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Table S1 Search strategy

Search	Query	Items found
Recent q	ueries in EMBASE on Oct 7, 2020	
#1	'dexmedetomidine'/exp OR 'dexmedetomidine'	11,978
#2	dexmedetomidine:ti,ab	8,382
#3	precedex:ti,ab	65
#4	#1 OR #2 OR #3	11,978
#5	'child'/exp	2,918,758
#6	'infant'/exp	1,144,601
#7	child*:ti,ab	1,842,172
#8	infant*:ti,ab	501,205
#9	pediatric*:ti,ab	456,042
#10	#5 OR #6 OR #7 OR #8 OR #9	3,626,221
#11	'emergence agitation'/exp	452
#12	delirium:ti,ab	23,997
#13	excitement:ti,ab	6,193
#14	agitation*:ti,ab	25,821
#15	agitated:ti,ab	7,212
#16	#11 OR #12 OR #13 OR #14 OR #15	58,327
#17	'randomized controlled trial'/exp OR 'controlled clinical trial'/exp OR randomized:ti,ab OR placebo:ti,ab OR 'drug therapy':lnk OR randomly:ti,ab OR trial:ti,ab OR groups:ti,ab	7,543,580
#18	#4 AND #10 AND #16 AND #17	283
Recent q	ueries in Cochrane database on Oct 7, 2020	
#1	MeSH descriptor: [Dexmedetomidine] explode all trees	1709
#2	(Precedex):ti,ab,kw (Word variations have been searched)	64
#3	(dexmedetomidine):ti,ab,kw (Word variations have been searched)	4845
#4	#1 or #2 or #3	4850
#5	MeSH descriptor: [Child] explode all trees	55465
#6	MeSH descriptor: [Infant] explode all trees	31836
#7	(child* or infant* or pediatric*):ti,ab,kw (Word variations have been searched)	188511
#8	#5 or #6 or #7	188511
#9	MeSH descriptor: [Emergence Delirium] explode all trees	93
#10	(delirium or excitement or agitation* or agitated):ti,ab,kw (Word variations have been searched)	7998
#11	#9 or #10	7998
#12	#4 and #8 and #11	252

Table S1 (continued)

Table S1 (continued)

Search	Query	Items found
Recent qu	eries in PubMed on Oct 7, 2020	
#1	Search: (("Dexmedetomidine"[Mesh]) OR (dexmedetomidine[Title/Abstract]))) OR (precedex[Title/Abstract])	6,373
#2	Search: ((((("Emergence Delirium"[Mesh]) OR (emergence agitation[Title/Abstract])) OR (delirium[Title/Abstract])) OR (excitement[Title/Abstract])) OR (agitation*[Title/Abstract])) OR (agitated[Title/Abstract])	39,455
#3	Search: (((("Child"[Mesh]) OR ("Infant"[Mesh])) OR (child*[Title/Abstract])) OR (infant*[Title/Abstract])) OR (pediatric*[Title/Abstract])	3,073,267
#4	Search: "randomized controlled trial"[pt] OR "controlled clinical trial"[pt] OR randomized[tiab] OR placebo[tiab] OR "drug therapy"[sh] OR randomly[tiab] OR trial[tiab] OR groups[tiab]	5,001,523
#5	Search: (((((("Child"[Mesh]) OR ("Infant"[Mesh])) OR (child*[Title/Abstract])) OR (infant*[Title/Abstract])) OR (pediatric*[Title/Abstract])) AND ((("Dexmedetomidine"[Mesh]) OR (dexmedetomidine[Title/Abstract]))) OR (precedex[Title/Abstract]))) AND ((((("Emergence Delirium"[Mesh]) OR (emergence agitation[Title/Abstract]))) OR (delirium[Title/Abstract])) OR (delirium[Title/Abstract])) OR (cagitated[Title/Abstract])) OR (excitement[Title/Abstract])) OR (agitation*[Title/Abstract])) OR (agitated[Title/Abstract])) AND ("randomized controlled trial"[pt] OR "controlled clinical trial"[pt] OR randomized[tiab] OR placebo[tiab] OR "drug therapy"[sh] OR randomly[tiab] OR trial[tiab] OR groups[tiab])	158
Recent qu	eries in Web of Sciences on Oct 7, 2020	
#1	TS=(dexmedetomidine) OR (precedex)	7,815
#2	TS= (child) OR (infant) OR (child*) OR (infant*) OR (pediatric*)	2,115,883
#3	TS= (emergence agitation) OR (delirium) OR (excitement) OR (agitation*) OR (agitated)	60,181
#4	#1 AND #2 AND #3	339

Study or Subgroup	DEX Events		Placel Events		Weight	Risk Ratio M-H, Random, 95% C	Risk Ratio M-H. Random, 95% Cl
1.1.1 intravenous							
Abdel-Ma'boud 2014	3	20	12	20	1.5%	0.25 [0.08, 0.75]	
Abdel-Rahman 2018	5	60	10	30	1.7%	0.25 [0.09, 0.67]	
Ali 2013	5	40	22	40	2.0%	0.23 [0.10, 0.54]	<u> </u>
Ali 2016	5	30	27	30	2.2%	0.19 [0.08, 0.42]	
Al-Zaben 2016	2	25	8	25	1.0%	0.25 [0.06, 1.06]	
Asaad 2011	5	30	12	30	1.9%	0.42 [0.17, 1.04]	
Bhat 2018	6	60	13	30	2.0%	0.23 [0.10, 0.55]	
Chen 2013	3	27	10	24	1.4%	0.24 [0.08, 0.77]	
Chen 2018	2	80	6	20	0.9%	0.08 [0.02, 0.38]	
Di 2014	4	30	17	30	1.7%	0.24 [0.09, 0.62]	
Erdil 2009	5	30	14	30	1.9%	0.36 [0.15, 0.87]	
Govil 2009	1	30	14	30	0.6%	0.08 [0.01, 0.60]	
Guler 2005							
	5	30	17	30	2.0%	0.29 [0.12, 0.69]	•
Gupta 2013	0	18	4	18	0.3%	0.11 [0.01, 1.92]	· _
Hauber 2015	69	193	125	189	4.6%	0.54 [0.44, 0.67]	
He 2013	7	61	11	26	2.1%	0.27 [0.12, 0.62]	
bacache 2004	8	60	11	30	2.2%	0.36 [0.16, 0.81]	
sik 2006	1	21	10	21	0.6%	0.10 [0.01, 0.71]	
Kim, J. 2014	6	47	35	47	2.3%	0.17 [0.08, 0.37]	
Kim, N. Y.2014	1	20	11	20	0.6%	0.09 [0.01, 0.64]	
_i 2017	7	40	21	40	2.4%	0.33 [0.16, 0.69]	
_i 2018	6	40	33	40	2.4%	0.18 [0.09, 0.39]	
_ili 2012	3	30	13	30	1.4%	0.23 [0.07, 0.73]	
_in 2017	6	40	17	40	2.1%	0.35 [0.16, 0.80]	———
_iu 2015	6	40	21	40	2.2%	0.29 [0.13, 0.63]	——
Makkar 2016	3	32	13	32	1.4%	0.23 [0.07, 0.73]	
Veng 2012	8	80	8	40	1.9%	0.50 [0.20, 1.23]	+
Peng 2015	3	20	18	20	1.6%	0.17 [0.06, 0.48]	———
Prasad 2017	2	25	17	25	1.1%	0.12 [0.03, 0.46]	— <u> </u>
Sato 2010	11	39	27	42	3.1%	0.44 [0.25, 0.76]	
Sharma 2019	2	30	30	30	1.3%	0.08 [0.02, 0.27]	
Shi 2019	14	45	24	45	3.3%	0.58 [0.35, 0.97]	
Shukry 2005	6	23	14	23	2.3%	0.43 [0.20, 0.92]	
Soliman 2015	6	75	29	75	2.1%	0.21 [0.09, 0.47]	
Song 2016	29	78	15	25	3.7%	0.62 [0.40, 0.95]	
Sun 2017	11	73	10	24	2.5%	0.33 [0.16, 0.66]	
Tsiotou 2018	6	31	12	29	2.1%	0.47 [0.20, 1.08]	
Kiao 2015	7	105	12	35	2.0%	0.19 [0.08, 0.45]	
		105	12	- 35	2.0 /0	0.19 [0.00, 0.43]	
	2	20	0	20	0.09/	0.25 [0.06 1.09]	
Yao 2018 Subtotal (95% CI) Fotal events Heterogeneity: Tau ² =				30 1385 (P = 0.	0.9% 73.2% 0008); l² =	0.25 [0.06, 1.08] 0.29 [0.24, 0.35] 47%	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal	281 0.13; Chi²	1788 = 71.44	731 I, df = 38	1385	73.2%	0.29 [0.24, 0.35]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect:	281 0.13; Chi²	1788 = 71.44	731 I, df = 38	1385	73.2%	0.29 [0.24, 0.35]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal	281 0.13; Chi² Z = 13.03	1788 = 71.44 (P < 0.0	731 I, df = 38 00001)	1385 (P = 0.	73.2% 0008); l² =	0.29 [0.24, 0.35] 47%	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016	281 0.13; Chi² Z = 13.03 4	1788 = 71.44 (P < 0.0 33	731 I, df = 38 00001) 15	1385 (P = 0. 32	73.2% 0008); I² = 1.7%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019	281 0.13; Chi² Z = 13.03 4 5	1788 = 71.44 (P < 0.0 33 20	731 I, df = 38 00001) 15 14	1385 (P = 0. 32 20	73.2% 0008); I² = 1.7% 2.2%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 EI-Hamid 2017	281 0.13; Chi² Z = 13.03 4 5 3	1788 = 71.44 (P < 0.0 33 20 43	731 I, df = 38 00001) 15 14 25	1385 (P = 0. 32 20 43	73.2% 0008); I ² = 1.7% 2.2% 1.4%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 El-Hamid 2017 Lin 2016	281 0.13; Chi² Z = 13.03 4 5 3 10	1788 = 71.44 (P < 0.0 33 20 43 60	731 I, df = 38 00001) 15 14 25 24	1385 (P = 0. 32 20 43 30	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 EI-Hamid 2017 _in 2016 Pestieau 2011	281 0.13; Chi ² Z = 13.03 4 5 3 10 14	1788 = 71.44 (P < 0.0 33 20 43 60 51	731 4, df = 38 00001) 15 14 25 24 11	1385 (P = 0. 32 20 43 30 27	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.8%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 E-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2015 Yao 2020	281 0.13; Chi ² Z = 13.03 4 5 3 10 14 6	1788 = 71.44 (P < 0.0 33 20 43 60 51 60	731 k, df = 38 00001) 15 14 25 24 11 14 25	1385 (P = 0. 32 20 43 30 27 29	73.2% 0008); I ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48]	
Yao 2018 Subtotal (95% CI) Fotal events Heterogeneity: Tau ² = Fest for overall effect: I.1.2 intranasal Abdelaziz 2016 Bi 2019 El-Hamid 2017 in 2016 Pestieau 2011 Yao 2020 Zhang 2020	281 0.13; Chi ² Z = 13.03 4 5 3 10 14 6 6	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52	731 I, df = 38 00001) 15 14 25 24 11 14	1385 (P = 0. 32 20 43 30 27 29 51	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1% 2.2%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 3i 2019 EI-Hamid 2017 in 2016 Pestieau 2011 Yao 2015 Yao 2020 Subtotal (95% CI)	281 0.13; Chi ² Z = 13.03 4 5 3 10 14 6 6	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67	731 k, df = 38 00001) 15 14 25 24 11 14 25	1385 (P = 0. 32 20 43 30 27 29 51 67	73.2% 0008); l² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1% 2.2% 1.9%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: I.1.2 intranasal Abdelaziz 2016 Bi 2019 E-Hamid 2017 Lin 2016 Pastieau 2011 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events	281 0.13; Chi ² Z = 13.03 4 5 3 100 14 6 6 6 54	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386	731 I, df = 38 00001) 15 14 25 24 11 14 25 13 13 141	1385 (P = 0. 20 43 30 27 29 51 67 299	73.2% 20008); l ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1% 2.2% 1.9% 17.1%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.9, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43]	•
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: 1.1.2 intranasal Abdelaziz 2016 3i 2019 El-Hamid 2017 in 2016 Pestieau 2011 Yao 2015 Yao 2015 Yao 2015 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² =	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 6 6 54 0.13; Chi ²	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386 = 12.65	731 I, df = 38 00001) 15 14 25 24 11 14 25 13 13 141 5, df = 7 (j	1385 (P = 0. 20 43 30 27 29 51 67 299	73.2% 20008); l ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1% 2.2% 1.9% 17.1%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.9, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: 1.1.2 intranasal Abdelaziz 2016 3i 2019 E-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2015 Yao 2015 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 6 6 54 0.13; Chi ² Z = 6.27 (F	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386 = 12.65 2 < 0.00	731 4, df = 38 50001) 15 14 25 13 141 14 25 13 141 5, df = 7 (0001)	1385 (P = 0. 20 43 30 27 29 51 67 299 P = 0.0	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.1% 2.2% 1.9% 17.1% 8); l ² = 45°	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: I.1.2 intranasal Abdelaziz 2016 3i 2019 EI-Hamid 2017 Jai 2016 Pestieau 2011 Yao 2015 Yao 2020 Zubtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: I.1.3 oral Abdel-Ghaffar 2019	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 6 6 54 0.13; Chi ²	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386 = 12.65 < 0.00	731 I, df = 38 00001) 15 14 25 24 11 14 25 13 13 141 5, df = 7 (j	1385 (P = 0. 20 43 30 27 29 51 67 299	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.1% 2.2% 1.9% 17.1% 8); l ² = 45°	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] %	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 E-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral Abdel-Ghaffar 2019 Dzcengiz 2011	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 6 6 54 0.13; Chi ² Z = 6.27 (F	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386 = 12.65 67 386 = 20.000 60 25	731 4, df = 38 50001) 15 14 25 13 141 14 25 13 141 5, df = 7 (0001)	1385 (P = 0. 32 20 43 30 27 29 51 67 299 P = 0.0 30 25	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.1% 2.2% 1.9% 17.1% B); l ² = 45° 2.0% 1.0%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.90, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] %	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 E-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral Abdel-Chaffar 2019 Zozengiz 2011 Subtotal (95% CI)	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 0.13; Chi ² Z = 6.27 (F 10 2	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 67 386 = 12.65 < 0.00	731 I, df = 38 10001) 15 14 25 24 11 14 25 13 141 5, df = 7 (0001) 7 8	1385 (P = 0. 20 43 30 27 29 51 67 299 P = 0.0	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.1% 2.2% 1.9% 17.1% 8); l ² = 45°	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] %	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 E-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2015 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral Abdel-Ghaffar 2019 Dzcengiz 2011 Subtotal (95% CI) Total events Heterogeneity: Tau ² =	281 0.13; Chi ² Z = 13.03 4 5 3 10 14 6 6 6 0.13; Chi ² Z = 6.27 (F 10 2 0.20; Chi ²	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 60 52 60 25 85 = 12.65 85 = 1.54,	731 I, df = 38 15 14 25 24 11 14 25 13 141 5, df = 7 (1001) 7 8 15 16 17 16 17 18 19 19 19 10 10 10 10 10 10 10 10 10 10	1385 (P = 0. 32 20 43 30 27 299 51 67 299 P = 0.0 30 25 55	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.1% 2.8% 2.1% 2.9% 1.9% 17.1% 8); l ² = 45° 2.0% 1.0% 3.0%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] % 0.71 [0.30, 1.69] 0.25 [0.06, 1.06] 0.50 [0.18, 1.34]	
Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 3i 2019 El-Hamid 2017 Jin 2016 Pestieau 2011 Yao 2015 Yao 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral Abdel-Ghaffar 2019 Jozcengiz 2011 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect:	281 0.13; Chi ² Z = 13.03 4 5 3 10 14 6 6 6 0.13; Chi ² Z = 6.27 (F 10 2 0.20; Chi ²	1788 = 71.44 (P < 0.0 33 20 43 60 51 60 52 60 52 60 25 85 = 12.65 85 = 1.54,	731 I, df = 38 15 14 25 24 11 14 25 13 141 5, df = 7 (1001) 7 8 15 16 17 16 17 18 19 19 19 10 10 10 10 10 10 10 10 10 10	1385 (P = 0. 32 20 43 30 27 299 51 67 299 P = 0.0 30 25 55	73.2% 0008); l ² = 1.7% 2.2% 1.4% 2.9% 2.1% 2.8% 2.1% 2.9% 1.9% 17.1% 8); l ² = 45° 2.0% 1.0% 3.0%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.09, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] % 0.71 [0.30, 1.69] 0.25 [0.06, 1.06] 0.50 [0.18, 1.34]	
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Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 3i 2019 El-Hamid 2017 Jin 2016 Pestieau 2011 Yao 2015 Yao 2020 Zhang 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Fest for overall effect: 1.1.3 oral Abdel-Ghaffar 2019 Jzcengiz 2011 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.4 perineural Al-Zaben 2016 Sharti 2015 Jundblad 2015 Mohamed 2015 Saadawy 2009 Yao 2018 (e 2019 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Total (95% CI) Total events Heterogeneity: Tau ² = Total (95% CI) Total (95% CI)	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 0.13; Chi ² Z = 6.27 (F 10 2 0.20; Chi ² Z = 1.38 (F 0 0 0 2 2 4 0.03 0 0 2 2 4 0.03 0 0 0 0 0 0 0 0 0 0 0 0 0	$\begin{array}{r} 1788\\ = 71.44\\ (P < 0.0\\ 333\\ 20\\ 0\\ 51\\ 60\\ 52\\ 67\\ 386\\ = 12.65\\ 67\\ 386\\ = 12.65\\ 85\\ = 1.54, \\ 0\\ 25\\ 58\\ 85\\ = 1.54, \\ 0\\ 0\\ 22\\ 24\\ 30\\ 0\\ 22\\ 24\\ = 5.96, \\ = 5.96, \end{array}$	7311 I, off = 388 (00001) 15 14 25 24 14 12 25 24 14 14 25 13 141 14 25 13 141 14 25 26 27 8 4 15 17 8 4 15 17 19 10 10 10 10 10 10 10 10 10 10 10 10 10	1385 (P = 0. 32 200 43 30 27 299 51 67 299 P = 0.0 30 25 55 = 0.21 25 200 40 21 24 30 20 210	73.2% 2008); ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.9% 2.2% 1.9% 17.1% B); ² = 45° 2.0% 1.0% 3.0%); ² = 35% 0.3% 0.3% 1.4% 0.3% 1.0% 0.3% 1.0% 0.9% 1.5% 6.7%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.10, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] % 0.71 [0.30, 1.69] 0.25 [0.06, 1.06] 0.50 [0.18, 1.34] 0.06 [0.00, 0.97] 0.04 [0.00, 0.70] 0.17 [0.05, 0.52] 0.14 [0.01, 2.50] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.57 [0.20, 1.65]	
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Yao 2018 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.2 intranasal Abdelaziz 2016 Bi 2019 EI-Hamid 2017 Lin 2016 Pestieau 2011 Yao 2015 Yao 2020 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.3 oral Abdel-Ghaffar 2019 Ozcengiz 2011 Subtotal (95% CI) Total events Heterogeneity: Tau ² = Test for overall effect: 1.1.4 perineural AH-Zaben 2016 Bharti 2014 Cho 2015 Lindblad 2015 Mohamed 2	281 0.13; Chi ² Z = 13.03 (4 5 3 10 14 6 6 6 0.13; Chi ² Z = 6.27 (F 10 2 0.20; Chi ² Z = 1.38 (F 0 0 0 2 2 4 13 0.00; Chi ² Z = 5.23 (F	$\begin{array}{r} 1788\\ = 71.44\\ (P < 0.0\\ 333\\ 20\\ 0\\ 51\\ 60\\ 52\\ 67\\ 386\\ = 12.65\\ 67\\ 386\\ = 12.65\\ 85\\ = 1.54, \\ 0\\ 25\\ 58\\ 85\\ = 1.54, \\ 0\\ 0\\ 22\\ 24\\ 30\\ 0\\ 22\\ 24\\ = 5.96, \\ = 5.96, \end{array}$	7311 1, of = 388 (00001) 15 14 25 14 25 14 14 25 13 141 14 25 13 141 14 25 13 141 14 25 13 141 14 25 13 141 15 16 17 8 8 16 17 18 16 17 18 16 17 16 17 16 17 16 17 16 17 17 17 17 17 17 17 17 17 17	1385 (P = 0. 32 200 43 30 27 299 P = 0.0 30 25 55 = 0.21 25 200 43 30 25 55 = 0.21 25 200 210 210 210 210 210 210 210 210 210	73.2% 2008); ² = 1.7% 2.2% 1.4% 2.9% 2.8% 2.9% 2.2% 1.9% 17.1% B); ² = 45° 2.0% 1.0% 3.0%); ² = 35% 0.3% 0.3% 1.4% 0.3% 1.0% 0.3% 1.0% 0.9% 1.5% 6.7%	0.29 [0.24, 0.35] 47% 0.26 [0.10, 0.70] 0.36 [0.16, 0.80] 0.12 [0.04, 0.37] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.12, 0.38] 0.67 [0.36, 1.27] 0.21 [0.10, 0.48] 0.24 [0.11, 0.53] 0.46 [0.19, 1.14] 0.29 [0.20, 0.43] % 0.71 [0.30, 1.69] 0.25 [0.06, 1.06] 0.50 [0.18, 1.34] 0.06 [0.00, 0.97] 0.04 [0.00, 0.70] 0.17 [0.05, 0.52] 0.14 [0.01, 2.50] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.25 [0.06, 1.08] 0.57 [0.20, 1.65]	
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Figure S1 Subgroup analysis of EA incidence: different routs. EA, emergence agitation.

Study or Subgroup	DEX Events		Contr Events		Weight	Risk Ratio <u>M-H, Random, 95% Cl</u>	Risk Ratio M-H, Random, 95% Cl
1.2.1 premedication							
Abdelaziz 2016	4	33	15	32	1.7%	0.26 [0.10, 0.70]	
Abdel-Ghaffar 2019	10	60	7	30	2.0%	0.71 [0.30, 1.69]	
Bi 2019	5	20	14	20	2.2%	0.36 [0.16, 0.80]	
Lin 2016	10	60	24	30	3.0%	0.21 [0.12, 0.38]	
Liu 2015	6	40	21	40	2.2%	0.29 [0.13, 0.63]	
Ozcengiz 2011	2	25	8	25	1.0%	0.25 [0.06, 1.06]	
Sharma 2019	2	30	30	30	1.3%	0.08 [0.02, 0.27]	
Xiao 2015	7	105	12	35	2.1%	0.19 [0.08, 0.45]	
Yao 2015	6	60	14	29	2.1%	0.21 [0.09, 0.48]	
Yao 2020	6	52	25	51	2.1%	0.24 [0.11, 0.53]	
Zhang 2020	6	67	13	67		0.46 [0.19, 1.14]	
Subtotal (95% CI)	0	552	15	389	1.9% 21.7%	0.27 [0.20, 0.36]	•
	~ ~	552	400	209	21.770	0.27 [0.20, 0.30]	•
Total events	64		183				
Heterogeneity: Tau ² = 0 Test for overall effect: 2				(P = 0.:	25); I² = 20)%	
1.2.2 after induction o	f anesthe	sia					
Abdel-Ma'boud 2014	3	20	12	20	1.5%	0.25 [0.08, 0.75]	
Al-Zaben 2016	2	50	8	25	1.0%	0.13 [0.03, 0.55]	
Asaad 2011	5	30	12	30	1.9%	0.42 [0.17, 1.04]	
	5	30 58	4	30 20			← − − − − −
Bharti 2014 Bhat 2018					0.3%	0.04 [0.00, 0.70]	
Bhat 2018	6	60	13	30	2.0%	0.23 [0.10, 0.55]	
Chen 2013	3	27	11	24	1.4%	0.24 [0.08, 0.77]	
Chen 2018	2	80	6	20	0.9%	0.08 [0.02, 0.38]	<u> </u>
Cho 2015	3	40	18	40	1.4%	0.17 [0.05, 0.52]	
El-Hamid 2017	3	43	25	43	1.4%	0.12 [0.04, 0.37]	
Erdil 2009	5	30	14	30	2.0%	0.36 [0.15, 0.87]	
Govil 2017	1	30	12	30	0.6%	0.08 [0.01, 0.60]	
Gupta 2013	0	18	4	18	0.3%	0.11 [0.01, 1.92]	• • • • • • • • • • • • • • • • • • • •
He 2013	7	61	11	26	2.1%	0.27 [0.12, 0.62]	
Ibacache 2004	8	60	11	30	2.2%	0.36 [0.16, 0.81]	
lsik 2006	1	21	10	21	0.6%	0.10 [0.01, 0.71]	
Kim, J. 2014	6	47	35	47	2.3%	0.17 [0.08, 0.37]	
Kim, N. Y.2014	1	20	11	20	0.6%	0.09 [0.01, 0.64]	
Li 2017	7	40	21	40	2.4%	0.33 [0.16, 0.69]	
Li 2018	6	40	33	40	2.4%		
						0.18 [0.09, 0.39]	
Lili 2012	3	30	13	30	1.4%	0.23 [0.07, 0.73]	
Lin 2017	6	40	17	40	2.1%	0.35 [0.16, 0.80]	· · · · · · · · · · · · · · · · · · ·
Lundblad 2015	0	22	3	21	0.3%	0.14 [0.01, 2.50]	,
Meng 2012	8	80	8	40	1.9%	0.50 [0.20, 1.23]	
Mohamed 2015	2	24	10	24	1.0%	0.20 [0.05, 0.82]	
Peng 2015	3	20	18	20	1.6%	0.17 [0.06, 0.48]	
Pestieau 2011	14	51	11	27	2.8%	0.67 [0.36, 1.27]	+
Saadawy 2009	2	30	8	30	1.0%	0.25 [0.06, 1.08]	
Sato 2010	11	39	27	42	3.1%	0.44 [0.25, 0.76]	
Shi 2019	14	45	24	45	3.3%	0.58 [0.35, 0.97]	
Shukry 2005	6	23	14	23	2.3%	0.43 [0.20, 0.92]	
Soliman 2015	6	75	29	75	2.2%	0.21 [0.09, 0.47]	
Song 2016	29	78	15	25	3.7%	0.62 [0.40, 0.95]	
Sun 2017	11	73	11	24	2.6%	0.33 [0.16, 0.66]	
Tsiotou 2018	6	31	12	29	2.0%	0.47 [0.20, 1.08]	
Yao 2018	4	60	8	29 30	2.1% 1.4%		
	4	20	8 7	30 20		0.25 [0.08, 0.76]	
Ye 2019 Subtotal (95% CI)			(1.6%	0.57 [0.20, 1.65]	▲
Subtotal (95% CI)		1516	500	1099	61.6%	0.30 [0.25, 0.37]	•
Total events Heterogeneity: Tau² = (198).11; Chi² =	= 53.92	506 , df = 35	(P = 0.0	02); I² = 35	5%	
Test for overall effect: 2		P < 0.0	0001)				
1.2.3 before the end o		-		_	<i>i</i> =		
Abdel-Rahman 2018	5	60	10	30	1.7%	0.25 [0.09, 0.67]	
Ali 2013	5	40	22	40	2.0%	0.23 [0.10, 0.54]	
Ali 2016	5	30	27	30	2.2%	0.19 [0.08, 0.42]	
Di 2014	4	30	17	30	1.8%	0.24 [0.09, 0.62]	
Guler 2005	5	30	17	30	2.0%	0.29 [0.12, 0.69]	
Hauber 2015	69	193	125	189	4.6%	0.54 [0.44, 0.67]	-
Makkar 2016	3	32	13	32	1.4%	0.23 [0.07, 0.73]	
Prasad 2017	2	25	17	25	1.1%	0.12 [0.03, 0.46]	
Subtotal (95% CI)	-	440		406	16.8%	0.26 [0.16, 0.43]	◆
Total events	98		248				-
Heterogeneity: Tau ² = 0 Test for overall effect: 2	0.27; Chi² =		, df = 7 (l	P = 0.0	05); l² = 66	5%	
. sst for overall effect. Z		2508		180/	100.0%	0.29 [0.25, 0.34]	•
Total (95% CI)				1034	.00.0/0	0.20 [0.20, 0.34]	•
Total (95% CI)			007				
Total (95% CI) Total events Heterogeneity: Tau² = 0	360		937 df = 54	(D - 0)	00031-12-	4.49/	

Figure S2 Subgroup analysis of EA incidence: different timing. EA, emergence agitation.

Study or Subgroup	DEX		Contr		Weight	Risk Ratio M-H, Random, 95% C	Risk Ratio
1.3.1 bolus dosage	LYGINS	10101		10101	mangin		
Abdelaziz 2016	4	33	15	32	1.7%	0.26 [0.10, 0.70]	
Abdel-Ghaffar 2019	10	60	7	30	2.0%	0.71 [0.30, 1.69]	
Abdel-Rahman 2018	5	60					
			10	30	1.7%	0.25 [0.09, 0.67]	
Ali 2013	5	40	22	40	2.0%	0.23 [0.10, 0.54]	
Ali 2016	5	30	27	30	2.2%	0.19 [0.08, 0.42]	
Al-Zaben 2016	2	50	8	25	1.0%	0.13 [0.03, 0.55]	-
Asaad 2011	5	30	12	30	1.9%	0.42 [0.17, 1.04]	
Bharti 2014	0	58	4	20	0.3%	0.04 [0.00, 0.70]	
Bhat 2018	6	60	13	30	2.0%	0.23 [0.10, 0.55]	
Bi 2019	5	20	14	20	2.2%	0.36 [0.16, 0.80]	
Chen 2018	2	80	6	20	0.9%	0.08 [0.02, 0.38]	
Cho 2015	3	40	18	40	1.4%	0.17 [0.05, 0.52]	
Di 2014	4	30	17	30	1.8%	0.24 [0.09, 0.62]	
El-Hamid 2017	3	43	25	43	1.4%	0.12 [0.04, 0.37]	
Erdil 2009	5	30	14	30	2.0%	0.36 [0.15, 0.87]	
Guler 2005	5	30	17	30	2.0%	0.29 [0.12, 0.69]	
Hauber 2015	69	193	125	189	4.6%	0.54 [0.44, 0.67]	-
He 2013	7	61	11	26	2.1%	0.27 [0.12, 0.62]	
Ibacache 2004	8	60	11	30	2.2%	0.36 [0.16, 0.81]	
Isik 2006	1	21	10	21	0.6%	0.10 [0.01, 0.71]	
Li 2017	7	40	21	40	2.4%	0.33 [0.16, 0.69]	
Lili 2012	3	30	13	30	2.4 <i>%</i> 1.4%	0.23 [0.07, 0.73]	
Lin 2016	10	60 40	24	30	3.0%	0.21 [0.12, 0.38]	
Liu 2015	6	40	21	40	2.2%	0.29 [0.13, 0.63]	·
Lundblad 2015	0	22	3	21	0.3%	0.14 [0.01, 2.50]	
Makkar 2016	3	32	13	32	1.4%	0.23 [0.07, 0.73]	
Mohamed 2015	2	24	10	24	1.0%	0.20 [0.05, 0.82]	
Ozcengiz 2011	2	25	8	25	1.0%	0.25 [0.06, 1.06]	
Pestieau 2011	14	51	11	27	2.8%	0.67 [0.36, 1.27]	
Prasad 2017	2	25	17	25	1.1%	0.12 [0.03, 0.46]	
Saadawy 2009	2	30	8	30	1.0%	0.25 [0.06, 1.08]	
Sato 2010	11	39	27	42	3.1%	0.44 [0.25, 0.76]	
Sharma 2019	2	30	30	30	1.3%	0.08 [0.02, 0.27]	
Shi 2019	14	45	24	45	3.3%	0.58 [0.35, 0.97]	
Song 2016	29	78	15	25	3.7%	0.62 [0.40, 0.95]	
Sun 2017	11	73	11	24	2.6%	0.33 [0.16, 0.66]	
Tsiotou 2018	6	31	12	29	2.1%	0.47 [0.20, 1.08]	
Xiao 2015	7	105	12	35	2.1%	0.19 [0.08, 0.45]	
Yao 2015	6	60	14	29	2.1%	0.21 [0.09, 0.48]	
Yao 2018	4	60	8	30	1.4%	0.25 [0.08, 0.76]	
Yao 2020	6	52	25	51	2.2%	0.24 [0.11, 0.53]	
Ye 2019	4	20	7	20	1.6%	0.57 [0.20, 1.65]	
	6		13		1.9%		
Zhang 2020 Subtotal (95% CI)	0	67 2068	15	67 1497	80.9%	0.46 [0.19, 1.14]	▲
. ,		2000	700	1497	00.9%	0.30 [0.25, 0.36]	•
Total events Heterogeneity: Tau² = 0 Test for overall effect: Z				(P = 0.	0006); l² = 4	46%	
1.3.2 continuous dosa			,				
Abdel-Ma'boud 2014	3-	20	12	20	1.5%	0.25 [0.08, 0.75]	<u> </u>
Chen 2013	3	27	11	24	1.4%		———
Govil 2017	1	30	12	30	0.6%	0.24 [0.08, 0.77] 0.08 [0.01, 0.60]	
Gupta 2013	0	18	4			0.11 [0.01, 1.92]	· · · · · · · · · · · · · · · · · · ·
				18	0.3%		
Kim, J. 2014 Kim, N. X 2014	6	47	35	47	2.3%	0.17 [0.08, 0.37]	
Kim, N. Y.2014	1	20	11	20	0.6%	0.09 [0.01, 0.64]	
Li 2018	6	40	33	40	2.4%	0.18 [0.09, 0.39]	
Lin 2017	6	40	17	40	2.1%	0.35 [0.16, 0.80]	
Meng 2012	8	80	8	40	1.9%	0.50 [0.20, 1.23]	
Peng 2015	3	20	18	20	1.6%	0.17 [0.06, 0.48]	• <u> </u>
Shukry 2005	6	23	14	23	2.3%	0.43 [0.20, 0.92]	
Soliman 2015	6	75	29	75	2.2%	0.21 [0.09, 0.47]	
Subtotal (95% CI)		440		397	19.1%	0.25 [0.18, 0.33]	◆
Total events	49		204				
Heterogeneity: Tau² = 0 Test for overall effect: Z				(P = 0.	52); I² = 0%		
		2508	,	1894	100.0%	0.29 [0.25, 0.34]	♦
Total (95% CI)							
Total (95% CI) Total events	360	2000	937				
Total (95% CI) Total events Heterogeneity: Tau² = 0	360		937 df = 54			1494	

Figure S3 Subgroup analysis of EA incidence: different patterns. EA, emergence agitation.

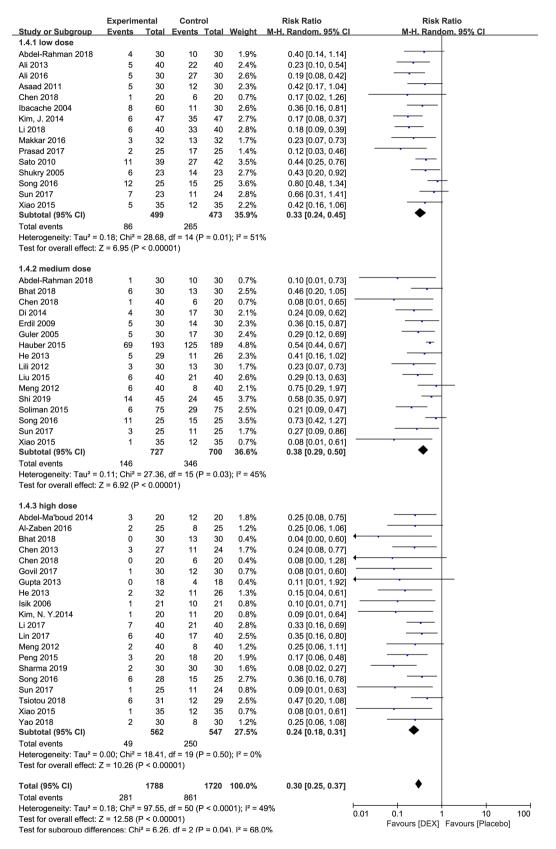


Figure S4 Subgroup analysis of EA incidence: different dose. EA, emergence agitation.

GRADE results

DEX compared to placebo or comparator for EA in children Bibliography: DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

		Cert	tainty asses	ssment				Su	mmary of fin	dings	
Participants						Overall	Study event	rates (%)	Relative		ted absolute ffects
(studies) Follow up	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	certainty of evidence	With placebo or comparater	With DEX	effect (95% CI)	Risk with placebo or comparater	Risk difference with DEX
EA incide	nce: d	exmedetom	idine vs p	lacebo							
4402 (55 RCTs)	not serious	not serious	not serious	not serious	publication bias strongly suspected ^a	⊕⊕⊕⊖ MODERATE	937/1894 (49.5%)	360/2508 (14.4%)	RR 0.29 (0.25 to 0.34)	495 per 1,000	351 fewer per 1,000 (from 371 fewer to 327 fewer)
EA incide	nce su	bgroup: dif	ferent rou	te - intrav	/enous						
3173 (39 RCTs)	not serious	not serious ^b	not serious	not serious	publication bias strongly suspected ^c	⊕⊕⊕⊖ MODERATE	731/1385 (52.8%)	281/1788 (15.7%)	RR 0.29 (0.24 to 0.35)	528 per 1,000	375 fewer per 1,000 (from 401 fewer to 343 fewer)
EA incide	nce su	bgroup: dif	ferent rou	te - intrai	nasal				I		
685 (8 RCTs)	not serious	serious	not serious	not serious	none	⊕⊕⊕⊖ MODERATE	141/299 (47.2%)	54/386 (14.0%)	RR 0.29 (0.20 to 0.43)	472 per 1,000	335 fewer per 1,000 (from 377 fewer to 269 fewer)
EA incide	nce su	bgroup: dif	ferent rou	te - oral							1
140 (2 RCTs)	not serious	not serious	not serious	serious ^d	none	⊕⊕⊕⊖ MODERATE	15/55 (27.3%)	12/85 (14.1%)	RR 0.50 (0.18 to 1.34)	273 per 1,000	136 fewer per 1,000 (from 224 fewer to 93 more)

EA incidence subgroup: different route - caudal or nerve-blocking

459 (8 RCTs)	not serious	not serious	not serious	not serious	none	⊕⊕⊕⊕ нісн	66/210 (31.4%)	13/249 (5.2%)	RR 0.24 (0.14 to 0.41)	314 per 1,000	239 fewer per 1,000 (from 270 fewer to 185 fewer)
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EA incidence subgroup: different time - premedication

941 (11 RCTs)	not serious	not serious	not serious	not serious	none	⊕⊕⊕⊕ нісн	183/389 (47.0%)	64/552 (11.6%)	RR 0.27 (0.20 to 0.36)	470 per 1,000	343 fewer per 1,000 (from 376 fewer to 301 fewer)
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EA incidence subgroup: different time - after induction of anesthesia

2615 (36 RCTs)	not serious	not serious	not serious	not serious	publication bias strongly suspected ^e	⊕⊕⊕⊖ MODERATE	506/1099 (46.0%)	198/1516 (13.1%)	RR 0.30 (0.25 to 0.37)	460 per 1,000	322 fewer per 1,000 (from 345 fewer to 290 fewer)
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EA incidence subgroup: different time - before the end of surgery

846 (8 RCTs)	not serious	serious ^f	not serious	not serious	publication bias strongly suspected ^g	⊕⊕⊖⊖ Low	248/406 (61.1%)	98/440 (22.3%)	RR 0.26 (0.16 to 0.43)	611 per 1,000	452 fewer per 1,000 (from 513 fewer to 348 fewer)
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EA incidence subgroup: bolus or continuous dosage - bolus dosage

EA incidence subgroup: bolus or continuous dosage - continuous dosage

837 (12 RCTs)	not serious	not serious	not serious	not serious	none	⊕⊕⊕⊕ high	204/397 (51.4%)	49/440 (11.1%)	RR 0.25 (0.18 to 0.33)	514 per 1,000	385 fewer per 1,000 (from 421 fewer to 344 fewer)
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EA incidence: dexmedetomidine vs midazolam

779 (12 RCTs)	not serious	not serious	not serious	not serious	none	⊕⊕⊕⊕ _{HIGH}	132/386 (34.2%)	45/393 (11.5%)	RR 0.34 (0.25 to 0.45)	342 per 1,000	226 fewer per 1,000 (from 256 fewer to 188 fewer)
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EA incidence: Dexmedetomidine vs fentanyl

371 (5 RCTs)	not serious	serious ^j	not serious	serious ^k	none	⊕⊕⊖⊖ Low	49/171 (28.7%)	40/200 (20.0%)	RR 0.78 (0.42 to 1.44)	287 per 1,000	63 fewer per 1,000 (from 166 fewer to 126 more)
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EA incidence: Dexmedetomidine vs propofol

188 not serious not serious very serious very serious		22/96 (22.9%)	11/92 (12.0%)	RR 0.51 (0.27 to 1.00)	229 per 1,000	112 fewer per 1,000 (from 167 fewer to 0 fewer)
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EA incidence: Dexmedetomidine vs ketamine

EA incidence: Dexmedetomidine vs ketofol

110 (2 RCTs)	not serious	not serious	not serious	very serious	none	⊕⊕⊖⊖ Low	13/55 (23.6%)	7/55 (12.7%)	RR 0.54 (0.23 to 1.24)	236 per 1,000	109 fewer per 1,000 (from 182 fewer to 57 more)
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different Dose

different Dose - low dose

972 (15 RCTs)	not serious	serious ^q	not serious	not serious	publication bias strongly suspected ^r	⊕⊕⊖⊖ Low	265/473 (56.0%)	86/499 (17.2%)	RR 0.33 (0.24 to 0.45)	560 per 1,000	375 fewer per 1,000 (from 426 fewer to 308 fewer)
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different Dose - medium dose

1427 (16 RCTs)	not serious	serious ^s	not serious	not serious	publication bias strongly suspected ^{f,t}	⊕⊕⊖⊖ Low	346/700 (49.4%)	146/727 (20.1%)	RR 0.38 (0.29 to 0.50)	494 per 1,000	306 fewer per 1,000 (from 351 fewer to 247 fewer)
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different Dose - high dose

1109 (20 RCTs)	not serious	not serious	not serious	not serious	publication bias strongly suspected ^u	⊕⊕⊕⊖ MODERATE	250/547 (45.7%)	49/562 (8.7%)	RR 0.24 (0.18 to 0.31)	457 per 1,000	347 fewer per 1,000 (from 375 fewer to 315 fewer)
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CI: Confidence interval; RR: Risk ratio

Explanations

- a. Egger's tests P=0.000
- b. Heterogeneity: Tau² = 0.13; Chi² = 71.44, df = 38 (P = 0.0008); I² = 47%
- c. Egger's tests P=0.000
- d. Heterogeneity: Tau² = 0.27; Chi² = 20.41, df = 7 (P = 0.005); I² = 66%
- e. Egger's tests P=0.000
- f. Heterogeneity: Tau² = 0.27; Chi² = 20.41, df = 7 (P = 0.005); I² = 66%
- g. Egger's tests P=0.000
- h. Heterogeneity: Tau² = 0.13; Chi² = 78.09, df = 42 (P = 0.0006); I² = 46%

i. Egger's tests P=0.000

- j. Heterogeneity: Tau² = 0.24; Chi² = 8.00, df = 4 (P = 0.09); I² = 50%
- k. cumulative Z-curve did not enter the futility area or crossed TSMB
- I. cumulative Z-curve did not enter the futility area or crossed TSMB
- m. cumulative Z-curve did not enter the futility area or crossed TSMB
- n. cumulative Z-curve did not enter the futility area or crossed TSMB
- o. Heterogeneity: Tau² = 0.18; Chi² = 97.55, df = 50 (P < 0.0001); I² = 49%
- p. Egger's tests P=0.000
- q. Heterogeneity: Tau² = 0.18; Chi² = 28.68, df = 14 (P = 0.01); I² = 51%

r. Egger's tests P=0.027

- s. Heterogeneity: Tau² = 0.11; Chi² = 27.36, df = 15 (P = 0.03); I² = 45%
- t. Egger's tests P=0.001
- u. Egger's tests P=0.000

DEX compared to placebo for severe EA in children

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DIDIIOGRADINE: DEX TOP D	A in children. Cochrane Database of Systematic Reviews [Year], Issu	le lissuel.

		Certa	ainty asses	sment			Summary of findings					
Participants	Di-l-				Publication bias	Overall certainty of evidence	Study event rates (%)		Relative	Anticipated abso effects		
(studies) Follow up	Risk of bias	Inconsistency	Indirectness	Imprecision			With placebo	With DEX	effect (95% CI)	Risk with placebo	Risk difference with DEX	
Severe EA	A incid	dence: DEX	vs Placeb	0								

927 (11 RCTs)	not not serious	not serious	not serious	none	⊕⊕⊕⊕ нісн	137/420 (32.6%)	40/507 (7.9%)	RR 0.23 (0.16 to 0.32)	326 per 1,000	251 fewer per 1,000 (from 274 fewer to 222 fewer)
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CI: Confidence interval; RR: Risk ratio

DEX compared to placebo or compatater for emergence time in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

		Certa	inty assess	sment				Sun	mary of fi	ndings	
Participants	Risk	Inconsistency		Imprecision	bias	Overall	Study event rates (%)		Relative	Anticipated absolute effects	
(studies) Follow up	of bias		Indirectness			of evidence	With placebo or compatater		effect (95% CI)	Risk with placebo or compatater	Risk difference with DEX

Emergence time: DEX vs Placebo

Emergence time: DEX vs Midazolam

456 (6 RCTs)	not very serious serious	not serious	serious ^d	none	⊕⊖⊖ ⊖ VERY LOW	226	230	-	The mean emergence time: DEX vs Midazolam was 0	MD 0.45 higher (1.45 lower to 2.35 higher)	
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Emergence time: DEX vs Fentanyl

371 not very serious ^e not serious serious ^f	none ⊕⊖⊖ ⊖ VERY LOW	171	200	-	The mean emergence time: DEX vs Fentanyl was 0	MD 0.46 lower (1.94 lower to 1.02 higher)
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CI: Confidence interval; MD: Mean difference

Explanations

a. Heterogeneity: Tau² = 0.83; Chi² = 622.02, df = 44 (P < 0.00001); I² = 93%

b. Egger's tests P=0.000

c. Heterogeneity: Tau² = 5.33; Chi² = 125.26, df = 5 (P < 0.00001); I² = 96%

d. the cumulative Z-curve did not enter the futility area or crossed TSMB

e. Heterogeneity: Tau² = 2.12; Chi² = 19.55, df = 4 (P = 0.0006); I² = 80%

f. the cumulative Z-curve did not enter the futility area or crossed TSMB

DEX compared to placebo or comparater for discharge time from recovery room in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

		Certa	ainty asses	sment			Summary of findings				
Participants	Risk	h		ss Imprecision Publication		Overall	Study even (%)		Relative	Anticipated absolute effects	
(studies) Follow up	of bias	Inconsistency	Indirectness		bias	evidence	With placebo or comparater	With DEX	effect (95% CI)	Risk with placebo or comparater	

Discharge time: DEX vs placebo

2725 (31 RCTs)	not serious	very serious ^a	not serious	serious ^b	none	⊕⊖⊖⊖ VERY LOW	1186	1539	-	The mean discharge time: DEX vs placebo was 0	MD 1.27 higher (2.43 lower to 4.96 higher)
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Discharge time: DEX vs Midazolam

307 (4 RCTs)	not serious	not serious	not serious	serious ^c	none	⊕⊕⊕⊖ MODERATE	152	155	-	The mean discharge time: DEX vs Midazolam was 0	MD 0.94 lower (1.82 lower to 0.06 lower)
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Discharge time: DEX vs Fentanyl

189 (3 RCTs)	not serious	serious ^d	not serious	serious ^e	none	⊕⊕⊖⊖ Low	80	109	-	The mean discharge time: DEX vs Fentanyl was 0	MD 3.68 higher (3 lower to 10.37 higher)	
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CI: Confidence interval; MD: Mean difference

Explanations

a. Heterogeneity: Tau² = 100.60; Chi² = 2343.93, df = 30 (P < 0.00001); I² = 99%

b. the cumulative Z-curve did not enter the futility area or crossed TSMB

c. the cumulative Z-curve did not enter the futility area or crossed TSMB

d. Heterogeneity: Tau² = 21.16; Chi² = 5.46, df = 2 (P = 0.07); I² = 63%

e. the cumulative Z-curve did not enter the futility area or crossed TSMB

DEX compared to placebo or comparater for Patients requiring rescue analgesia in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Certainty assessment							Summary of findings				
Participants R	Risk						Study event rates (%)		Relative	Anticipated absolut effects	
	of bias	Inconsistency	Indirectness	Imprecision	bias		With placebo or comparater		effect (95% CI)	Risk with placebo or comparater	Risk difference with DEX

DEX vs Placebo

2031 (23 RCTs)	not serious	serious ^a	not serious	not serious	publication bias strongly suspected ^b		334/893 (37.4%)	212/1138 (18.6%)	RR 0.43 (0.31 to 0.59)	374 per 1,000	213 fewer per 1,000 (from 258 fewer to 153 fewer)
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DEX vs Midazolam

DEX vs fentanyl

253 (3 RCTs)	not serious	not serious	not serious	serious ^d	none	⊕⊕⊕⊖ MODERATE	35/113 (31.0%)	16/140 (11.4%)	RR 0.39 (0.22 to 0.66)	310 per 1,000	189 fewer per 1,000 (from 242 fewer to 105 fewer)
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CI: Confidence interval; RR: Risk ratio

Explanations

a. Heterogeneity: Tau² = 0.27; Chi² = 86.75, df = 20 (P < 0.00001); I² = 77%

b. Egger's tests P=0.002

c. the cumulative Z-curve did not enter the futility area or crossed $\ensuremath{\mathsf{TSMB}}$

d. the cumulative Z-curve did not enter the futility area or crossed TSMB

DEX compared to placebo or compatater for PONV in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

	Certainty assessment							Summary of findings				
Participants	Risk			Imprecision	DIAS	Overall	Study event rates (%)		Relative	Anticipated absolu effects		
(studies) Follow up	of bias	Inconsistency	Indirectness			certainty of evidence	With placebo or compatater	With DEX	effect (95% CI)	Risk with placebo or compatater	Risk difference with DEX	

PONV incidence between DEX and Placebo

2616 (32 RCTs)	not serious	not serious	not serious	not serious	none	⊕⊕⊕⊕ нісн	149/1204 (12.4%)	64/1412 (4.5%)	RR 0.43 (0.33 to 0.55)	124 per 1,000	71 fewer per 1,000 (from 83 fewer to 56 fewer)
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DEX vs Midazolam

366 (5 RCTs) si	not not serious	not serious	serious ^a	none	⊕⊕⊕⊖ MODERATE	31/181 (17.1%)	15/185 (8.1%)	RR 0.48 (0.27 to 0.85)	171 per 1,000	89 fewer per 1,000 (from 125 fewer to 26 fewer)
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DEX vs Ketamine

204 (3 RCTs)	not serious	serious ^b	not serious	serious ^c	none	⊕⊕⊖⊖ Low	29/87 (33.3%)	38/117 (32.5%)	RR 0.58 (0.19 to 1.82)	333 per 1,000	140 fewer per 1,000 (from 270 fewer to 273 more)
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CI: Confidence interval; RR: Risk ratio

Explanations

a. the cumulative Z-curve did not enter the futility area or crossed TSMB

b. Heterogeneity: Tau² = 0.62; Chi² = 6.53, df = 2 (P = 0.04); I² = 69%

c. the cumulative Z-curve did not enter the futility area or crossed TSMB

DEX compared to placebo for Hypotension incidence in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

	Certainty assessment								Summary of findings				
	Participants (studies) Follow up	Risk			Imprecision	bias	Overall certainty of evidence	Study event rates (%)		Relative	Anticipated absolute effects		
		of bias	s Inconsistency	Indirectness				With	With DEX	effect (95% CI)	Risk with placebo	Risk difference with DEX	

hypotension incidence between DEX and Placebo

1868 (20 RCTs)	not serious	not serious	not serious	very serious ^a	none	⊕⊕⊖⊖ Low	19/837 (2.3%)	30/1031 (2.9%)	RR 1.5 (0.9 to 2.5)	23 per 1,000	11 more per 1,000 (from 2 fewer to 34 more)
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CI: Confidence interval; RR: Risk ratio

Explanations

a. the cumulative Z-curve did not enter the futility area or crossed TSMB

DEX compared to placebo for bradycardia incidence in children Bibliography: . DEX for EA in children. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

	Certainty assessment								Summary of findings				
P	Participants (studies) Follow up	Risk of bias	Inconsistency		Imprecision		Overall certainty of evidence	Study event rates (%)		Relative	Anticipated absolute effects		
				Indirectness				With	With DEX	effect (95% CI)	Risk with placebo	Risk difference with DEX	

Bradycardia incidence between DEX and Placebo

2333 (26 RCTs)	not serious	not serious	not serious	very serious ^a		⊕⊖⊖⊖ VERY LOW	9/1027 (0.9%)	51/1306 (3.9%)	RR 3.47 (1.86 to 6.44)	9 per 1,000	22 more per 1,000 (from 8 more to 48 more)
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CI: Confidence interval; RR: Risk ratio

Explanations

a. the cumulative Z-curve did not enter the futility area or crossed TSMB

b. Egger's tests P=0.015