

Table SI. Comprehensive search of Cochrane Library.

ID	Search term	Hits
#1	'Dexmedetomidine'	5,655
#2	'Infants' or 'toddlers' or 'child' or 'pediatric' or 'paediatric' or 'childhood'	203,448
#3	'Respiratory complications' or 'adverse respiratory events' or 'perioperative respiratory adverse events' or 'airway complications' or 'respiratory depression'	27,042
#4	'Random' or 'trial' or 'placebo' or 'randomized' 'controlled trial'	1,392,955
#5	#1 and #2 and #3 #4 in trials	108

Table SII. Comprehensive search of PubMed.

Search no.	Query	Sort by	Filters	Search term	Results	Search time
5	#1 and #2 and #3 and #4	Mos t Rec ent	Huma ns	[“dexmedetomidine”(MeSH Terms)]OR “dexmedetomidine”(All Fields)OR “dexmedetomidine s”(All Fields)] AND “humans”(MeSH Terms) AND { [“infant”(MeSH Terms)OR “infant”(All Fields) OR “infants”(All Fields)OR “infant s”(All Fields)OR [“toddler”(All Fields)OR “toddler s”(All Fields)OR “toddlers”(All Fields)] OR [“child”(MeSH Terms)OR “child”(All Fields)OR “children”(All Fields)OR “child s”(All Fields) OR “children s”(All Fields)OR “childrens”(All Fields)OR “childs”(All Fields)]OR [“paediatrics”(All Fields)OR “pediatrics”(MeSH Terms)OR “pediatrics”(All Fields) OR “paediatric”(All Fields) OR	70	0:40:1 0

				<p>“pediatric”(All Fields)]OR [“paediatrics”(All Fields) OR “pediatrics”(MeSH Terms)OR “pediatrics”(All Fields)OR “paediatric”(All Fields) OR “pediatric”(All Fields)]OR [“childhood”(All Fields)OR “childhoods”(All Fields)]} AND “humans”(MeSH Terms)] AND {[“respiratory”(All Fields)AND [“complicances”(All Fields)OR “complicate”(All Fields)OR “complicated”(All Fields)OR “complicates”(All Fields)OR “complicating”(All Fields)OR “complication”(All Fields) OR “complication s”(All Fields)OR “complications”(MeSH Subheading) OR “complications”(All Fields)]}OR {[“adverse”(All Fields)OR “adversely”(All Fields) OR “adverses”(All Fields)] AND “respiratory”(All Fields) AND [“event”(All Fields) OR “event s”(All</p>	
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				<p>Fields)OR “events”(All Fields)]}OR {[“perioperative”(All Fields)OR “perioperatively”(All Fields)]AND “respiratory”(All Fields)AND [“adverse”(All Fields) OR “adversely”(All Fields)OR “adverses”(All Fields)] AND [“event”(All Fields)OR “event s”(All Fields)OR “events”(All Fields)]} OR {[“airway”(All Fields) OR “airway s”(All Fields) OR “airways”(All Fields)] AND [“complicances”(All Fields) OR “compligate”(All Fields)OR “complicated”(All Fields) OR “complicates”(All Fields) OR “complicating”(All Fields) OR “complication”(All Fields) OR “complication s”(All Fields)OR “complications”(MeSH Subheading)OR “complications”(All Fields)]}OR [“respiratory insufficiency”(MeSH</p>	
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				<p>Terms)]OR [“respiratory”(All Fields) AND “insufficiency”(All Fields)]OR [“respiratory insufficiency”(All Fields)OR [“respiratory”(All Fields) AND “depression”(All Fields)] OR “respiratory depression”(All Fields)]} AND [“humans”(MeSH Terms)]AND {[“random allocation”(MeSH Terms) OR [“random”(All Fields) AND “allocation”(All Fields)] OR “random allocation”(All Fields) OR “random”(All Fields) OR “randomization”(All Fields) OR “randomized”(All Fields)OR “randomisation”(All Fields)OR “randomisations”(All Fields)OR “randomise”(All Fields) OR “randomised”(All Fields) OR “randomising”(All Fields)OR “randomizations”(All Fields)OR “randomize”(All Fields)OR “randomizes”(All Fields) OR “randomizing”(All Fields) OR “randomness”(All</p>	
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				Fields)OR “randoms”(All Fields)OR [“clinical trials as topic”(MeSH Terms) OR [“clinical”(All Fields)AND “trials”(All Fields)AND “topic”(All Fields)]OR “clinical trials as topic”(All Fields)OR “trial”(All Fields)OR “trial s”(All Fields)OR “trialed”(All Fields) OR “trialing”(All Fields)OR [“trials”(All Fields)]OR [“placeboes”(All Fields) OR “placebos”(MeSH Terms)OR “placebos”(All Fields)OR “placebo”(All Fields)]OR [“randomized controlled trial”(Publication Type)OR “randomized controlled trials as topic”(MeSH Terms)OR [“randomized controlled trial”(All Fields) OR [“randomised controlled trial”(All Fields)]} AND [“humans”(MeSH Terms)]} AND [humans(Filter)]		
4	Random or trial or placebo or	Mo st rece	Huma ns	[“random allocation”(MeSH Terms)OR [“random”(All Fields) AND “allocation”(All	1,792,2 87	0:39:0 9

	‘randomized controlled trial’	nt		Fields)]OR “random allocation”(All Fields) OR “random”(All Fields)OR “randomization”(All Fields) OR “randomized”(All Fields)OR “randomisation”(All Fields) OR “randomisations”(All Fields) OR “randomise”(All Fields)OR “randomised”(All Fields) OR “randomising”(All Fields) OR “randomizations”(All Fields)OR “randomize”(All Fields)OR “randomizes”(All Fields)OR “randomizing”(All Fields)OR “randomness”(All Fields) OR “randoms”(All Fields) OR [“clinical trials as topic”(MeSH Terms) OR [“clinical”(All Fields)AND “trials”(All Fields) AND “topic”(All Fields)]OR “clinical trials as topic”(All Fields) OR “trial”(All Fields) OR “trial s”(All Fields)OR “trialed”(All Fields)OR “trialing”(All Fields)OR “trials”(All Fields)] OR		
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				[“placeboes”(All Fields) OR “placebos”(MeSH Terms)OR “placebos”(All Fields)OR “placebo”(All Fields)] OR [“randomized controlled trial”(Publication Type)]OR “randomized controlled trials as topic”(MeSH Terms)OR “randomized controlled trial”(All Fields) OR “randomised controlled trial”(All Fields)] AND [humans(Filter)]		
3	‘Respirato ry complicati ons’ or ‘adverse respiratory events’ or ‘perioperat ive respiratory adverse events’ or ‘airway complicati ons’ or ‘respirator	Mos t rece nt	Huma ns	[“respiratory”(All Fields)]AND [“complicances”(All Fields)OR “complicate”(All Fields)OR “complicated”(All Fields)OR “complicates”(All Fields)OR “complicating”(All Fields)OR “complication”(All Fields)OR “complication s”(All Fields) OR “complications”(MeSH Subheading)OR “complications”(All Fields)] OR {[“adverse”(All Fields) OR “adversely”(All Fields) OR “adverses”(All Fields)]AND	197,03 6	0:38:0 9

	y depression ,		<p>“respiratory”(All Fields)AND [“event”(All Fields) OR “events”(All Fields)]} OR {[“perioperative”(All Fields)OR “perioperatively”(All Fields)]AND “respiratory”(All Fields)AND [“adverse”(All Fields)OR “adversely”(All Fields)OR “adverses”(All Fields)] AND [“event”(All Fields) OR “event s”(All Fields)OR “events”(All Fields)]}OR {[“airway”(All Fields])OR “airway s”(All Fields) OR “airways”(All Fields)] AND [“complicances”(All Fields)OR “complicate”(All Fields)OR “complicated”(All Fields)OR “complicates”(All Fields)OR “complicating”(All Fields)OR “complication”(All Fields)OR “complication s”(All Fields)OR “complications”(MeSH Subheading)OR “complications”(All</p>		
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				Fields)]}OR [“respiratory insufficiency”(MeSH Terms) OR [“respiratory”(All Fields)AND “insufficiency”(All Fields)]OR “respiratory insufficiency”(All Fields)OR [“respiratory”(All Fields)AND “depression”(All Fields)]OR “respiratory depression”(All Fields)]}AND [humans(Filter)]		
2	Infants or toddlers or child or pediatric or paediatric or childhood	Mos t nt	Huma ns	[“infant”(MeSH Terms) OR “infant”(All Fields)OR “infants”(All Fields) OR “infant s”(All Fields)]OR “toddler”(All Fields)OR “toddler s”(All Fields)OR “toddlers”(All Fields) OR “child”(MeSH Terms)OR “child”(All Fields)OR “children”(All Fields) OR “child s”(All Fields)OR “children s”(All Fields)OR “childrens”(All Fields) OR “childs”(All Fields) OR “paediatrics”(All Fields) OR “pediatrics”(MeSH Terms) OR “pediatrics”(All Fields) OR “paediatric”(All Fields) OR	3,152,8 81	0:37:2 3

				“pediatric”(All Fields) OR “paediatrics”(All Fields) OR “pediatrics”(MeSH Terms)OR “pediatrics”(All Fields)OR “paediatric”(All Fields) OR “pediatric”(All Fields])OR “childhood”(All Fields)OR “childhoods”(All Fields)] AND [humans(Filter)]		
1	Dexmedetomidine	Mos t rece nt	Huma ns	[“dexmedetomidine”(MeSH Terms)] OR “dexmedetomidine”(All Fields) OR “dexmedetomidine s”(All Fields) AND [humans(Filter)]	3,522	0:36:5 2

Table SIII. Jadad scoring system for validity assessment.

First author, year (Ref.)	Randomization (points)	Double blinding (points)	Description of drop-outs (points)	Jadad score
Bi <i>et al</i> 2019 (8)	Simple randomization procedure with computer-generated allocation (2)	Allocation sequence was concealed (2)	Described (1)	5
Cai <i>et al</i> 2013 (9)	Patients were randomly assigned (1)	Concealed envelope method (2)	Not described (0)	3
Chen <i>et al</i> 2014 (10)	Patients were randomly (computer-generated) assigned (2)	Unclear (1)	Described (1)	4
Di <i>et al</i> 2017 (11)	Subjects were randomly allocated by a computer-generated table of random numbers (2)	Unclear (1)	Described (1)	4
Hauber <i>et al</i> 2015 (12)	Computer-generated randomization code (2)	Group allocation concealed from the patients (2)	Not described (0)	4
He <i>et al</i> 2013 (13)	Using computer-generated numbers (SPSS 13.0),	All treatments were diluted to 10 ml with 0.9%	Not described (0)	4

	patients were randomly allocated (2)	saline and labelled ‘study drug’ (2)		
Kocerogl u <i>et al</i> 2019 (14)	Computer-generated scheme was used to randomize the patients into dexmedetomidine or tramadol groups (2)	Unclear (1)	Not described (0)	3
Qiao <i>et al</i> 2017 (15)	Simple randomization procedure with computer-generated allocation (2)	Investigator who prepared the concealed allocation envelopes was responsible for informing the nurse medicating the children (2)	Described (1)	5
Xu <i>et al</i> 2012 (16)	Patients were allocated randomly (by computer-generated random numbers) (2)	Patients and investigators were unaware which was dexmedetomidine or normal saline (2)	Not described (0)	4
Zhuang <i>et al</i> 2011 (17)	Randomization code (generated by Microsoft Excel) was used to assign patients (2)	Allocation sequence was placed in sealed envelopes (2)	Not described (0)	4