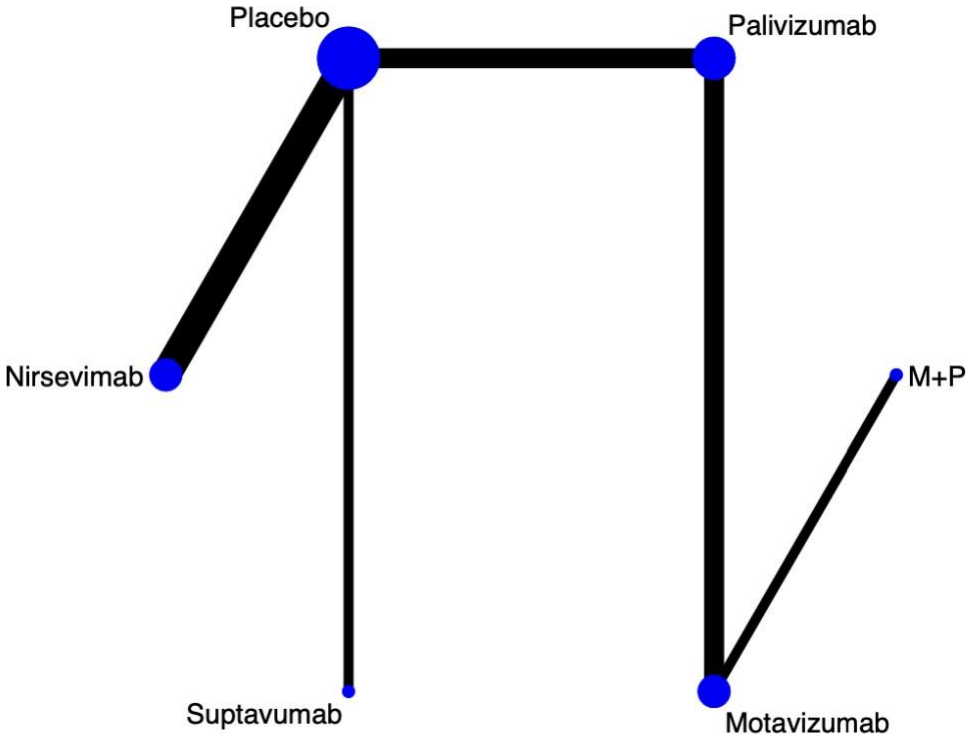
Appendix figure S5: network plot of supplemental oxygen use



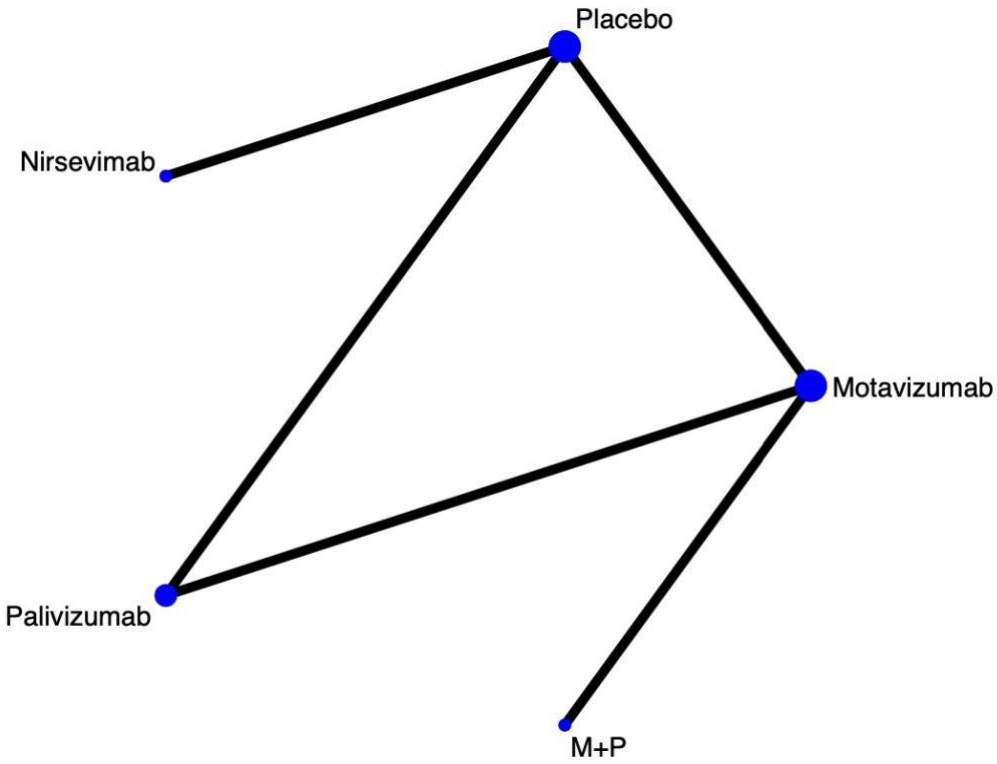
Appendix figure S6: network plot of rate of mechanical ventilation use



Appendix figure S7: network plot of rate of ICU admission

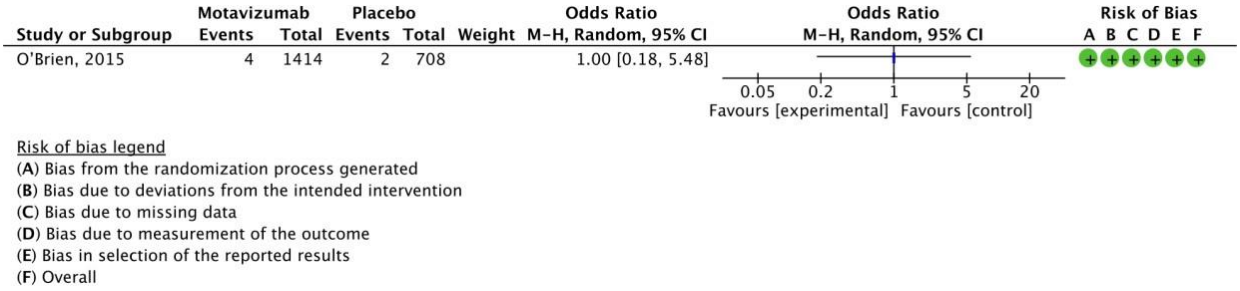


Appendix figure S8: network plot of drug-related adverse events

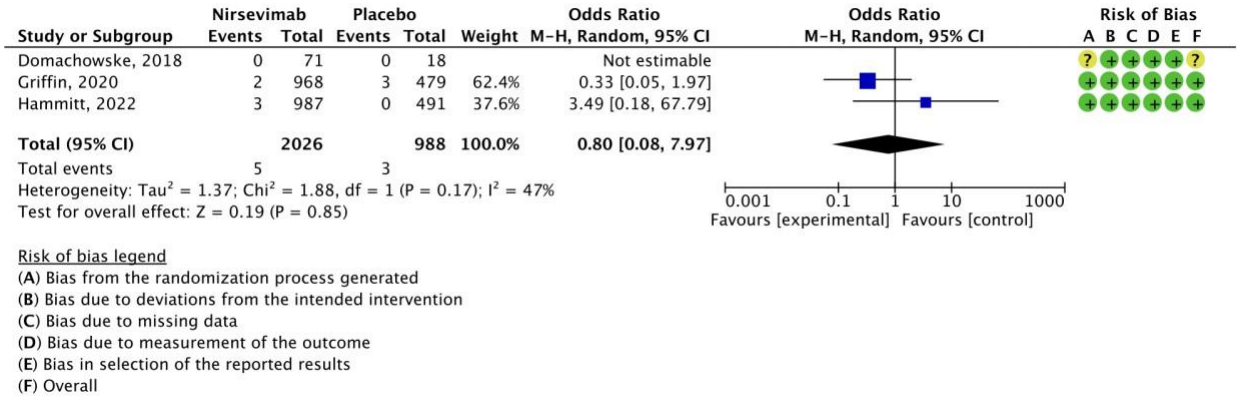


Appendix figure S9: network plot of drug-related serious adverse events

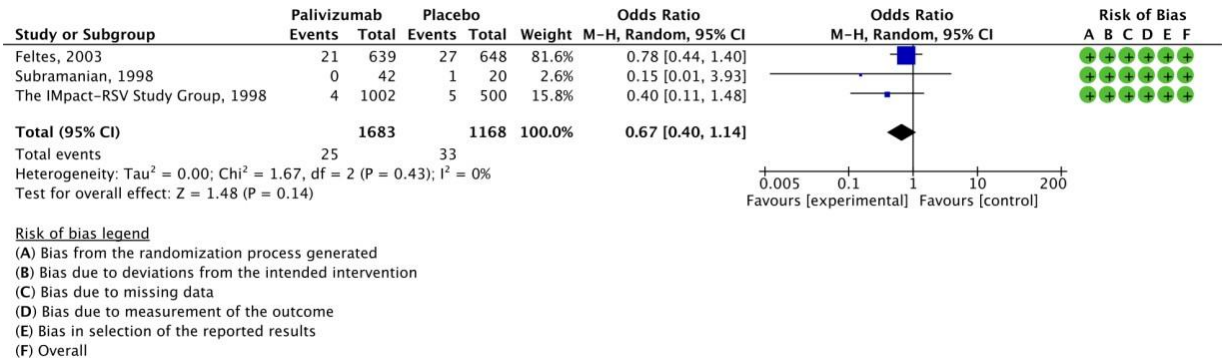
Appendix figure S10-S15: forest plots of all-cause mortality in pairwise meta-analysis



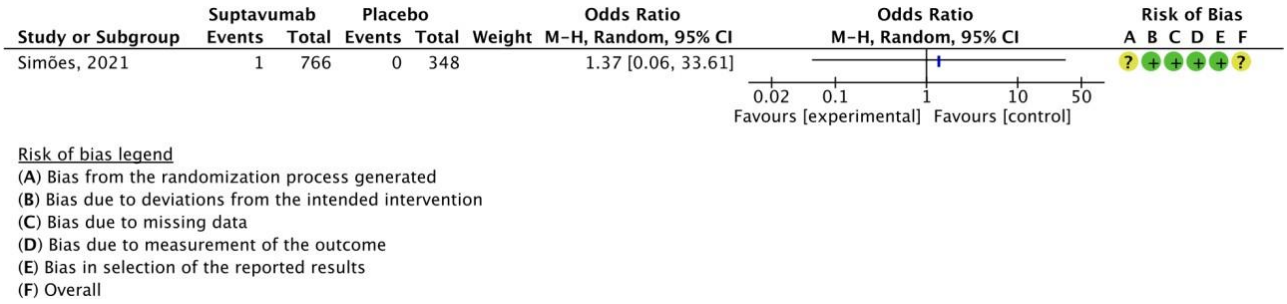
Appendix figure S10: results of motavizumab compared with placebo in all-cause mortality



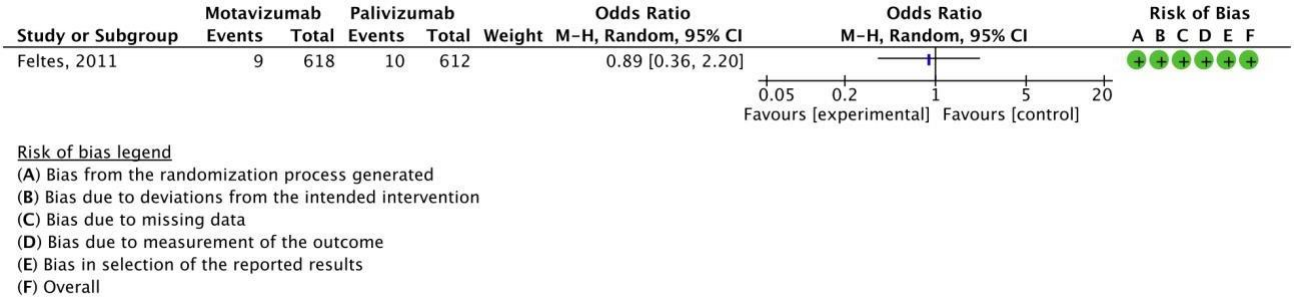
Appendix figure S11: results of nirsevimab compared with placebo in all-cause mortality



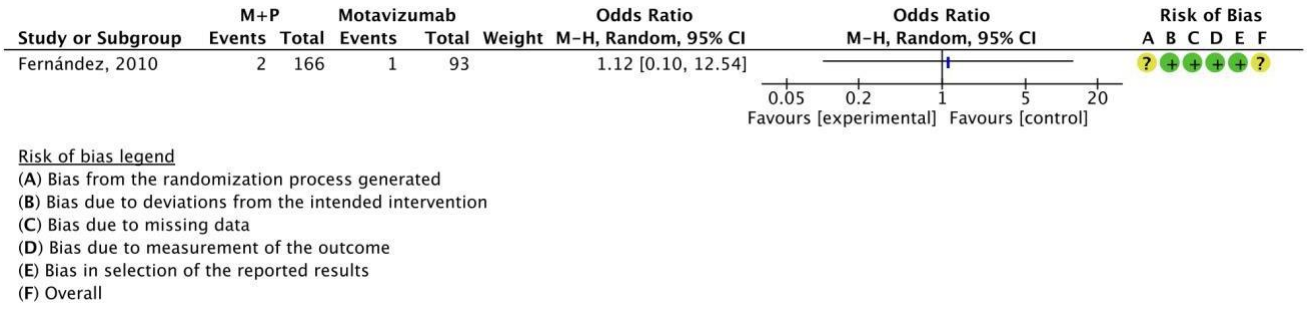
Appendix figure S12: results of palivizumab compared with placebo in all-cause mortality



Appendix figure S13: results of suptavumab compared with placebo in all-cause mortality

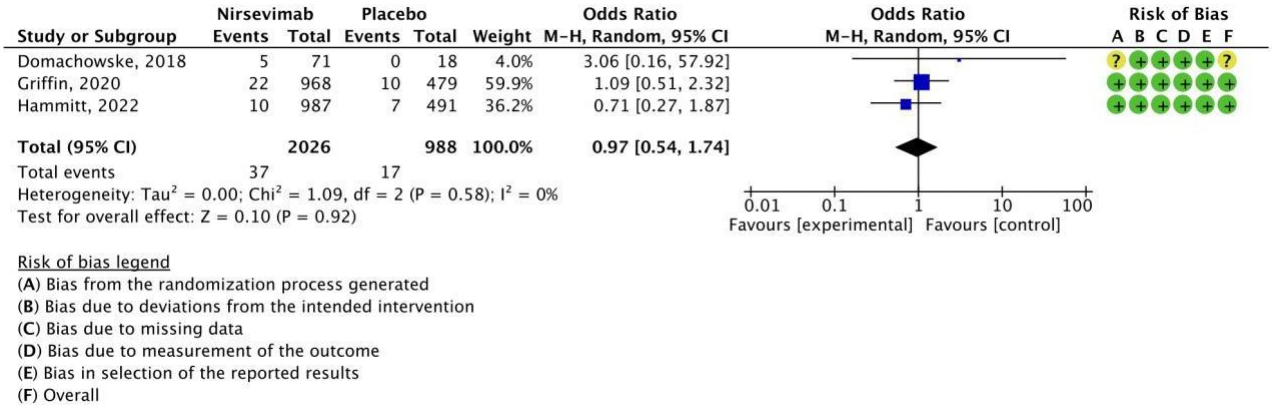


Appendix figure S14: results of motavizumab compared with palivizumab in all-cause mortality

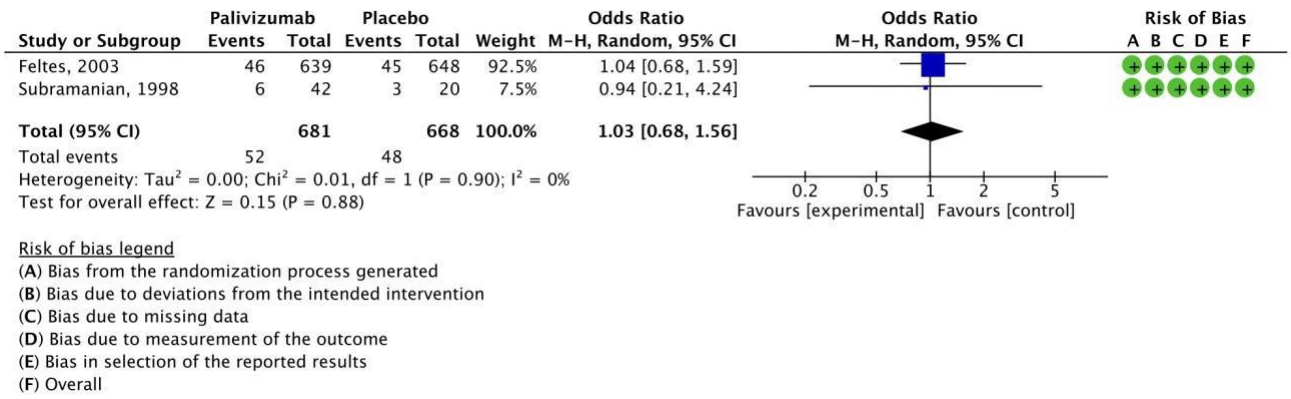


Appendix figure S15: results of motavizumab in combination with palivizumab compared with motavizumab in all-cause mortality

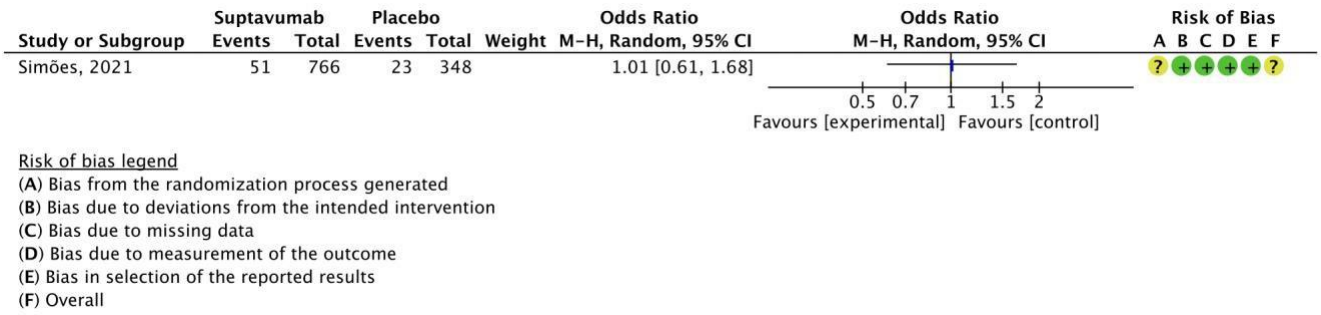
Appendix figure S16-S20: forest plots of drug-related adverse events in pairwise meta-analysis



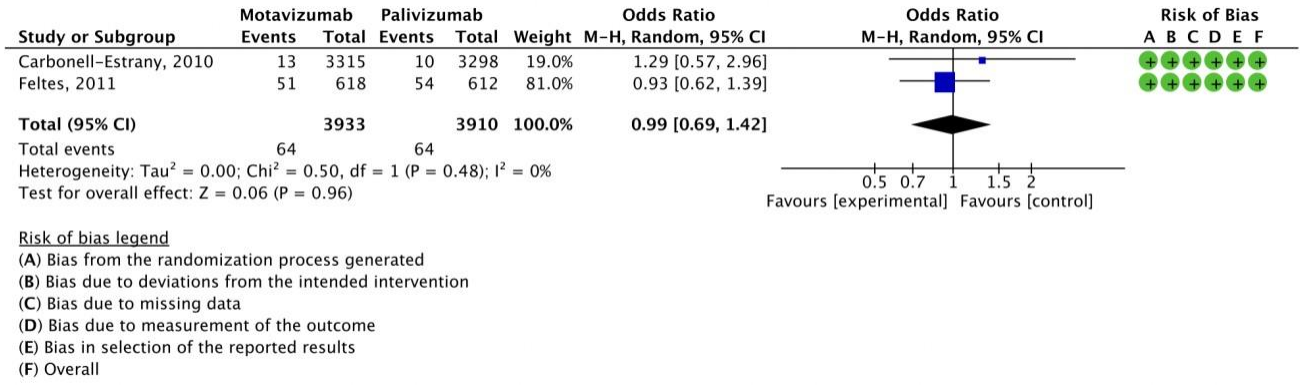
Appendix figure S16: results of nirsevimab compared with placebo in drug-related adverse events



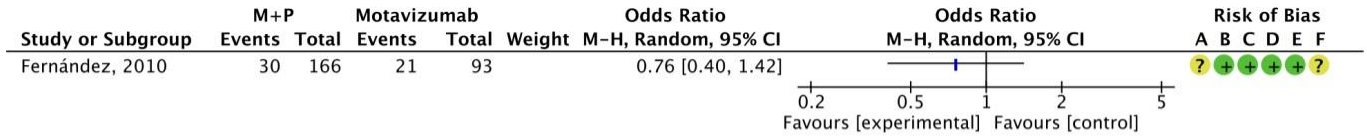
Appendix figure S17: results of palivizumab compared with placebo in drug-related adverse events



Appendix figure S18: results of suptavumab compared with placebo in drug-related adverse events



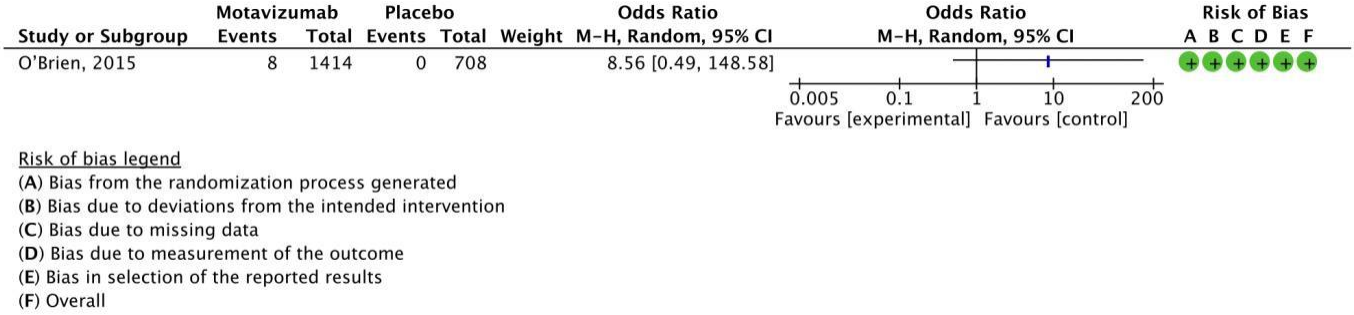
Appendix figure S19: results of motavizumab compared with palivizumab in drug-related adverse events



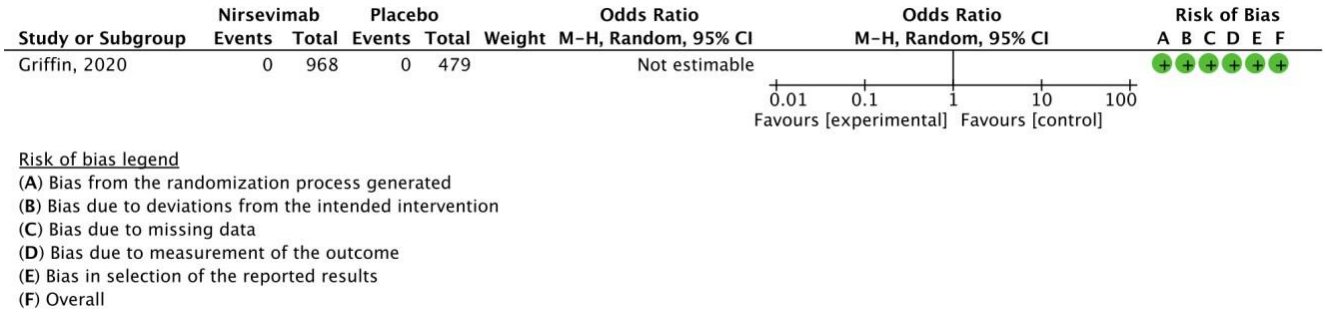
Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S20: results of motavizumab in combination with palivizumab compared with motavizumab in drug-related adverse events

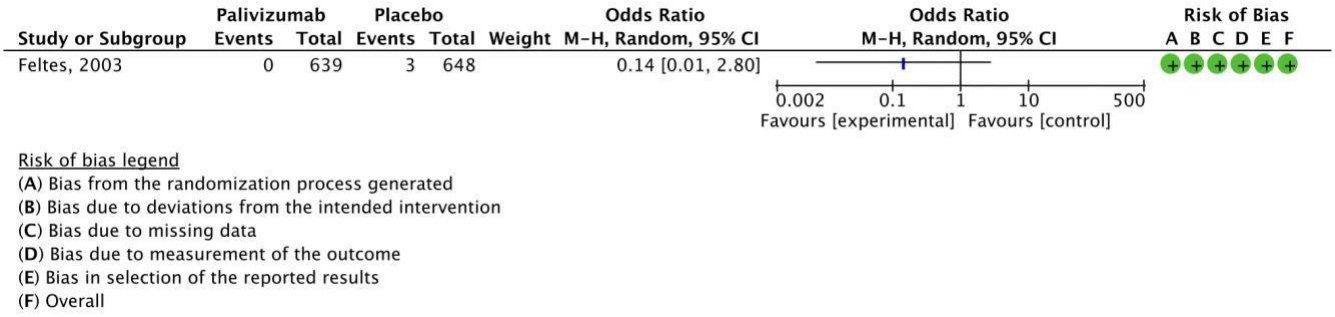
Appendix figure S21-S25: forest plots of drug-related serious adverse events in pairwise meta-analysis



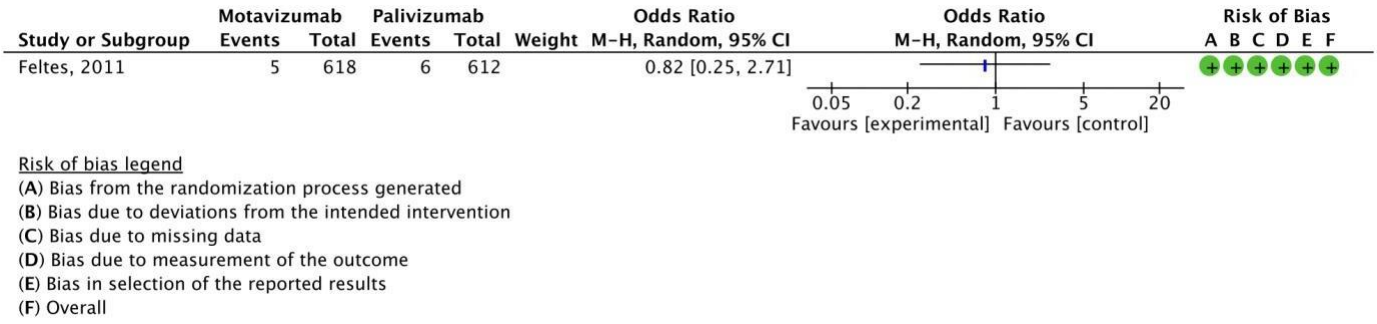
Appendix figure S21: results of motavizumab compared with placebo in drug-related serious adverse events



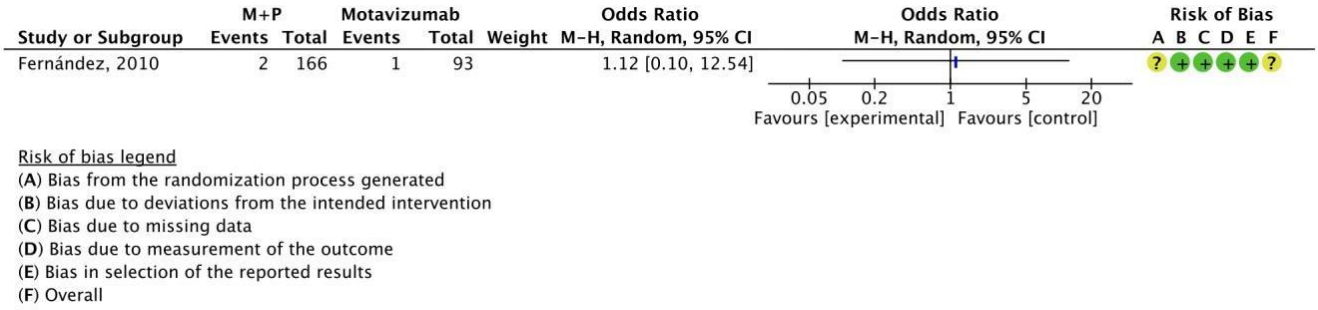
Appendix figure S22: results of nirsevimab compared with placebo in drug-related serious adverse events



Appendix figure S23: results of palivizumab compared with placebo in drug-related serious adverse events

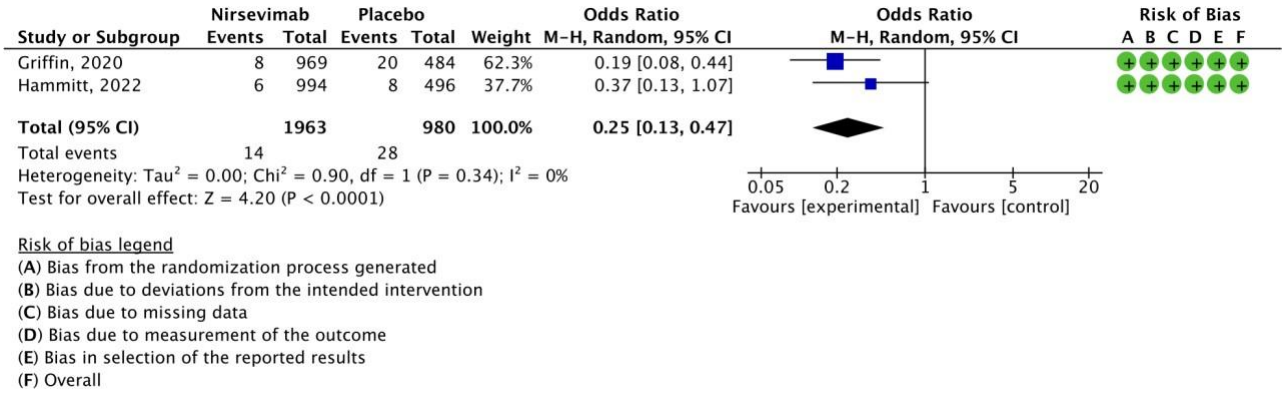


Appendix figure S24: results of motavizumab compared with palivizumab in drug-related serious adverse events

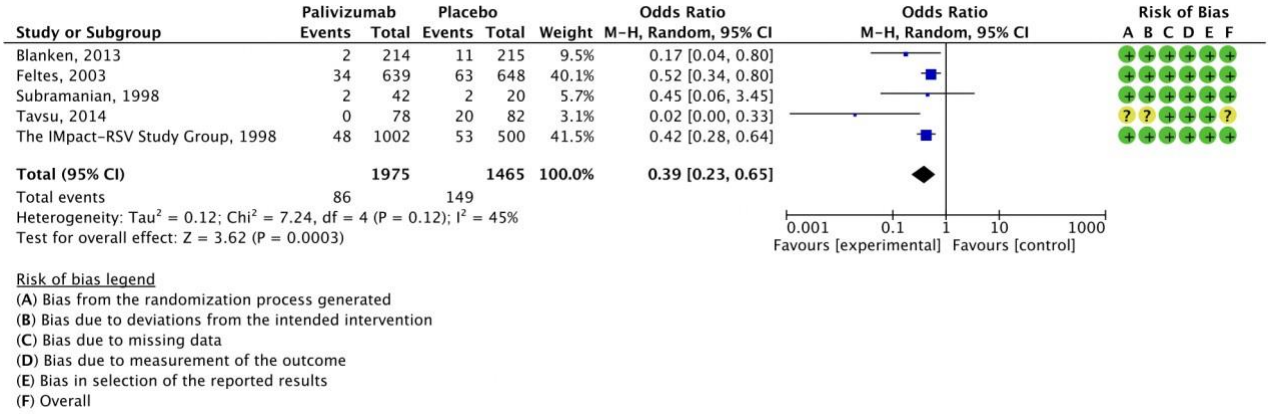


Appendix figure S25: results of motavizumab in combination with palivizumab compared with motavizumab in drug-related serious adverse events

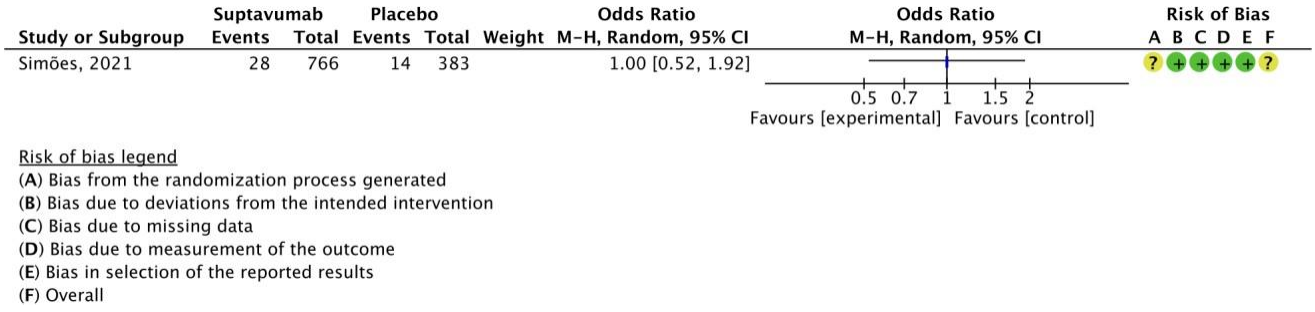
Appendix figure S26-S29: forest plots of rate of RSV-related hospitalization in pairwise meta-analysis



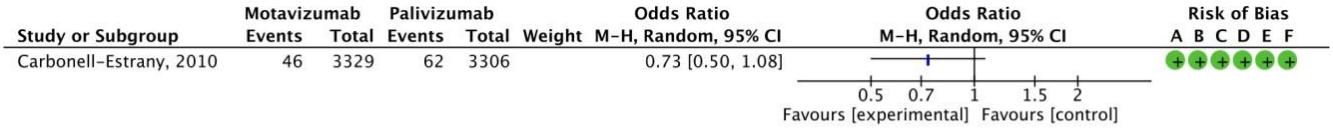
Appendix figure S26: results of nirsevimab compared with placebo in RSV-related hospitalization



Appendix figure S27: results of palivizumab compared with placebo in RSV-related hospitalization



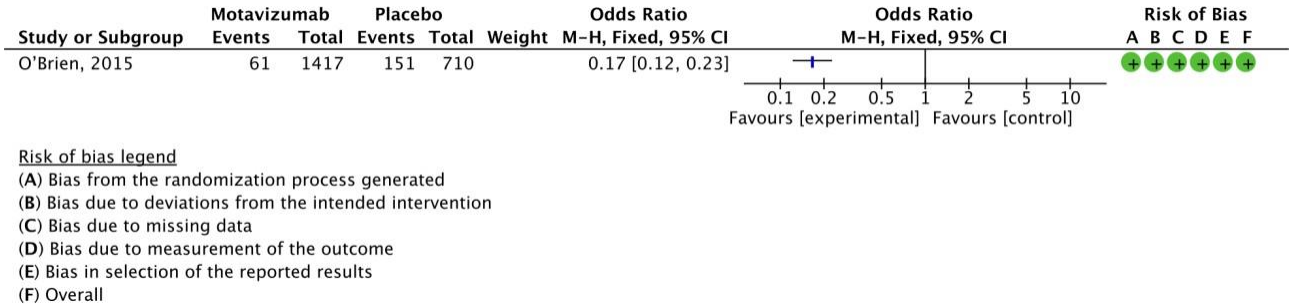
Appendix figure S28: results of suptavumab compared with placebo in RSV-related hospitalization



Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

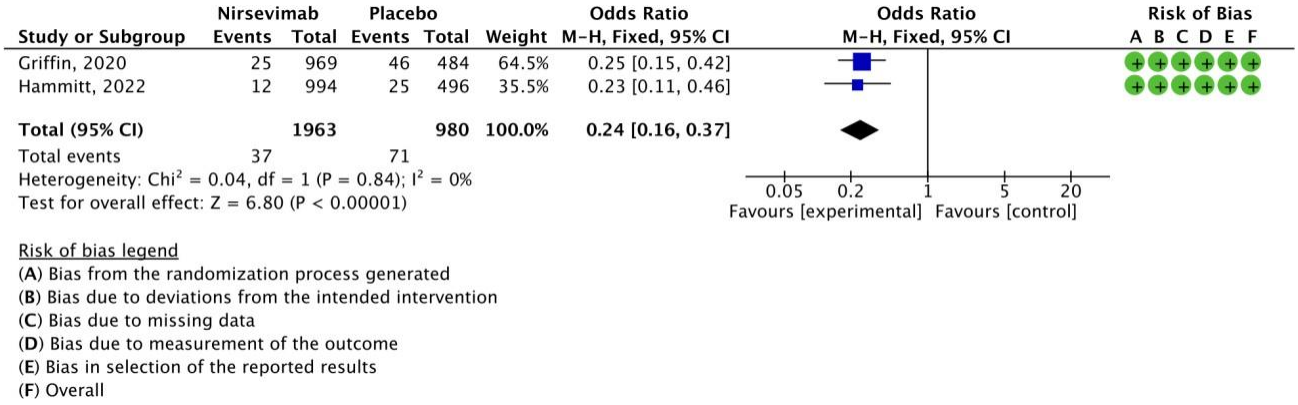
Appendix figure S29: results of motavizumab compared with palivizumab in RSV-related hospitalization

Appendix figure S30-S33: forest plots of rate of RSV infection in pairwise meta-analysis

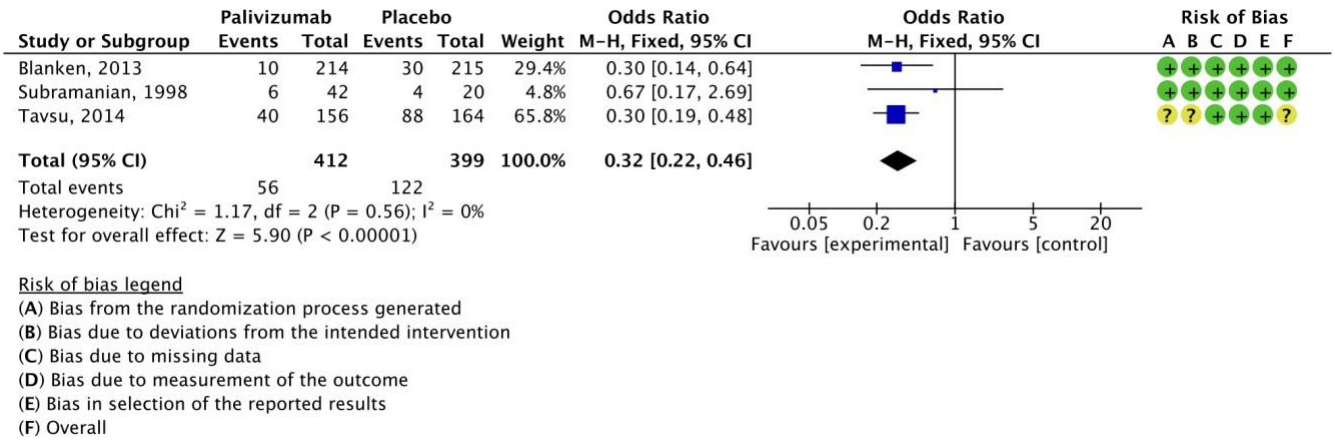


Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

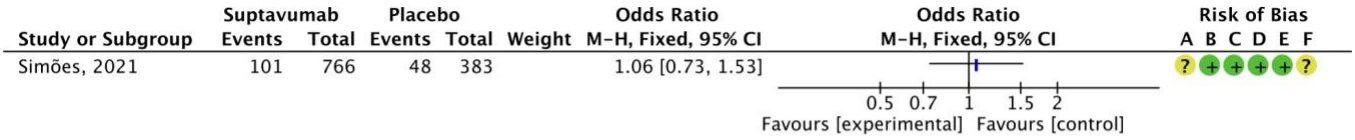
Appendix figure S30: results of motavizumab compared with placebo in RSV infection



Appendix figure S31: results of nirsevimab compared with placebo in RSV infection



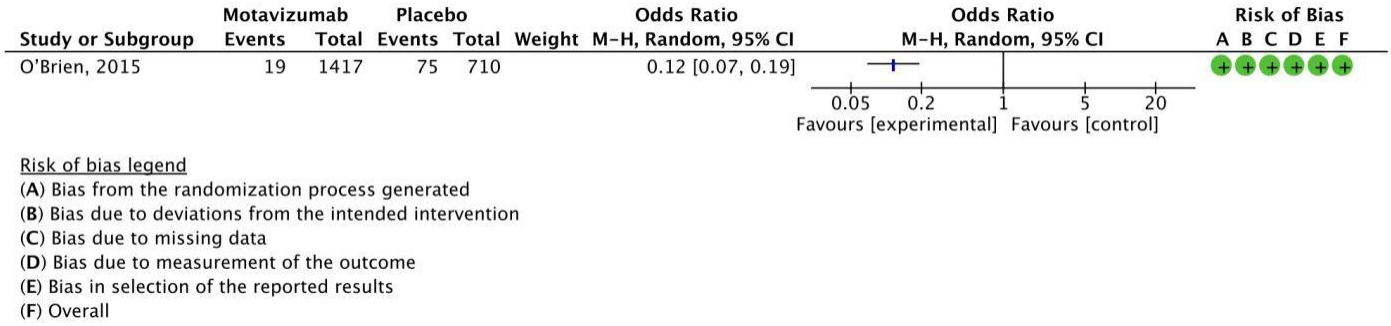
Appendix figure S32: results of palivizumab compared with placebo in RSV infection



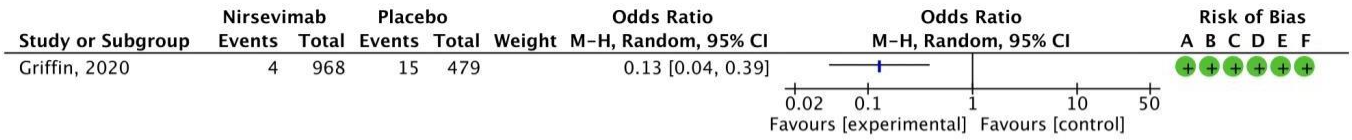
Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S33: results of suptavumab compared with placebo in RSV infection

Appendix figure S34-S36: forest plots of rate of supplemental oxygen use in pairwise meta-analysis

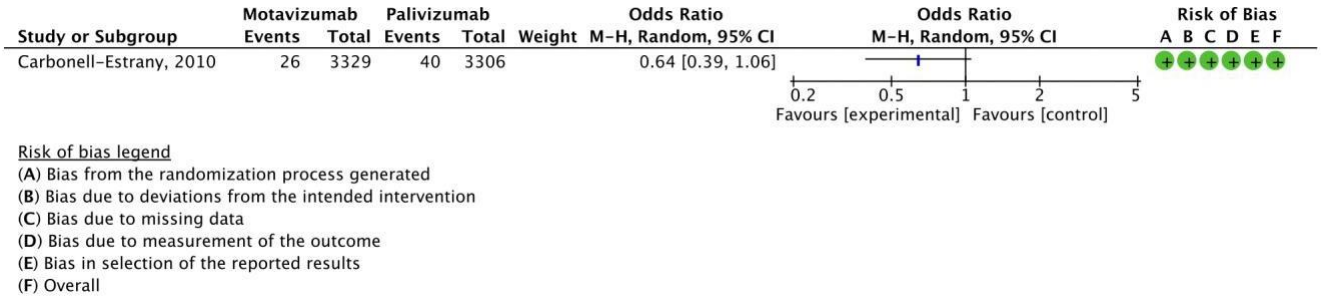


Appendix figure S34: results of motavizumab compared with placebo in supplemental oxygen use



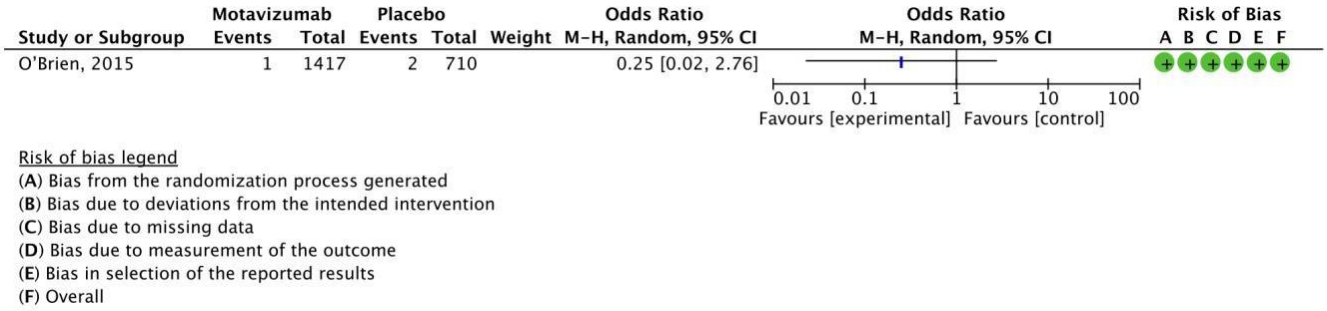
Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S35: results of nirsevimab compared with placebo in supplemental oxygen use



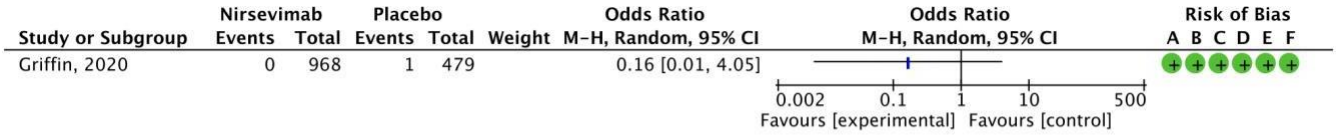
Appendix figure S36: results of motavizumab compared with palivizumab in supplemental oxygen use

Appendix figure S37-S40: forest plots of rate of mechanical ventilation use in pairwise meta-analysis



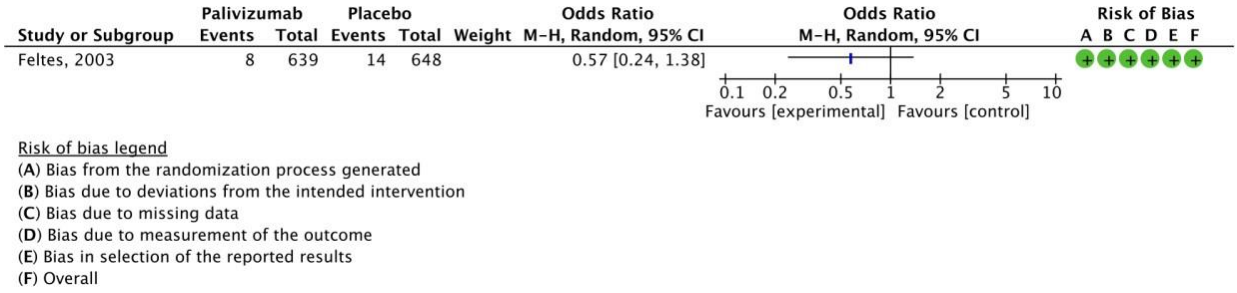
Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S37: results of motavizumab compared with placebo in mechanical ventilation use

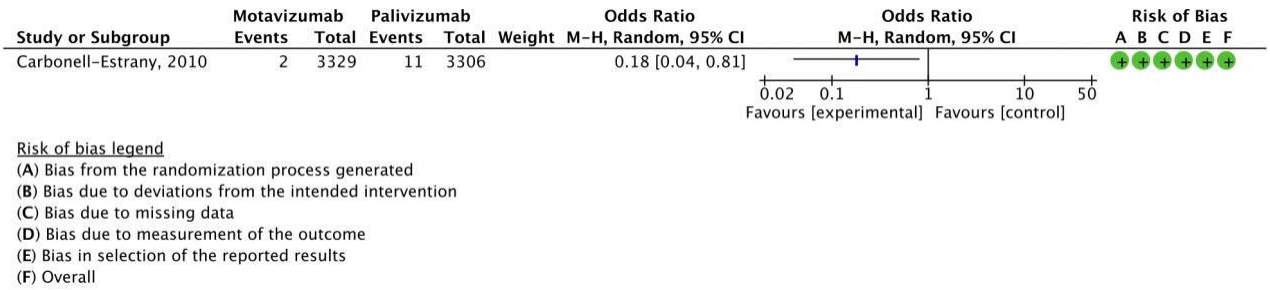


Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S38: results of nirsevimab compared with placebo in mechanical ventilation use

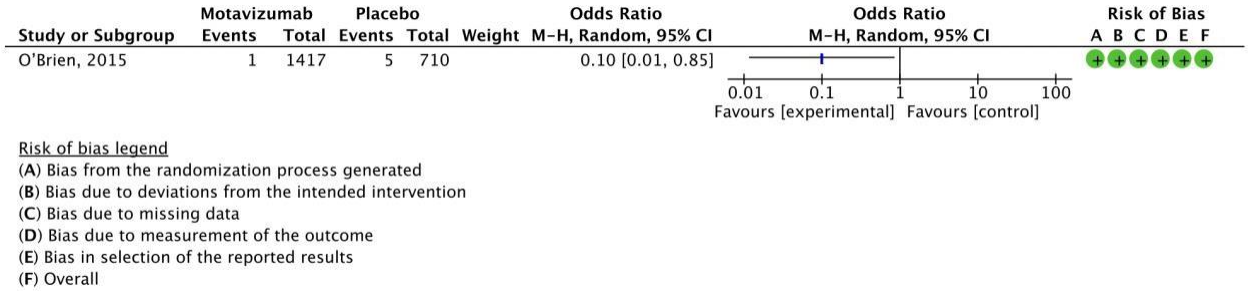


Appendix figure S39: results of palivizumab compared with placebo in mechanical ventilation use



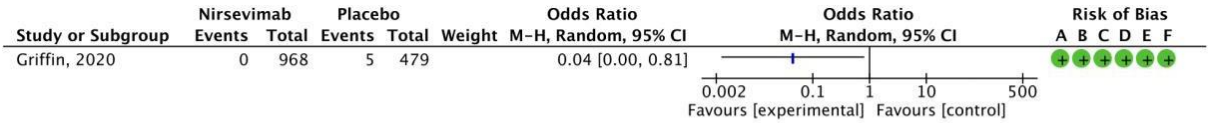
Appendix figure S40: results of motavizumab compared with palivizumab in mechanical ventilation use

Appendix figure S41-S44: forest plots of rate of ICU admission in pairwise meta-analysis



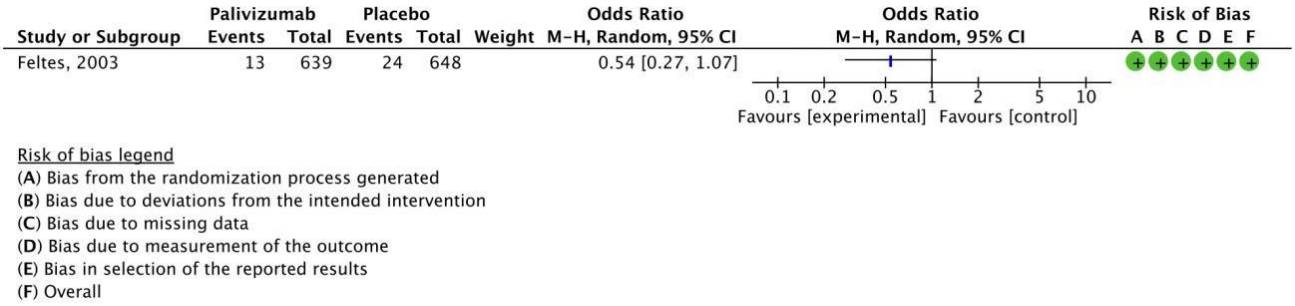
Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S41: results of motavizumab compared with placebo in ICU admission

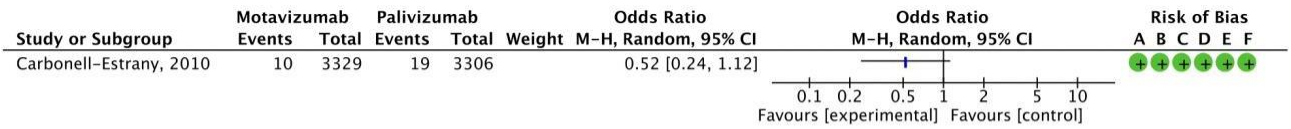


Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S42: results of nirsevimab compared with placebo in ICU admission



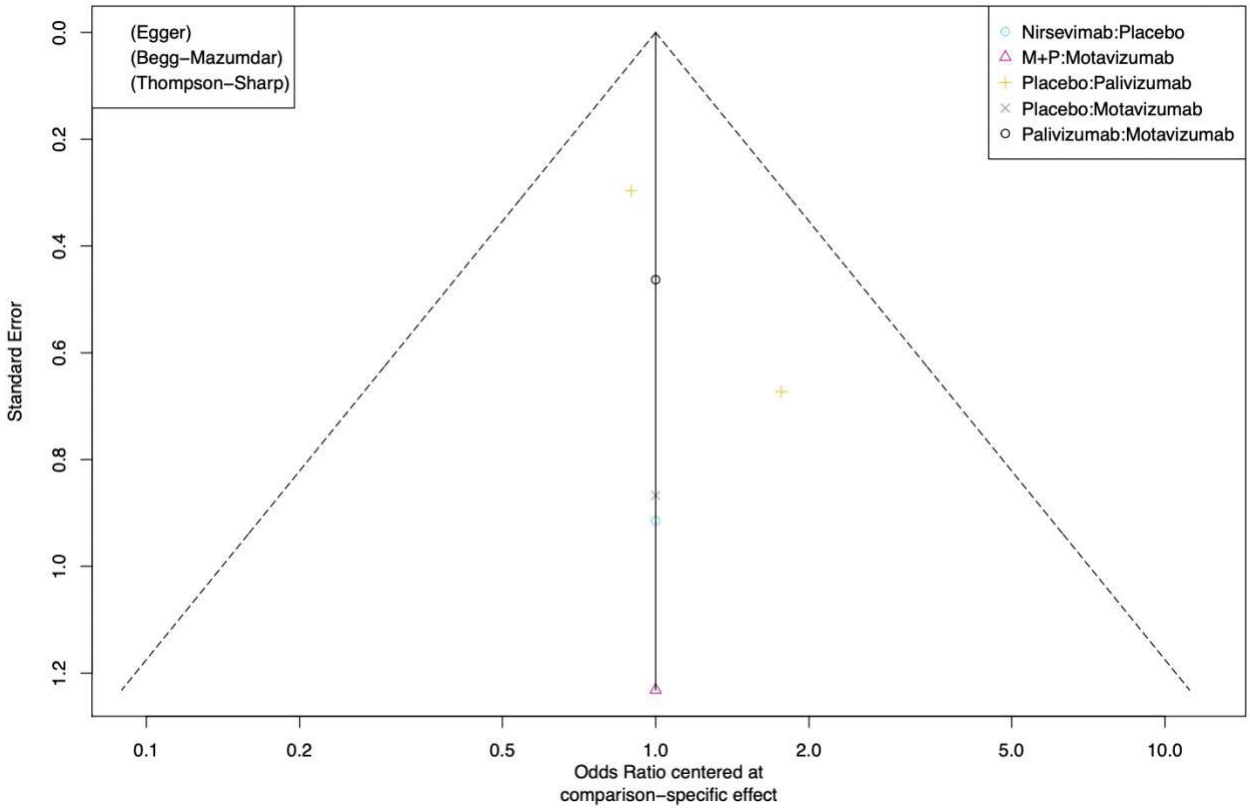
Appendix figure S43: results of palivizumab compared with placebo in ICU admission



Risk of bias legend
(**A**) Bias from the randomization process generated
(**B**) Bias due to deviations from the intended intervention
(**C**) Bias due to missing data
(**D**) Bias due to measurement of the outcome
(**E**) Bias in selection of the reported results
(**F**) Overall

Appendix figure S44: results of motavizumab compared with palivizumab in ICU admission

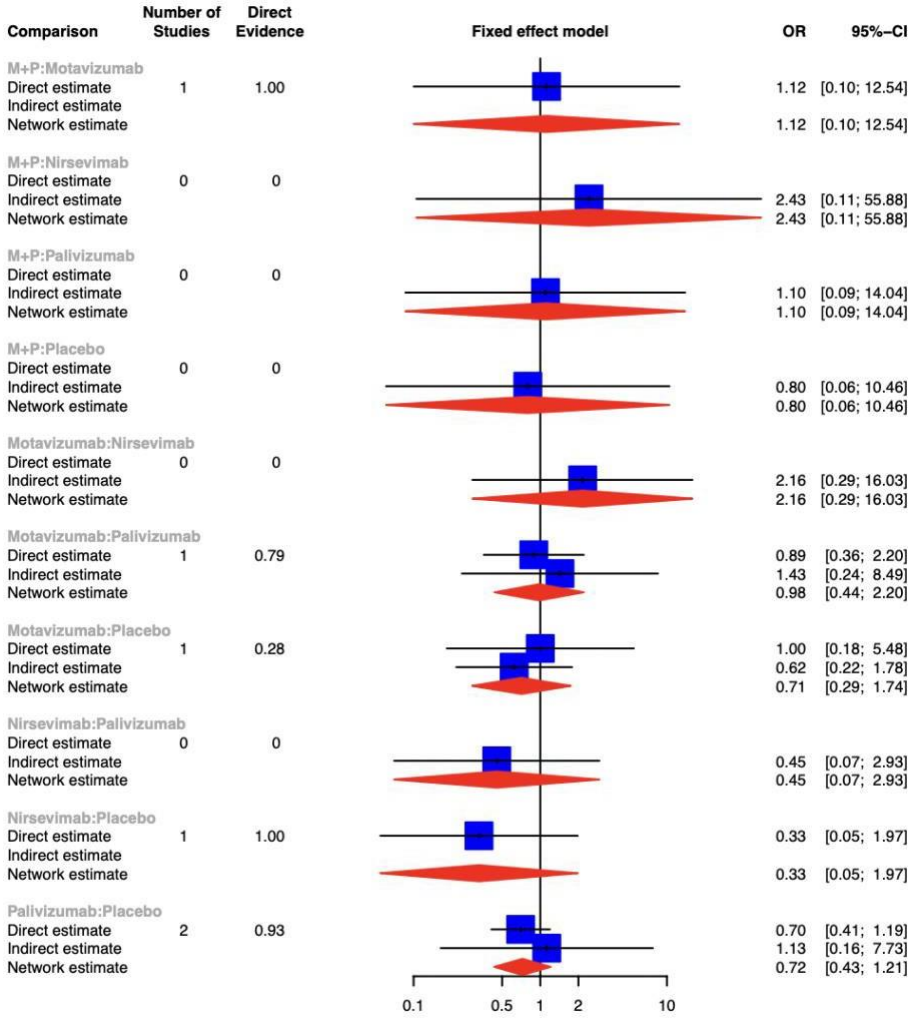
Appendix figure S45: funnel plot of all-cause mortality



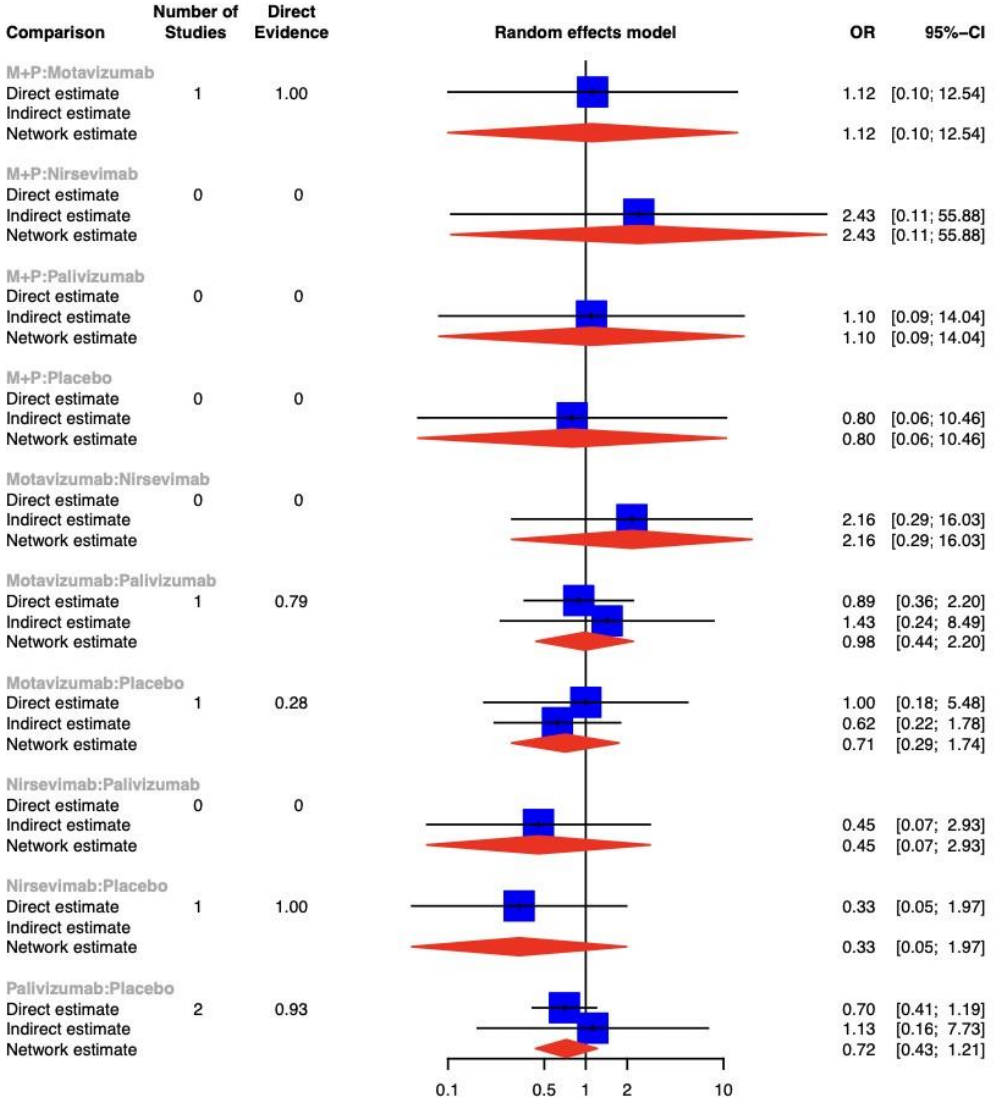
Appendix figure S39: funnel plot of all-cause mortality

Appendix figure S46-S59: node-split plots

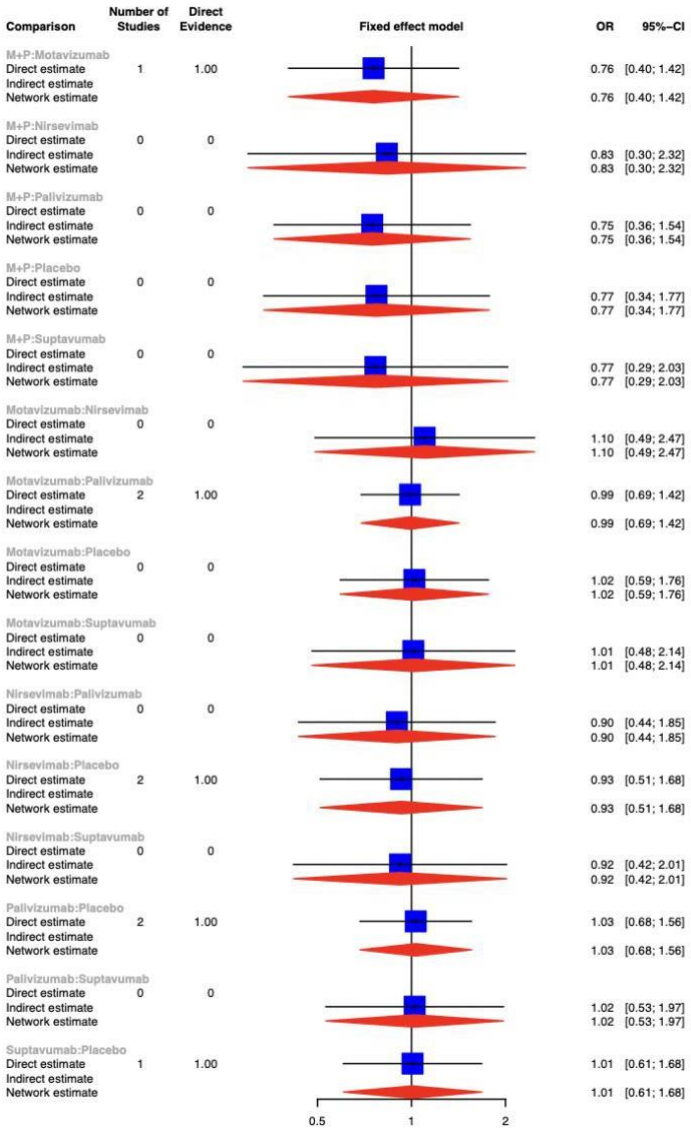
The number of the direct evidence column is the P-value to test for differences between groups.



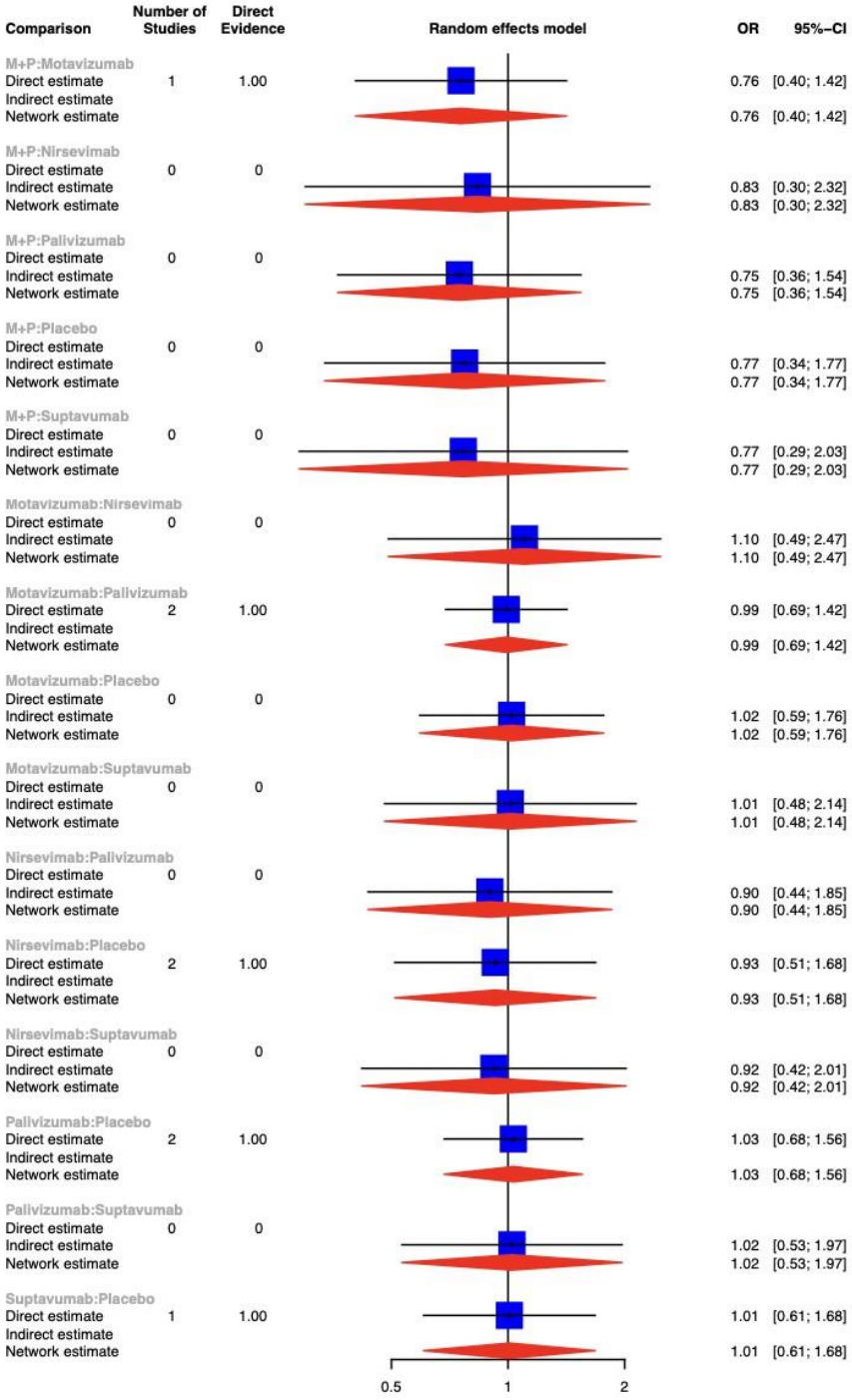
Appendix figure S46: node-split plot of all-cause mortality in fixed effects model



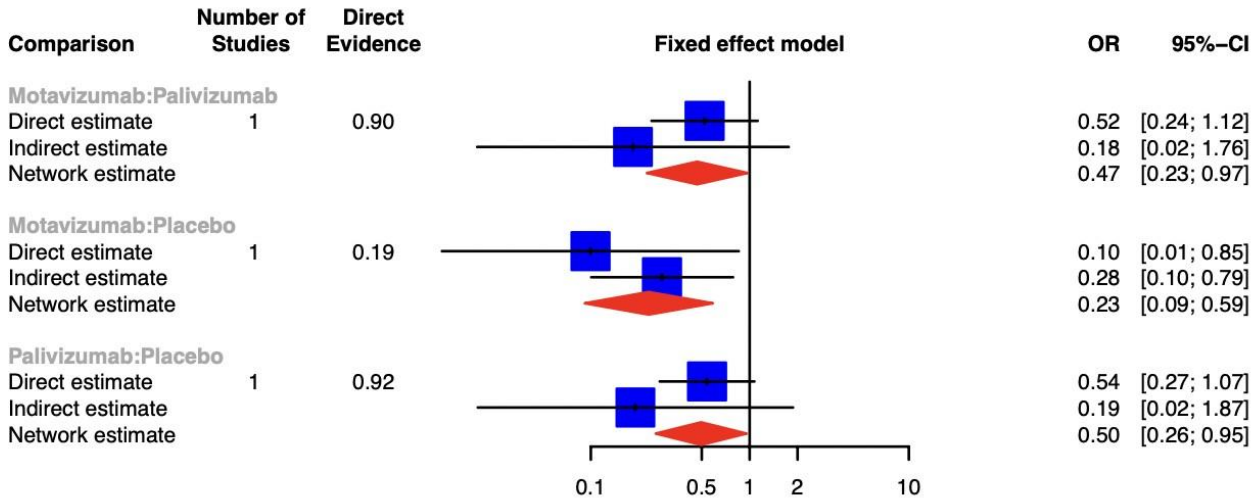
Appendix figure S47: node-split plot of all-cause mortality in random effects model



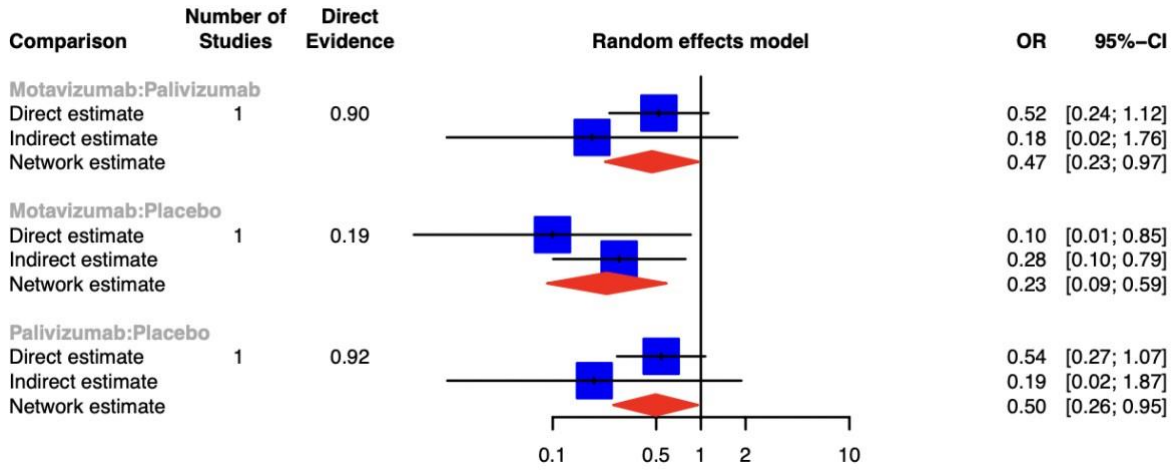
Appendix figure S48: node-split plot of drug-related adverse events in fixed effects model



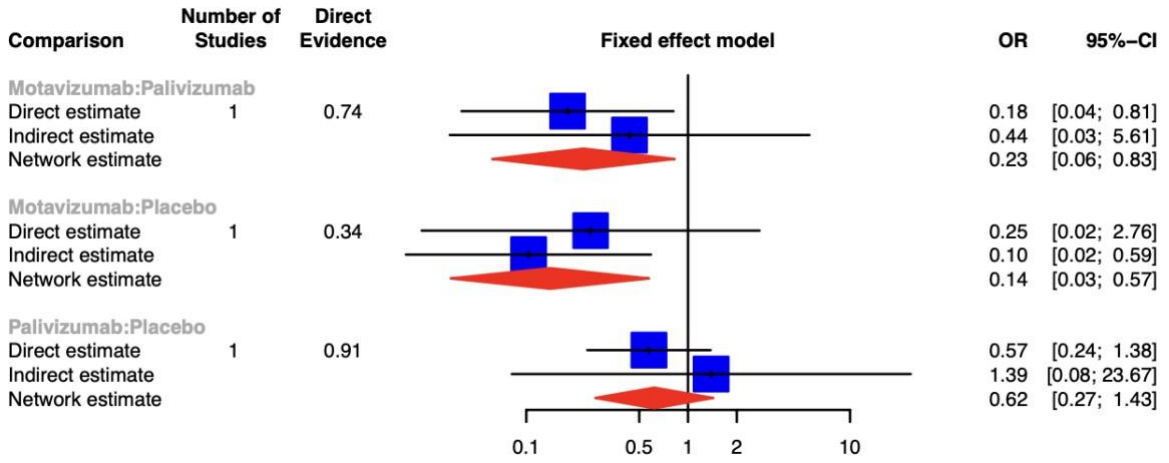
Appendix figure S49: node-split plot of drug-related adverse events in random effects model



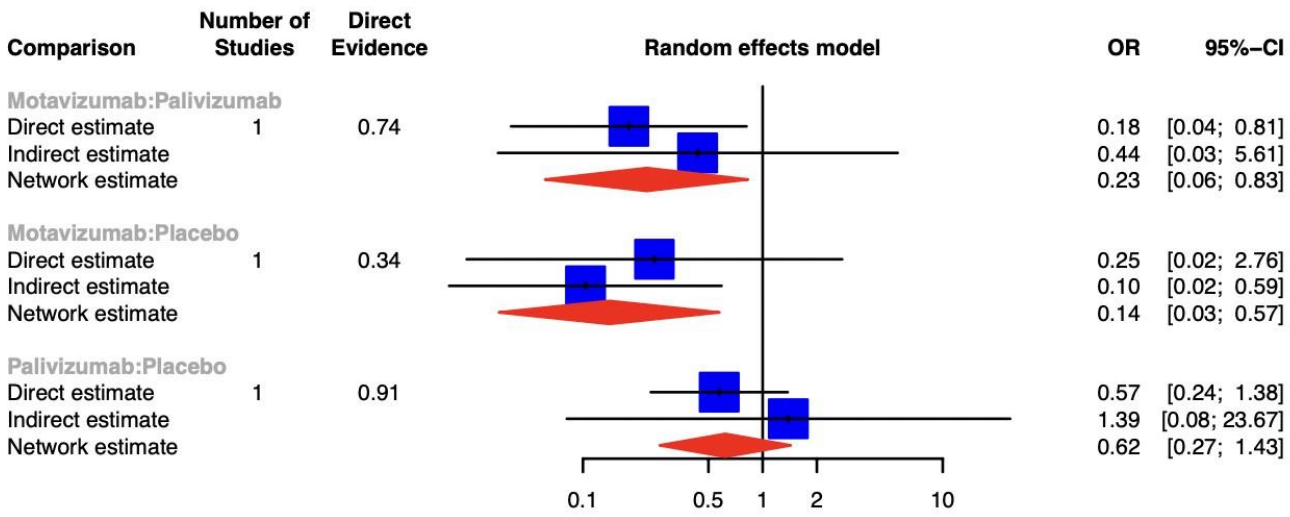
Appendix figure S50: node-split plot of rate of ICU admission in fixed effects model



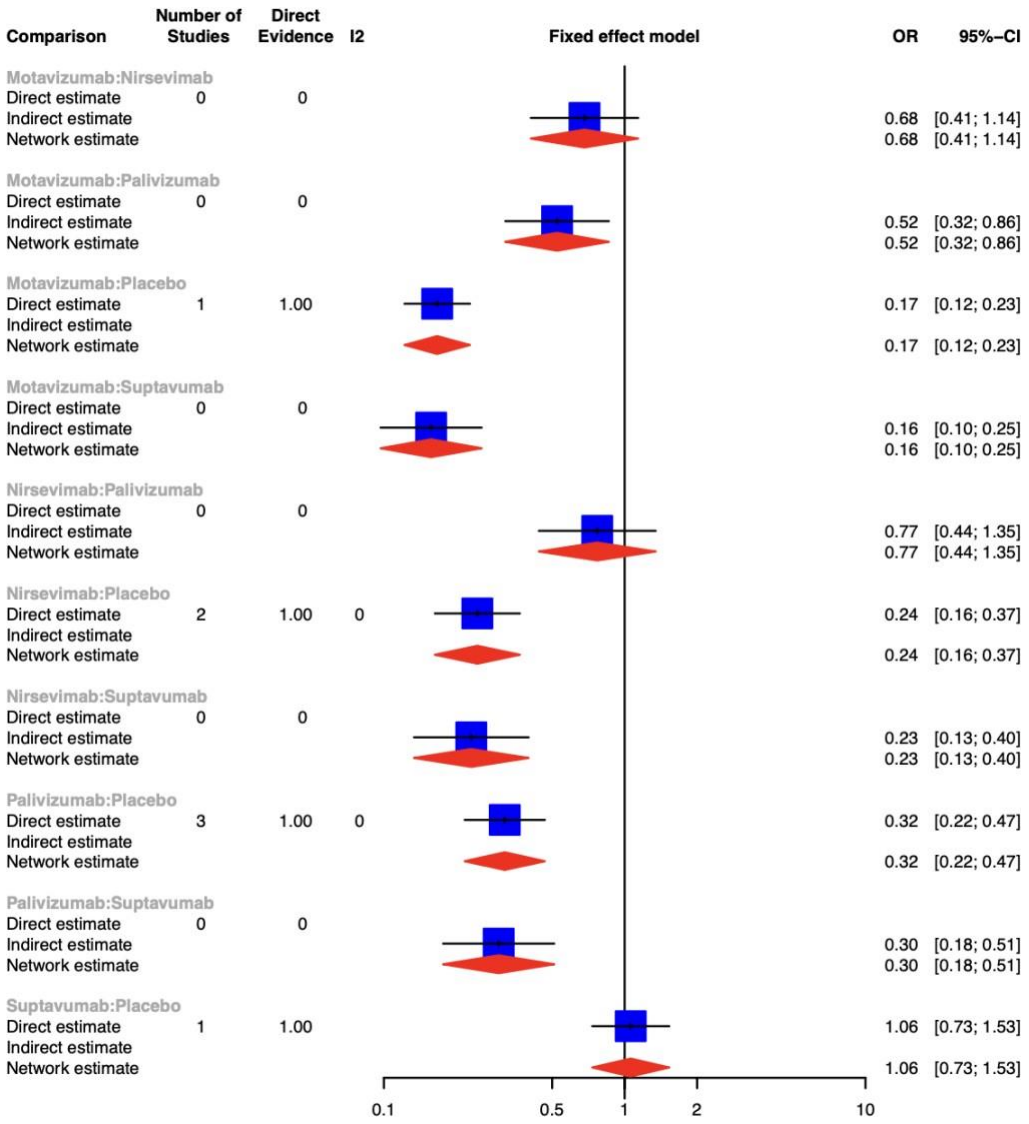
Appendix figure S51: node-split plot of rate of ICU admission in random effects model



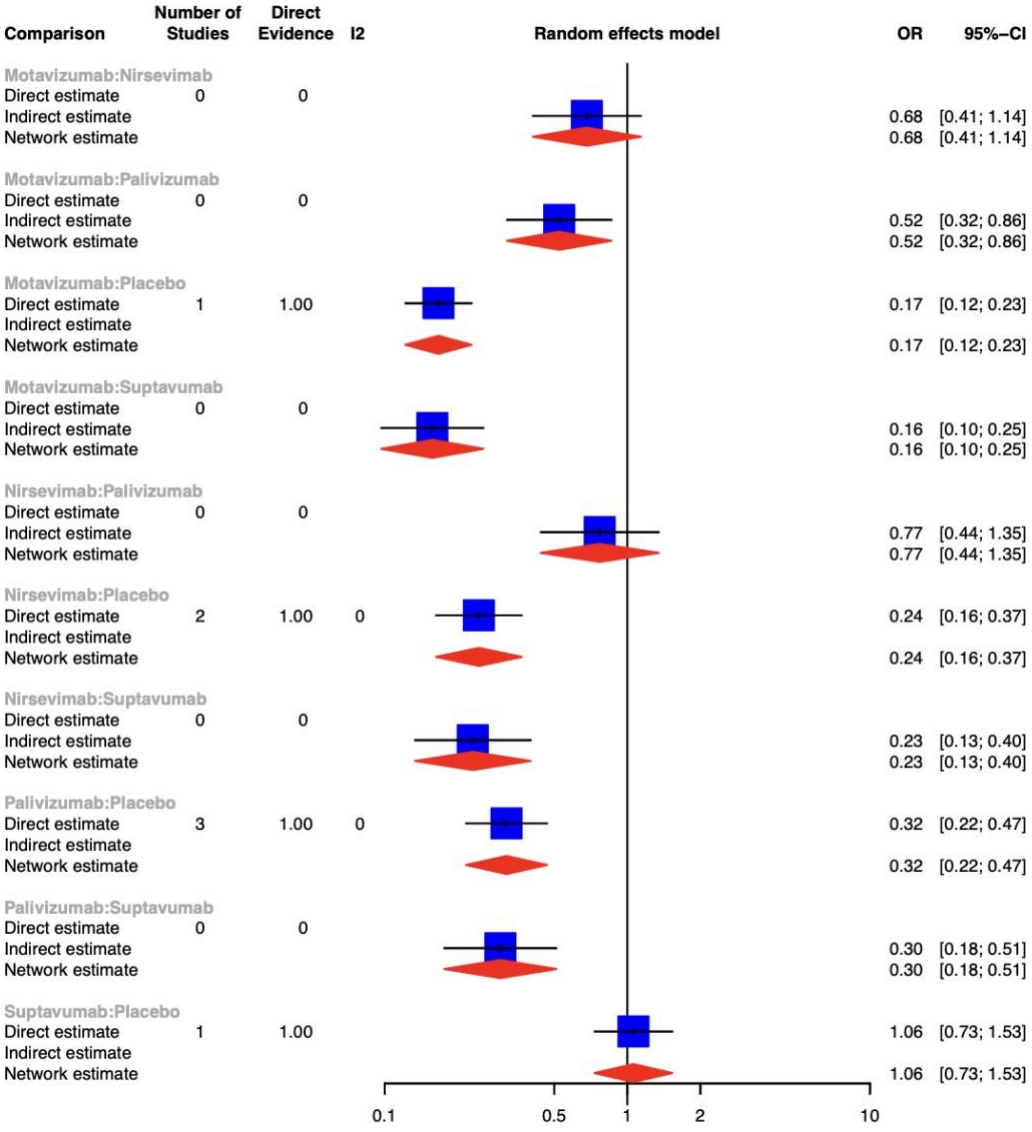
Appendix figure S52: node-split plot of rate of mechanical ventilation use in fixed effects model



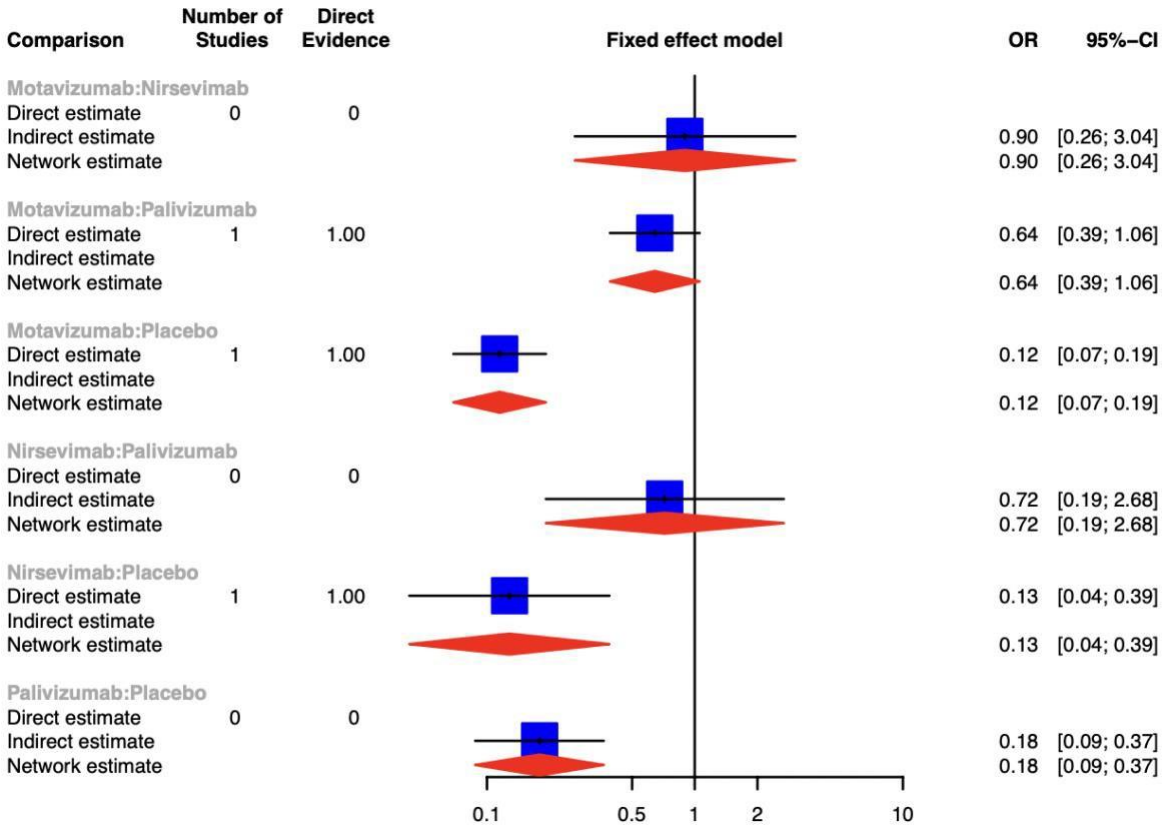
Appendix figure S53: node-split plot of rate of mechanical ventilation use in random effects model



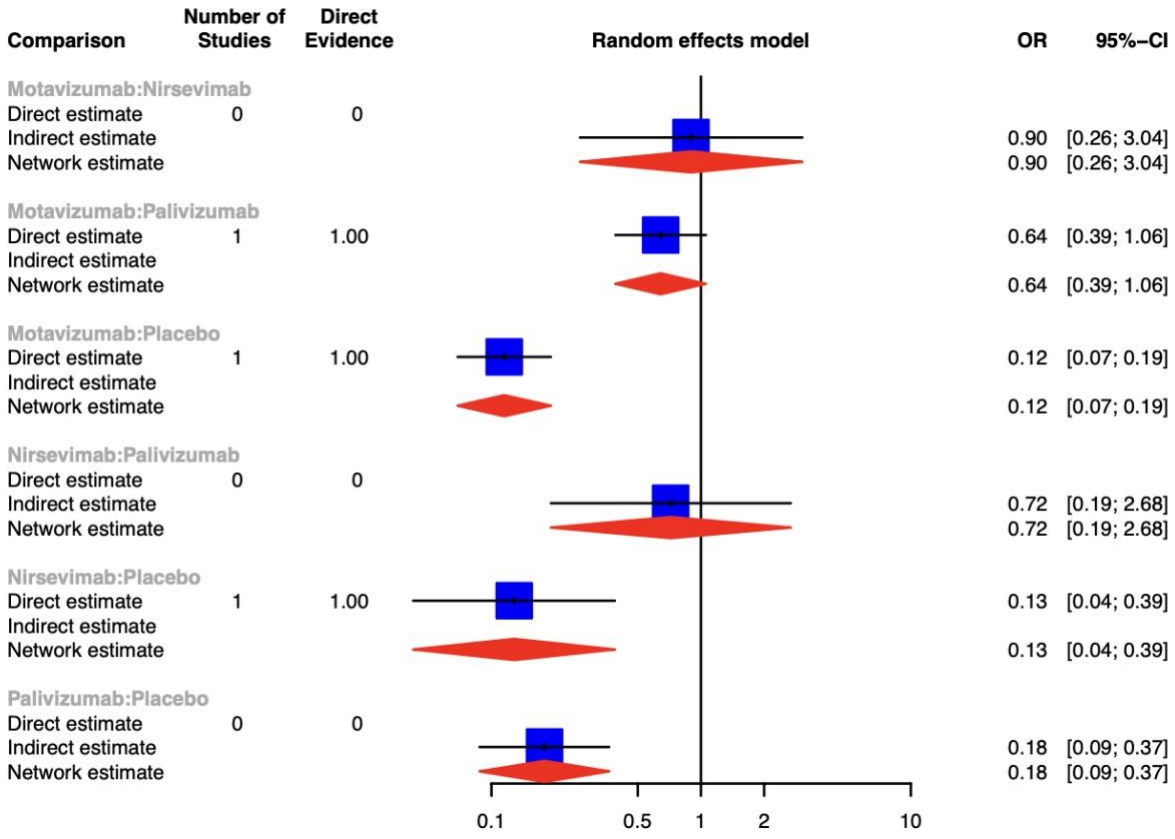
Appendix figure S54: node-split plot of rate of RSV infection in fixed effects model



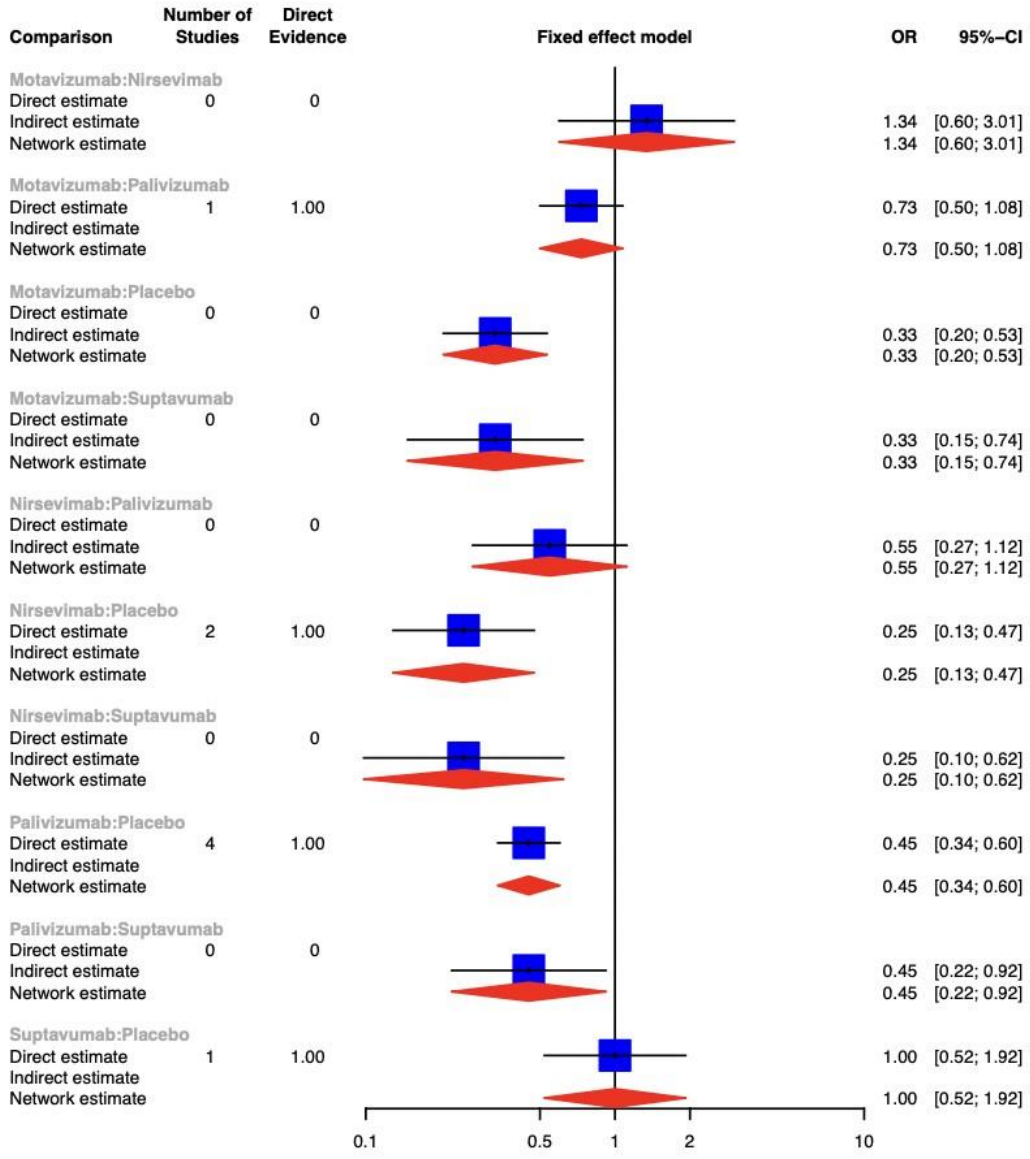
Appendix figure S55: node-split plot of rate of RSV infection in random effects model



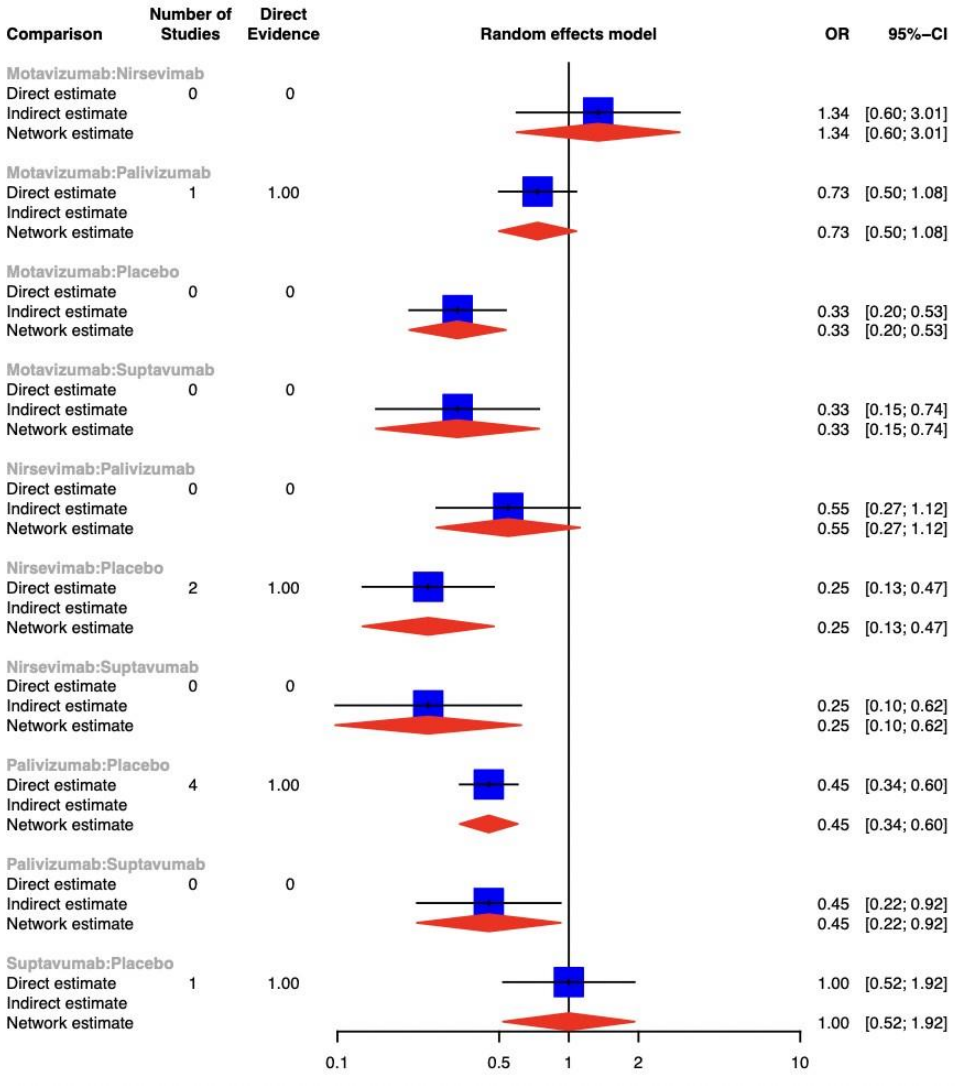
Appendix figure S56: node-split plot of rate of supplemental oxygen use in fixed effects model



Appendix figure S57: node-split plot of rate of supplemental oxygen use in random effects model



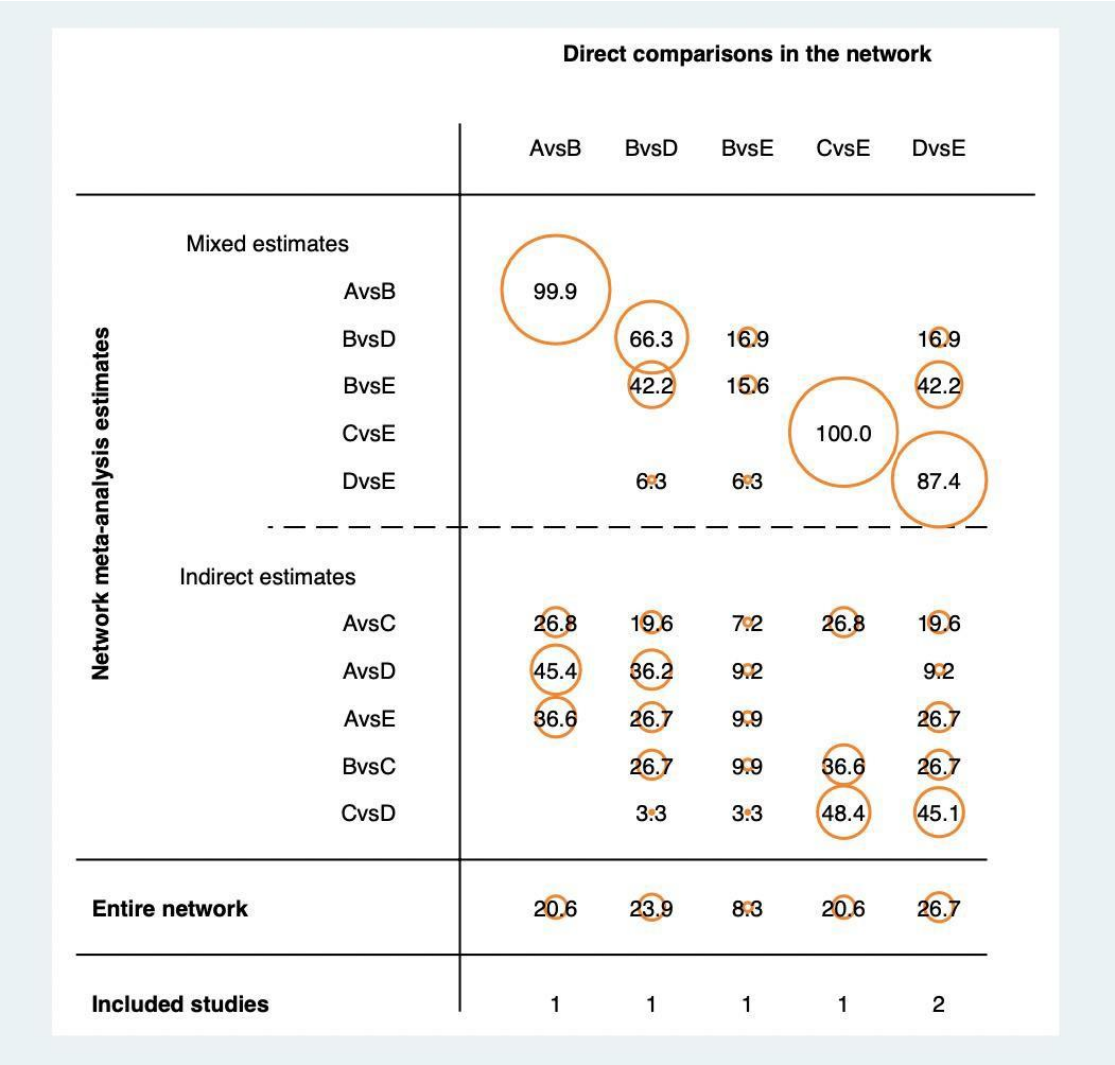
Appendix figure S58: node-split plot of RSV-related hospitalization in fixed effects model



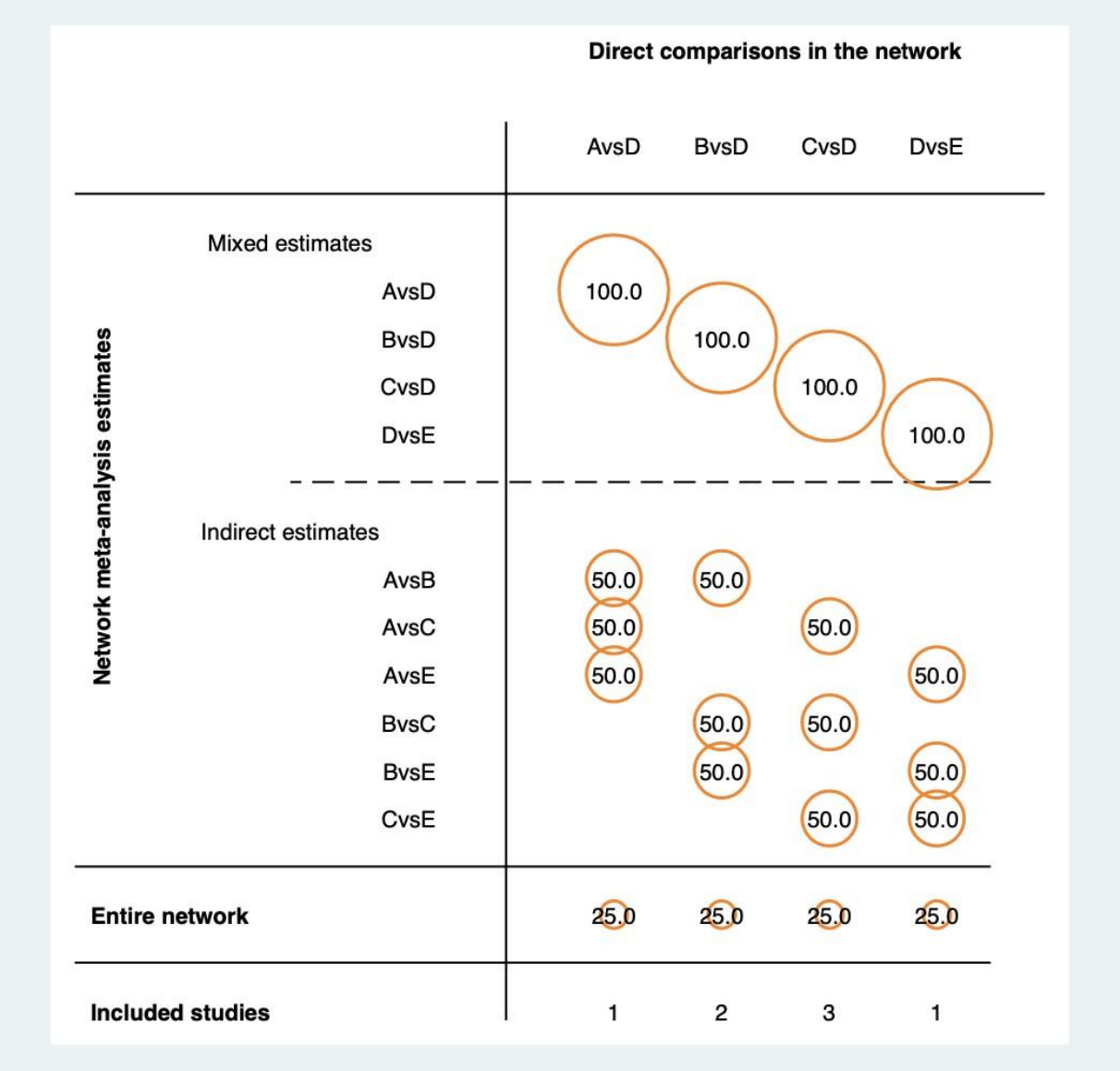
Appendix figure S59: node-split plot of RSV-related hospitalization in random effects model

Appendix figure S60-S66: contribute plots

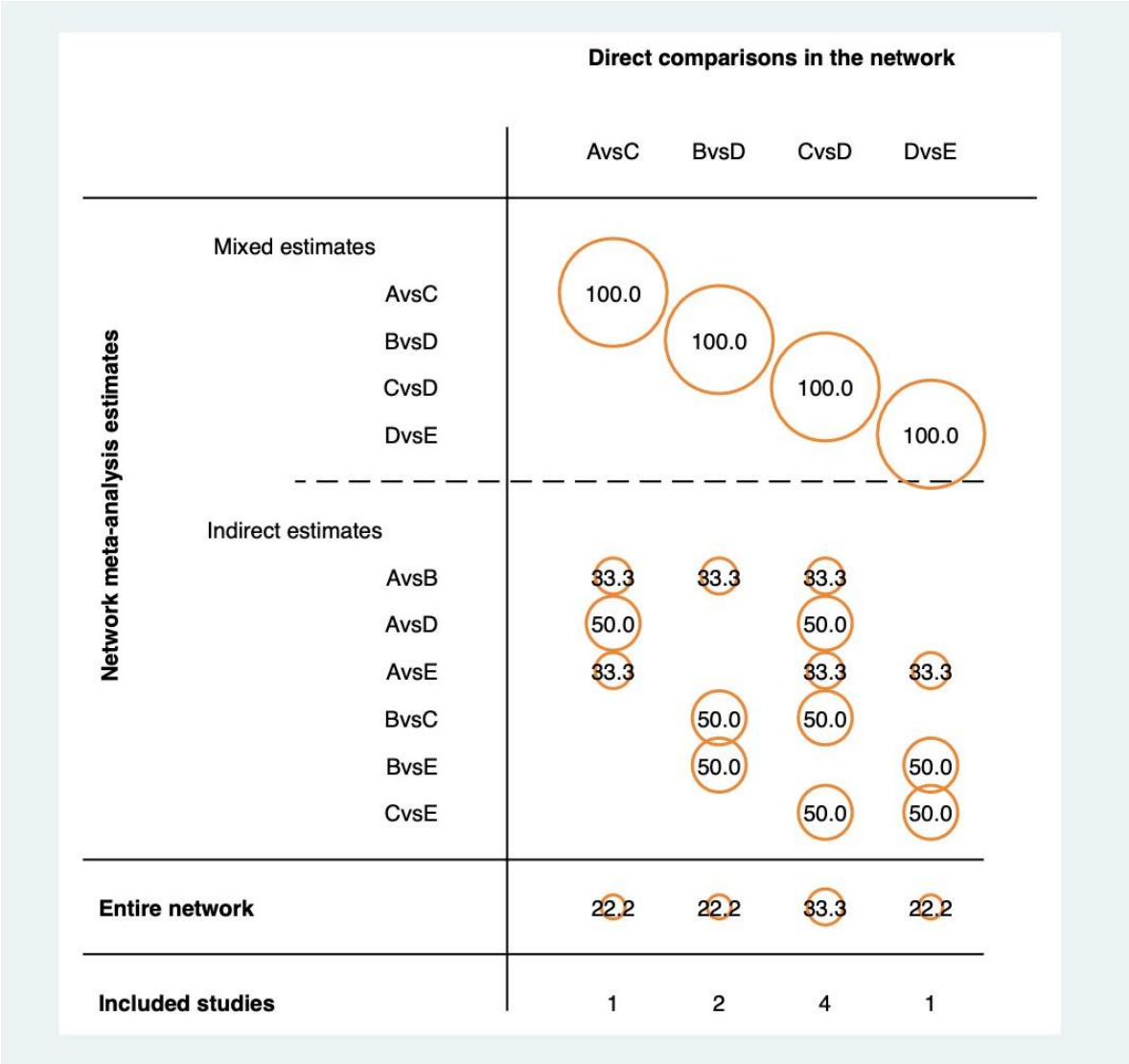
The contribution matrix shows how much each direct treatment effect contributes to each treatment effect estimate from network meta-analysis. The rows represent network treatment effects and columns represent the contribution of direct treatment effects.



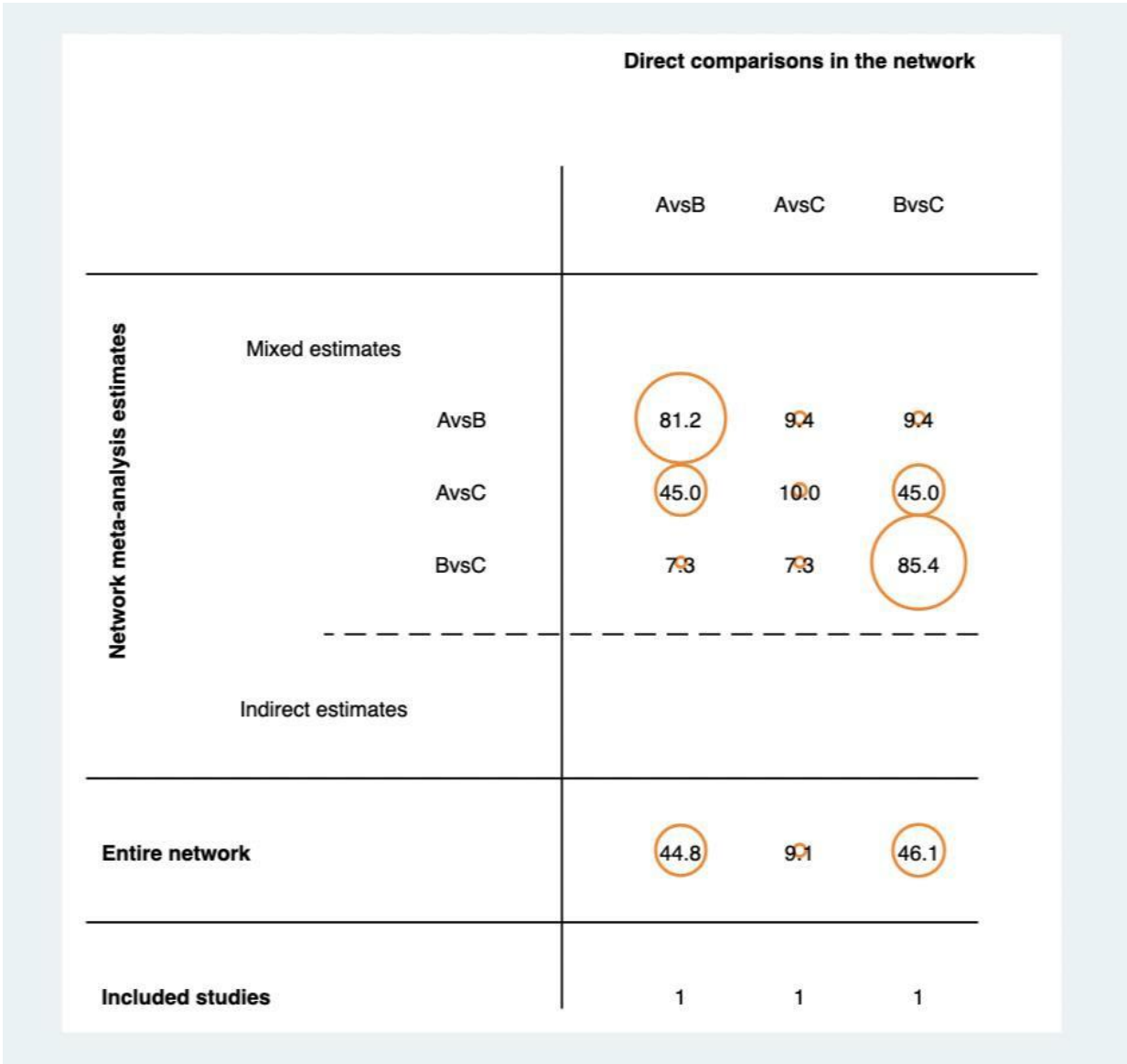
Appendix figure S60: contribute plot of all-cause mortality A: M+P; B: Motavizumab; C: Nirsevimab; D: Palivizumab; E: Placebo



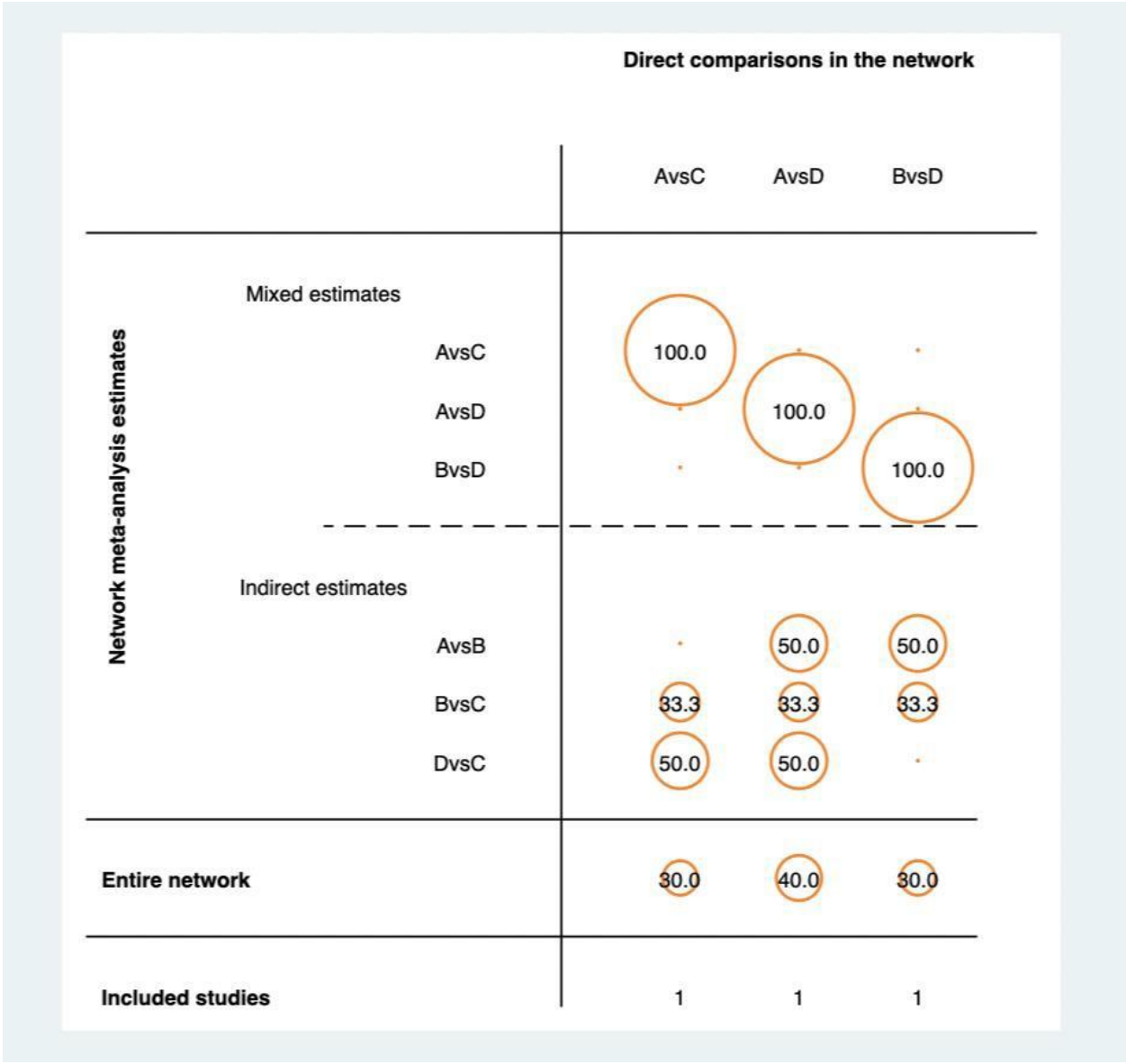
Appendix figure S61: contribute plot of rate of RSV infection A: Motavizumab; B: Nirsevimab; C: Palivizumab; D: Placebo; E: Suptavumab



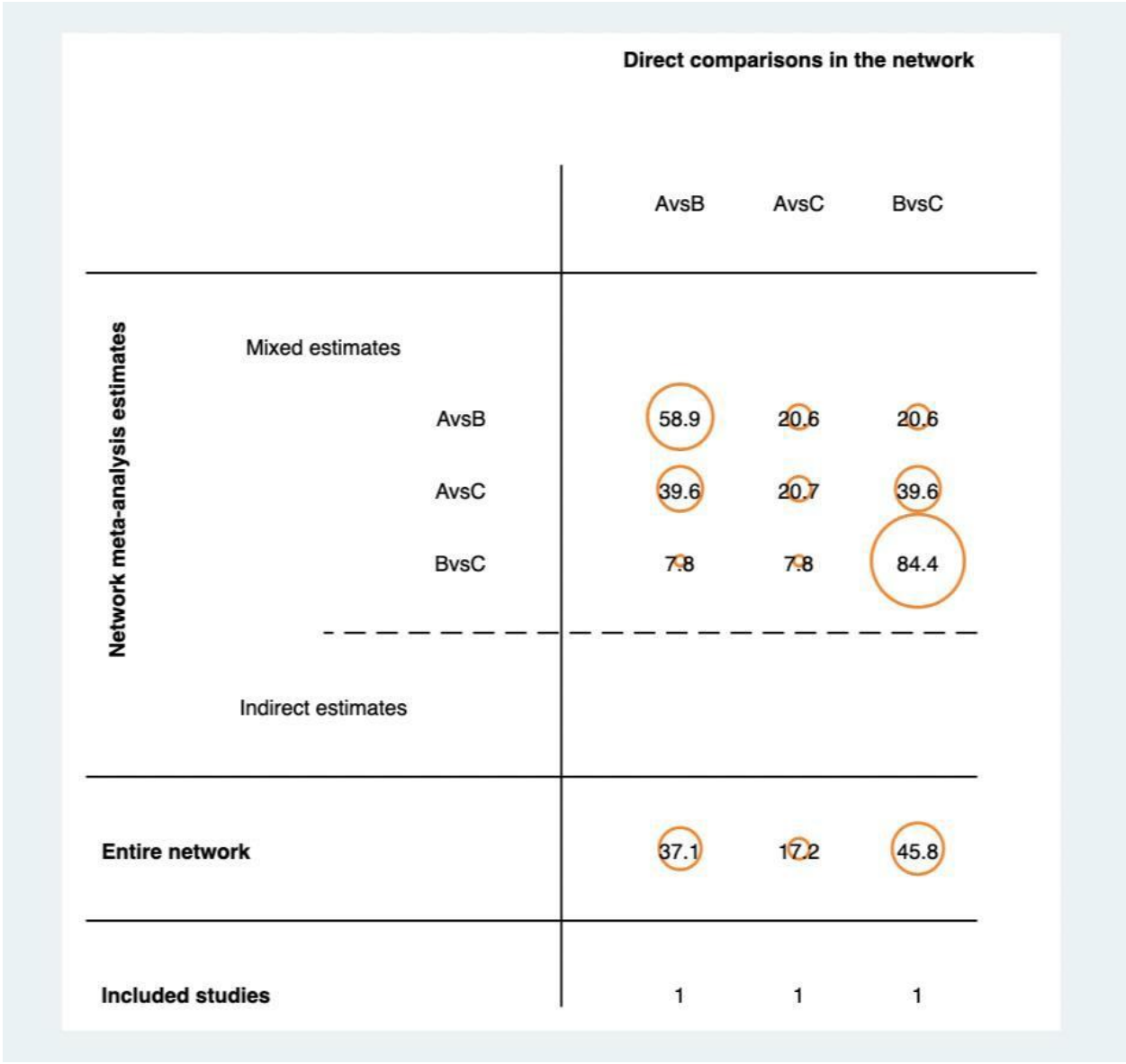
Appendix figure S62: contribute plot of RSV-related hospitalization A: Motavizumab; B: Nirsevimab; C: Palivizumab; D: Placebo; E: Suptavumab



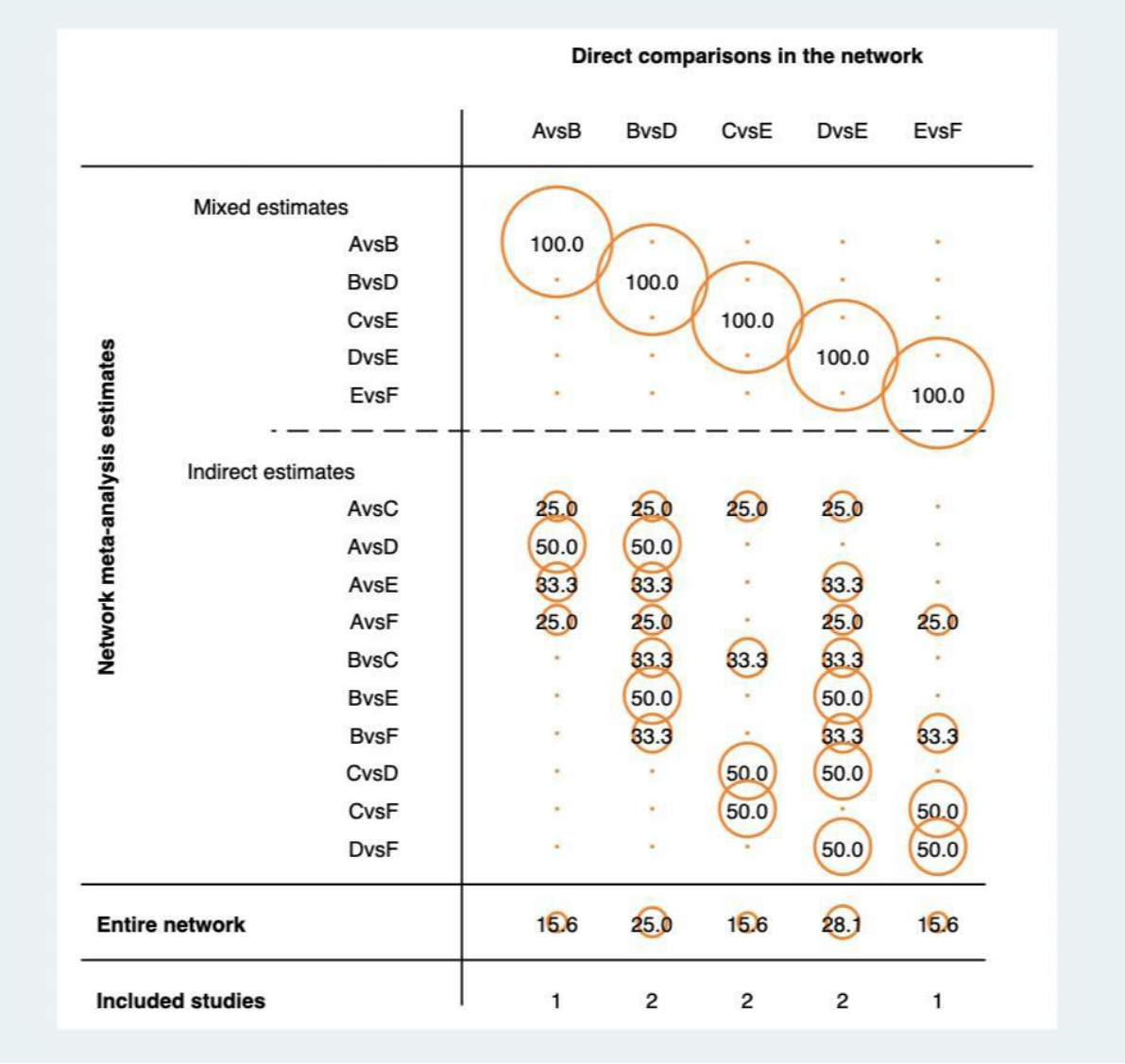
Appendix figure S63: contribute plot of rate of ICU admission A: Motavizumab; B: Palivizumab; C: Placebo



Appendix figure S64: contribute plot of rate of supplemental oxygen use A: Motavizumab; B: Nirsevimab; C: Palivizumab; D: Placebo

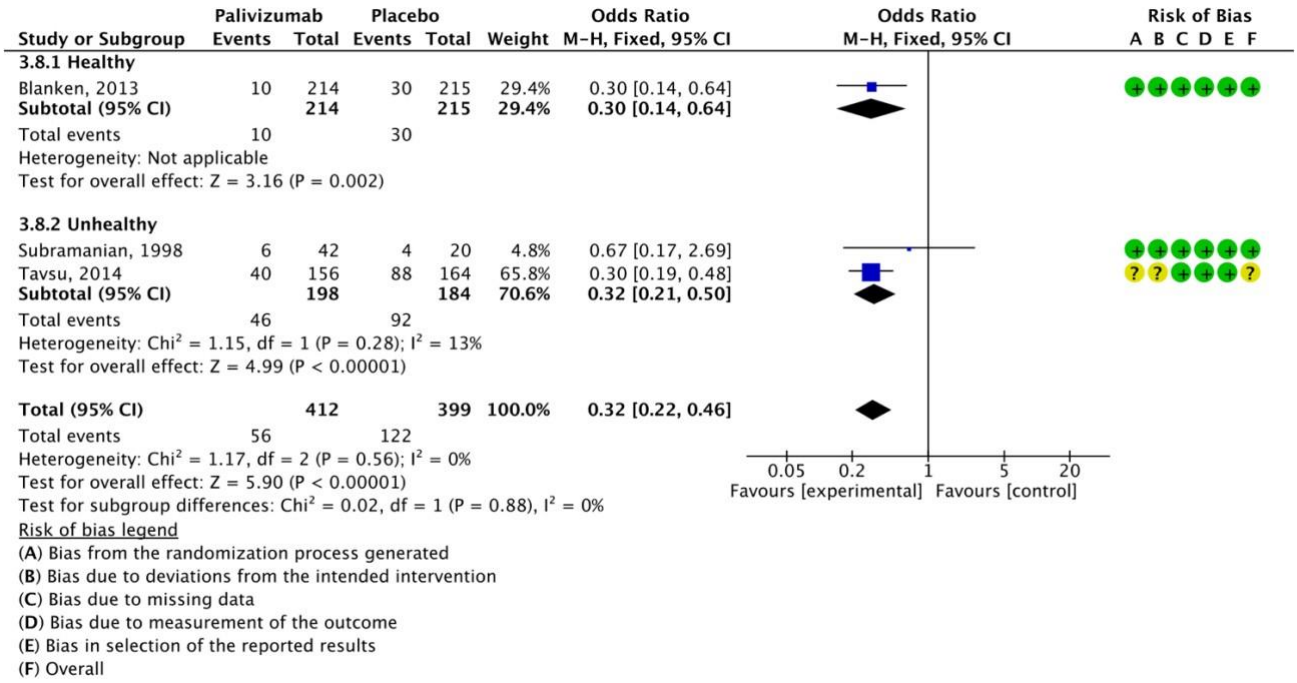


Appendix figure S65: contribute plot of rate of mechanical ventilation use A: Motavizumab; B: Palivizumab; C: Placebo

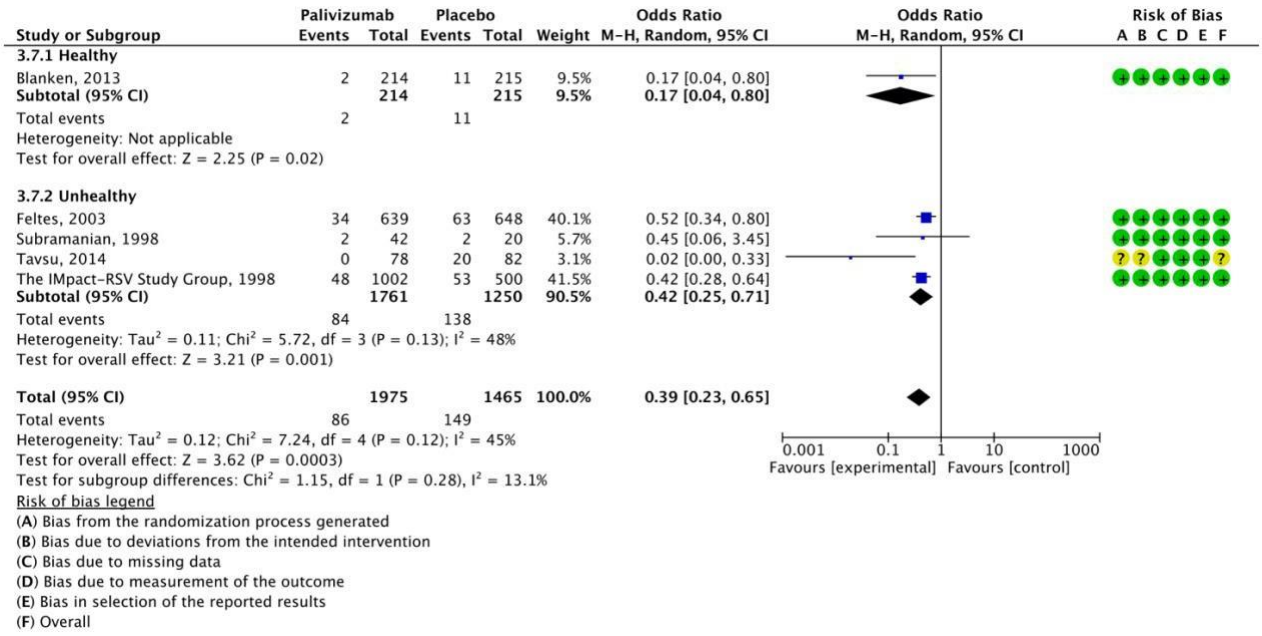


Appendix figure S66: contribute plot of drug-related adverse events A: M+P; B: Motavizumab; C: Nirsevimab; D: Palivizumab; E: Placebo; F: Suptavumab

Appendix figure S67-S68: subgroup analysis

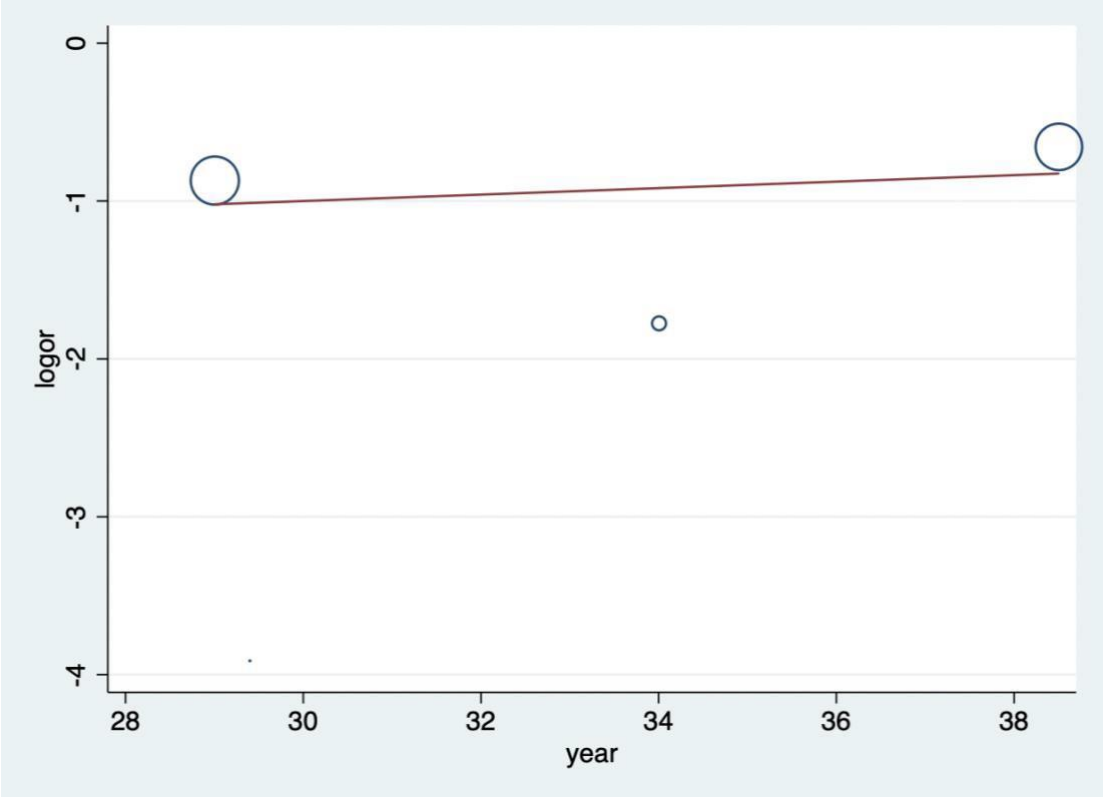


Appendix figure S67: subgroup analysis of rate of RSV infection

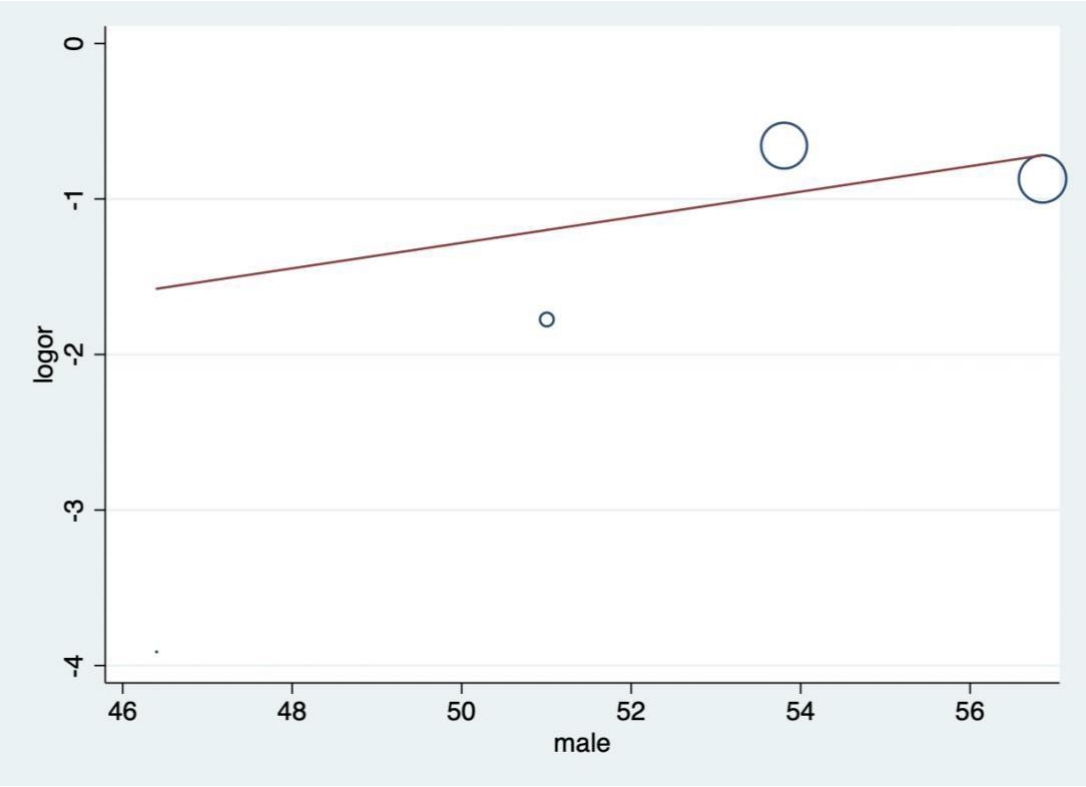


Appendix figure S68: subgroup analysis of RSV-related hospitalization

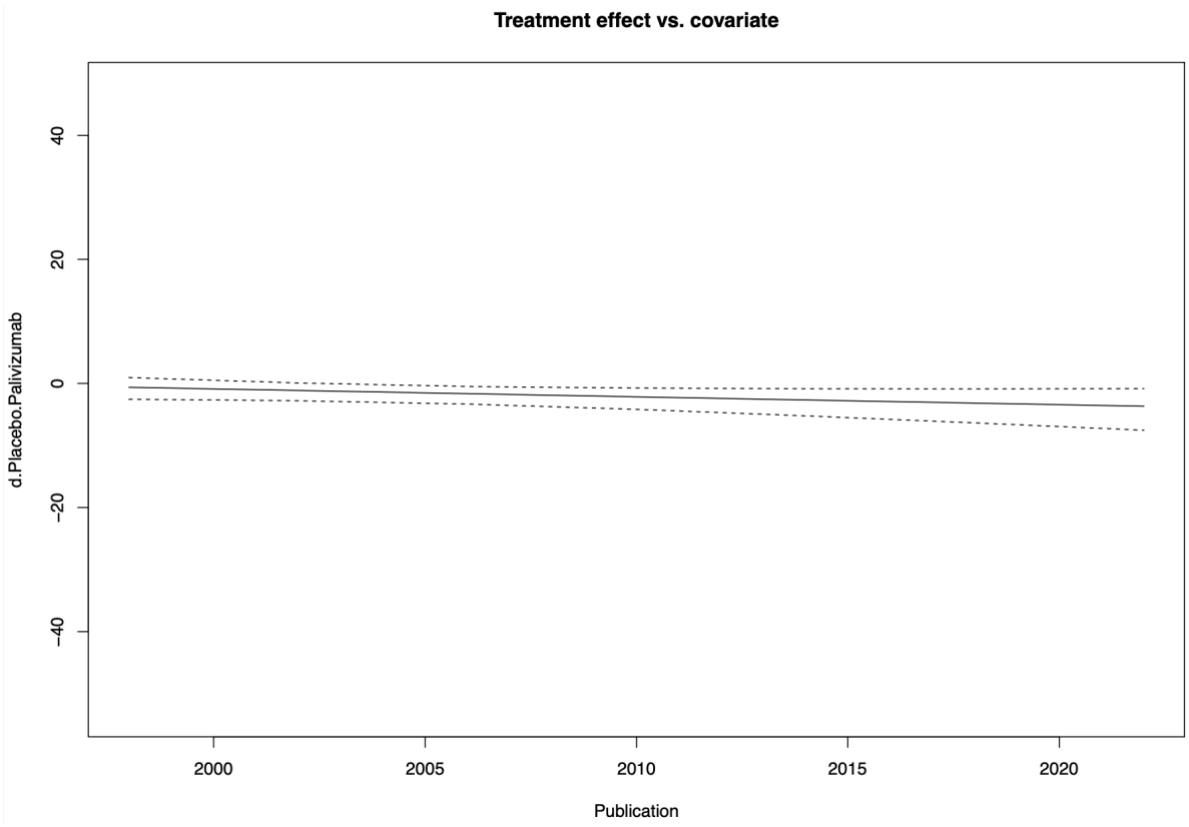
Appendix figure S69-S71: plots of meta-regression



Appendix figure S69: meta-regression of age in RSV-related hospitalization



Appendix figure S70: meta-regression of gender in RSV-related hospitalization



Appendix figure S71: meta-regression of publication year in RSV-related hospitalization

Appendix figure S72: Comparison of different monoclonal antibodies on efficacy and safety outcomes

*The numbers in the circles (light gray) represent the baseline risk, the numbers in the boxes represent the absolute risk of the outcome after using the intervention. For example, the baseline risk of RSV infection was 170 per 1000 participants (light gray), after using nirsevimab, the absolute risk was reduced to 47 per 1000 participants (dark green), which indicates that nirsevimab was the best of the four drugs.

*AE: adverse events.