

Supplementary materials

Table S1. GRADE of each comparison

Table S2. Search strategy

Table S3. Glucocorticoid equivalents

Figure S1. Risk of bias of included studies

Figure S2. Network map

Figure S3. Forest plot of each comparison

Figure S4. The inconsistency test at the global and local levels.

Figure S5. Funnel plot of included studies

Table S1. GRADE of each comparison

Multiple doses compared to Placebo for Reintubation

Bibliography:

Certainty assessment							Summary of findings				
Participa nts (studies) Follow up	Risk of bias	Inconsiste ncy	Indirectn ess	Imprecis ion	Publicati on bias	Overall certainty of evidence	Study event rates (%)		Relati ve effect (95% CI)	Anticipated absolute effects	
							With Place bo	With Multi ple doses		Risk with Place bo	Risk differen ce with Multipl e doses

Reintubation_ Multiple doses vs Placebo

1191 (6 RCTs)	not serio us	not serious	not serious	not serious	none	⊕⊕⊕ ⊕ HIGH	49/56 8 (8.6%)	23/62 3 (3.7%)	OR 0.43 (0.25 to 0.72)	86 per 1,000	47 fewer per 1,000 (from 63 fewer to 23 fewer)
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Reintubation_ Single dose vs Placebo

1003 (5 RCTs)	not serio us	not serious	not serious	not serious	none	⊕⊕⊕ ⊕ HIGH	26/50 4 (5.2%)	9/499 (1.8%)	OR 0.31 (0.14 to 0.69)	52 per 1,000	35 fewer per 1,000 (from 44 fewer to 15 fewer)
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Reintubation_ Multiple doses vs Single dose

194 (2 RCTs)	not serio us	not serious	not serious	serious	none	⊕⊕⊕○ MODER ATE	4/95 (4.2%)	5/99 (5.1%)	OR 1.22 (0.32 to 4.74)	42 per 1,000	9 more per 1,000 (from 28 fewer to 130 more)
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Table S2. Search strategy

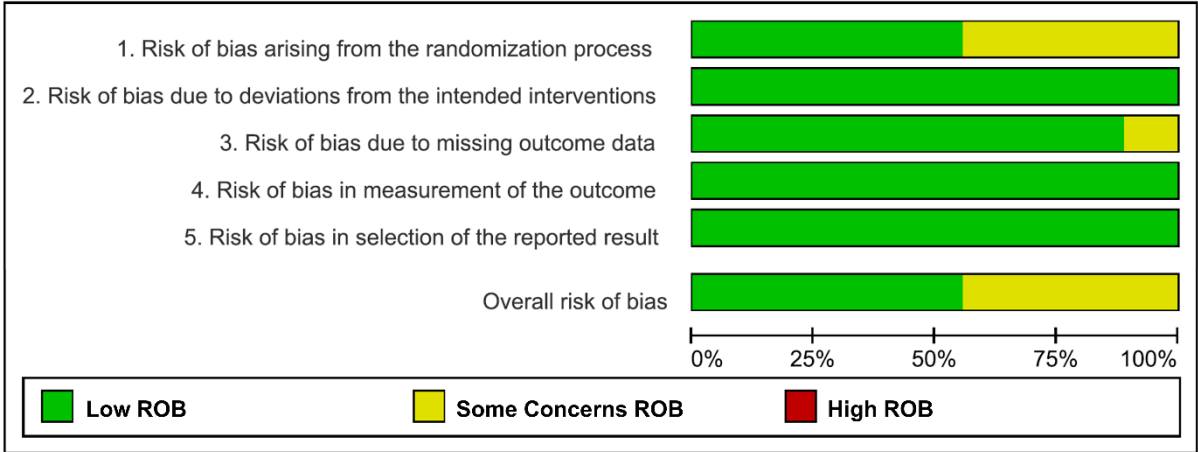
Database	Search	Studies
Medline	<p>#1. Intubation [MeSH Terms] OR Intubation, Intratracheal [MeSH Terms] OR intubation.ti,ab,kw (74,313)</p> <p>#2. Airway Extubation [MeSH Terms] OR extubation.ti,ab,kw (9,774)</p> <p>#3. Airway Obstruction [MeSH Terms] OR airway obstruction (32,349)</p> <p>#4. stridor*.ti,ab,kw (3,778)</p> <p>#5. (larynx*.ti,ab,kw AND edema*.ti,ab,kw) OR laryngeal edema.ti,ab,kw (1,777)</p> <p>#6. or/1-5 (112,118)</p> <p>#7. Adrenal Cortex Hormones [MeSH Terms] OR Steroids [MeSH Terms] Glucocorticoids [MeSH Terms] OR steroid*.ti,ab,kw OR corticosteroid*.ti,ab,kw OR glucocorticoid*.ti,ab,kw (1,060,038)</p> <p>#8. Prednisone [MeSH Terms] OR prednisone*.ti,ab,kw (51,185)</p> <p>#9. Prednisolone [MeSH Terms] OR prednisolone*.ti,ab,kw (60,562)</p> <p>#10. Methylprednisolone [MeSH Terms] OR methylprednisolone*.ti,ab,kw (25,032)</p> <p>#11. Dexamethasone [MeSH Terms] OR dexamethasone*.ti,ab,kw (68,065)</p> <p>#12. Cortisone [MeSH Terms] OR cortisone*.ti,ab,kw (23,124)</p> <p>#13. Hydrocortisone [MeSH Terms] OR hydrocortisone*.ti,ab,kw (75,757)</p> <p>#14. Budesonide [MeSH Terms] OR budesonide*.ti,ab,kw (5,839)</p> <p>#15. Fluticasone [MeSH Terms] OR fluticasone*.ti,ab,kw (4,299)</p> <p>#16. ciclesonide*.ti,ab,kw (336)</p> <p>#17. Triamcinolone [MeSH Terms] OR triamcinolone*.ti,ab,kw (11,165)</p> <p>#18. Beclomethasone [MeSH Terms] OR beclomethasone*.ti,ab,kw (3,743)</p> <p>#19. flunisolide*.ti,ab,kw (309)</p> <p>#20. mometasone*.ti,ab,kw (10)</p> <p>#21. or/7-20 (1,095,201)</p> <p>#22. Randomized controlled trial.pt OR controlled clinical trial.pt OR randomized.ti,ab OR placebo.ti,ab OR drug therapy.sh OR randomly.ti,ab OR trial.ti,ab OR groups.ti,ab (2,797,200)</p> <p>#23. 6 AND 21 AND 22 (1,914)</p>	1,914
Embase	<p>#1. Endotracheal Intubation [E] OR Intubation [E] OR intubation.ti,ab,kw (100,387)</p> <p>#2. Extubation [E] OR extubation.ti,ab,kw (21,364)</p> <p>#3. Airway Obstruction [E] OR airway obstruction (42,647)</p> <p>#4. Stridor [E] OR stridor.ti,ab,kw (8,768)</p> <p>#5. (larynx*.ti,ab,kw AND edema*.ti,ab,kw) OR laryngeal edema.ti,ab,kw (2,750)</p> <p>#6. or/1-5 (158,209)</p> <p>#7. Corticosteroid [E] OR Steroid [E] OR Glucocorticoid [E] OR steroid*.ti,ab,kw OR corticosteroid*.ti,ab,kw OR glucocorticoid*.ti,ab,kw (1,485,027)</p> <p>#8. Prednisone [E] OR prednisone*.ti,ab,kw (164,062)</p> <p>#9. Prednisolone [E] OR prednisolone*.ti,ab,kw (122,080)</p> <p>#10. Methylprednisolone [E] OR methylprednisolone*.ti,ab,kw (90,720)</p> <p>#11. Dexamethasone [E] OR dexamethasone*.ti,ab,kw (148,354)</p> <p>#12. Cortisone [E] OR cortisone*.ti,ab,kw (15,302)</p> <p>#13. Hydrocortisone [E] OR hydrocortisone*.ti,ab,kw (119,640)</p> <p>#14. Budesonide [E] OR budesonide*.ti,ab,kw (20,529)</p> <p>#15. Fluticasone [E] OR fluticasone*.ti,ab,kw (11,754)</p> <p>#16. Ciclesonide [E] OR ciclesonide*.ti,ab,kw (1,484)</p> <p>#17. Triamcinolone [E] OR triamcinolone*.ti,ab,kw (18,778)</p> <p>#18. Beclomethasone [E] OR beclomethasone*.ti,ab,kw (9,534)</p> <p>#19. Flunisolide [E] OR flunisolide*.ti,ab,kw (2,411)</p> <p>#20. Mometasone Furoate [E] OR mometasone*.ti,ab,kw (4,552)</p> <p>#21. or/7-20 (589,724)</p> <p>#22. randomized.ti,ab OR placebo.ti,ab OR drug therapy.sh OR</p>	1,844

	randomly.ti,ab OR trial.ti,ab OR groups.ti,ab (4,051,545) #23. 6 AND 21 AND 22 (1,844)	
Cochrane library	#1. Intubation [MeSH] OR Intubation,Intratracheal [MeSH] OR intubation OR Airway Extubation [MeSH] OR extubation OR Airway Obstruction [MeSH] OR airway obastruction OR stridor OR laryngeal edema (18,732) #2. Adrenal Cortex Hormones [MeSH] OR Steroids [MeSH] OR Glucocorticoids [MeSH] OR steroid OR corticosteroid OR glucocorticoid OR prednisone OR prednisolone OR methylprednisolone OR dexamethasone OR cortisone OR hydrocortisone OR budesonide OR fluticasone OR ciclesonide OR triamcinolone OR beclomethasone OR flunisolide OR mometasone (88,274) #3. 1 AND 2 (1,871)	1,871
Total		5,629

Table S3. Glucocorticoid equivalents

Glucocorticoid	Dose equivalent
Hydrocortisone	100 mg
Prednisone	25 mg
Prednisolone	25 mg
Triamcinolone	20 mg
Methylprednisolone	20 mg
Betamethasone	4 mg
Dexamethasone	4 mg

Figure S1. Risk of bias of included studies



	1. Risk of bias arising from the randomization process	2. Risk of bias due to deviations from the intended interventions	3. Risk of bias due to missing outcome data	4. Risk of bias in measurement of the outcome	5. Risk of bias in selection of the reported result	Overall risk of bias
Baloch 2010	?	+	?	+	+	?
Cheng 2006	+	+	+	+	+	+
Cheng 2011	+	+	+	+	+	+
Darmon 1992	+	+	+	+	+	+
Francois 2007	+	+	+	+	+	+
Ho 1996	?	+	+	+	+	?
Lee 2007	+	+	+	+	+	+
Lin 2016	?	+	+	+	+	?
Yu 2014	?	+	+	+	+	?

Low ROB
Some Concerns ROB
High ROB

Figure S2. Network map

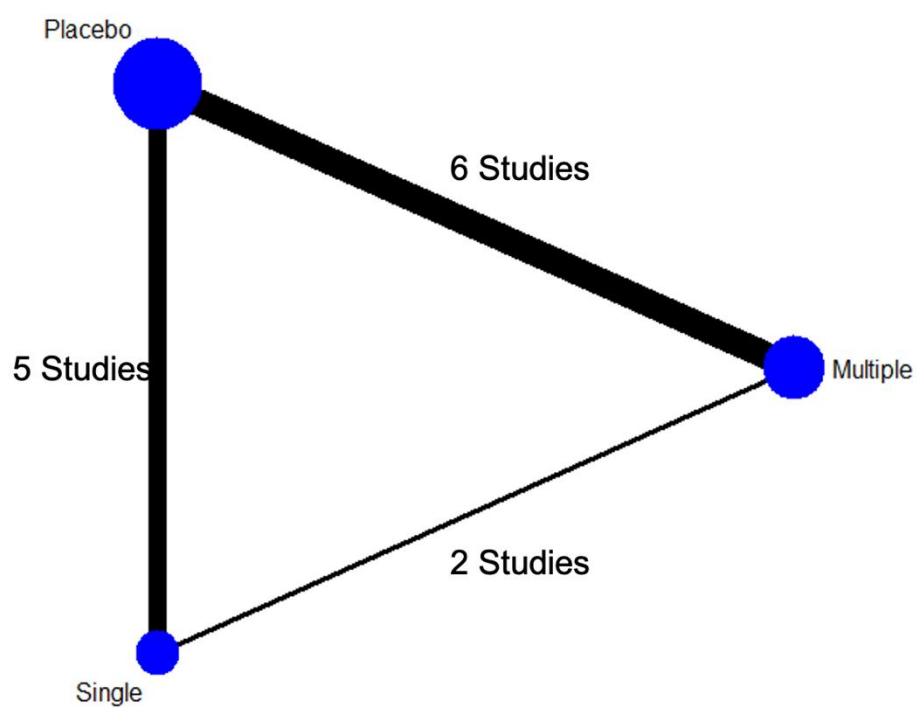
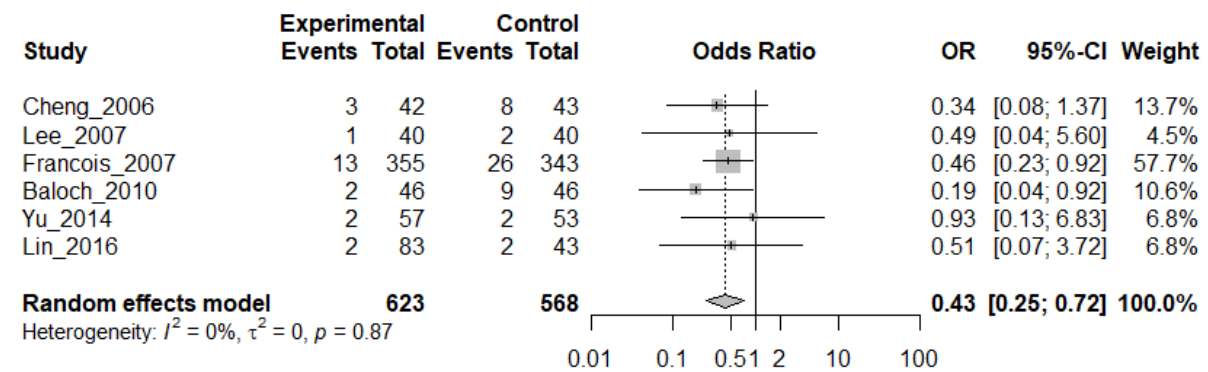
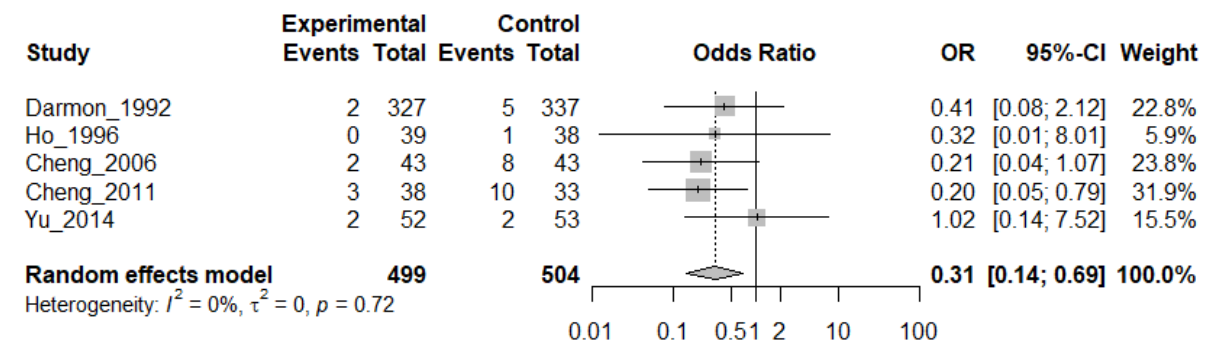


Figure S3. Forest plot of each comparison

1. Multiple doses vs Placebo



2. Single dose vs Placebo



3. Multiple doses vs Single dose

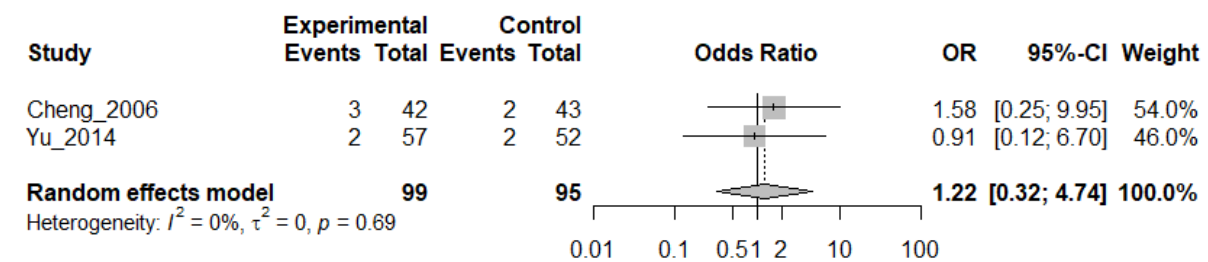


Figure S4. The inconsistency test at the global and local levels.

1. Global approach

```

3 . network meta i, eform
   Command is: mvmeta _y _S , eform bscovariance(exch 0.5) longparm suppress(uv mm
> ) eq(_y_A: des_ABC, _y_C: des_BC) vars(_y_A _y_C)
Note: using method reml
Note: regressing _y_A on des_ABC
Note: regressing _y_C on des_BC
Note: 9 observations on 2 variables
Note: variance-covariance matrix is proportional to .5*I(2)+.5*J(2,2,1)

initial:      log likelihood = -11.141144
rescale:      log likelihood = -11.141144
rescale eq:   log likelihood = -9.3084664
Iteration 0:   log likelihood = -9.3084664
Iteration 1:   log likelihood = -9.2256785
Iteration 2:   log likelihood = -9.2256784

Multivariate meta-analysis
Variance-covariance matrix = proportional .5*I(2)+.5*J(2,2,1)
Method = reml                               Number of dimensions = 2
Restricted log likelihood = -9.2256784          Number of observations = 9

```

	exp(Coef)	Std. Err.	z	P> z	[95% Conf. Interval]	
_y_A						
des_ABC	1.074003	.7024869	0.11	0.913	.2980225	3.870453
_cons	.4148779	.1231193	-2.96	0.003	.2319089	.7422038
_y_C						
des_BC	.7108566	.58027	-0.42	0.676	.143532	3.520587
_cons	.3821459	.2418653	-1.52	0.129	.1105331	1.321193

```

Estimated between-studies SDs and correlation matrix:
      SD      _y_A      _y_C
_y_A 7.964e-12      1      .
_y_C 7.964e-12      .5      1

Testing for inconsistency:
( 1) [_y_A]des_ABC = 0
( 2) [_y_C]des_BC = 0

      chi2( 2) = 0.17
      Prob > chi2 = 0.9163
mvmeta command stored as F9; test command stored as F8

```

2. Local approach

```

7 . network sidesplit all

```

Side	Direct		Indirect		Difference			
	Coef.	Std. Err.	Coef.	Std. Err.	Coef.	Std. Err.	P> z	
B C *	-1.167121	.3997071	-1.174295	1.246857	.0071746	1.267316	0.995	
A B *	.865075	.2644586	1.50346	1.569214	-.6383855	1.581613	0.686	
A C	-.1720447	.687635	-.3695049	.5749717	.1974602	.8874279	0.824	

```

* Warning: all the evidence about these contrasts comes from the trials which dir
> ectly compare them.
See help file for more information.

```

Figure S5. Funnel plot of included studies. A, placebo; B, multiple doses; C, single dose.

