

Anesthesia during rigid bronchoscopy for tracheobronchial foreign body removal in children:A Systematic Review and Meta-analysis of Comparative Studies

Weiping wang¹, Shangyingying Li², Hui Liu², Qin Tian², Hang Chen³, Shengfen Tu², and Fei Yang²

¹Chongqing Medical University Affiliated Children's Hospital Chongqing

²Chongqing Medical University Affiliated Children's Hospital

³Department of Anesthesiology, Children's Hospital of Chongqing Medical University, Chongqing

January 9, 2021

Abstract

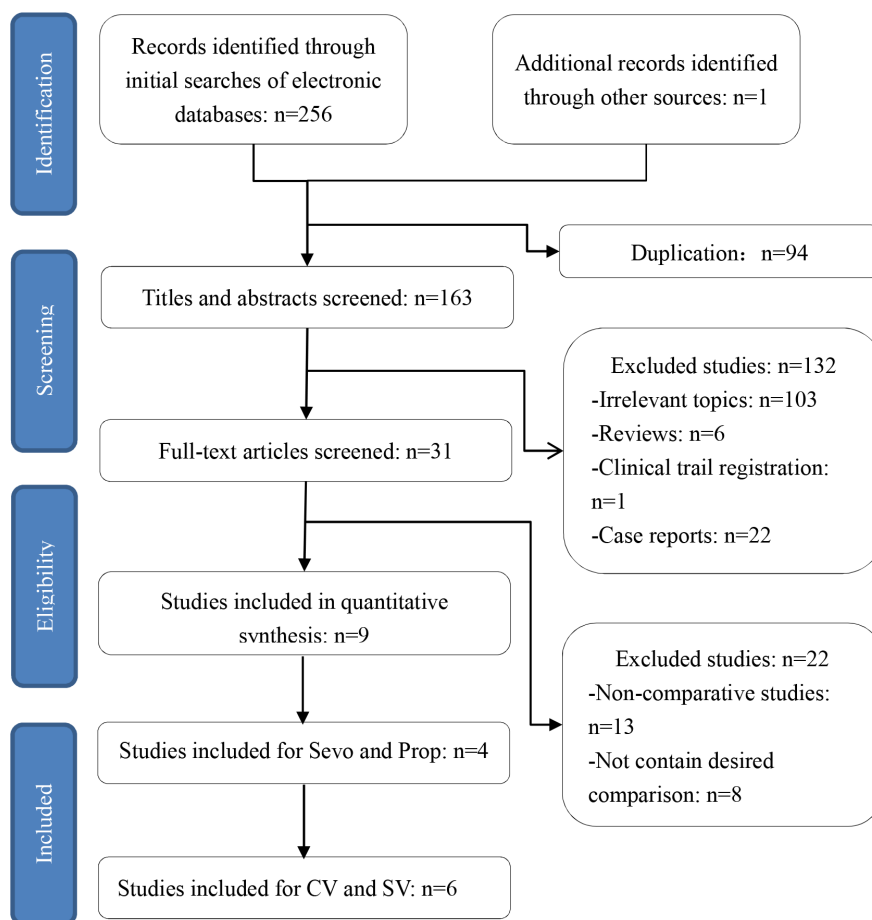
Background: There is no consensus regarding the optimal anesthetic approach to rigid bronchoscopy in children suffering from tracheobronchial FBA. We performed this meta-analysis to assess the efficacy and safety of the different anesthesia agents and ventilation modes for tracheobronchial foreign body removal via rigid bronchoscopy in young children. Methods: A systematic search of three major databases for all relevant articles. A meta-analysis was performed to analyze the data. Results: Four trials for evaluating different anesthetics and six trials for evaluating two kinds of ventilation modes were found. Compared with the sevoflurane-based volatile anesthesia group , the rate of perioperative complications included hypoxemia (OR, 2.07; 95% CI, 1.38–3.11; P=0.0004; I2 = 0%), apnea (OR, 2.74; 95% CI, 1.11–6.78; P = 0.03; I2 = 60%), laryngospasm (OR, 2.89; 95% CI, 1.67–4.98; P=0.0001; I2 = 0%), cough/bucking (OR, 2.93; 95% CI, 1.86–4.63; P<0.00001; I2 = 0%), and body movement (OR, 3.51; 95% CI, 2.03–6.09; P<0.00001; I2 = 0%) were significantly increased in the propofol-based total intravenous anesthesia and the duration of operation were longer in the Group Prop. Compared with the control ventilation group , the incidences of laryngospasm (OR, 0.16; 95% CI, 0.05–0.56; P=0.004; I2 = 54%), apnea (OR, 0.21; 95% CI, 0.09–0.50; P=0.0004; I2 = 0%), and cough/bucking (OR, 0.03; 95% CI, 0.01–0.10; P<0.00001; I2 = 41%) increased in the spontaneous ventilation group and the duration of operationand emergence from anesthesia significantly prolonged in the Group SV. Conclusions: Our meta-analysis suggests that sevoflurane-based volatile anesthesia was superior to propofol-based total intravenous anesthesia for the management of foreign body aspiration in children. There is still no strong evidence indicated that one ventilation technique was superio

Hosted file

Main document\begin{CJK}{UTF8}{gbsn}.\end{CJK}\selectlanguage{english}pdf available at <https://authorea.com/users/388348/articles/503161-anesthesia-during-rigid-bronchoscopy-for-tracheobronchial-foreign-body-removal-in-children-a-systematic-review-and-meta-analysis-of-comparative-studies>

Hosted file

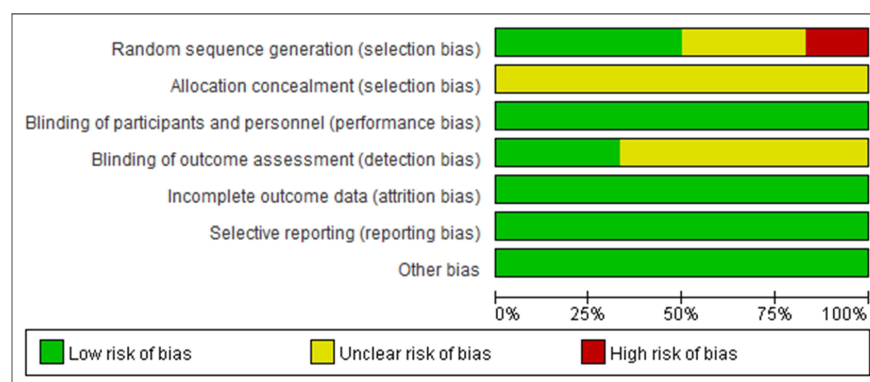
Table 1.pdf available at <https://authorea.com/users/388348/articles/503161-anesthesia-during-rigid-bronchoscopy-for-tracheobronchial-foreign-body-removal-in-children-a-systematic-review-and-meta-analysis-of-comparative-studies>



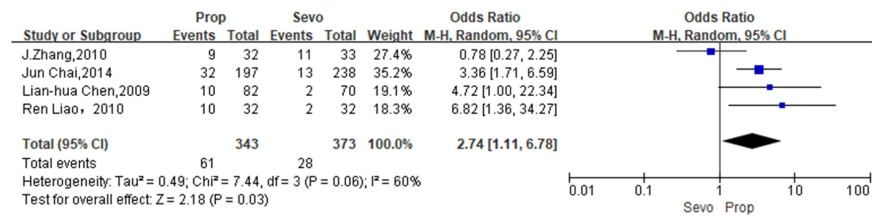
(A)

Amit Soodan, 2004	+	+	+	+	+	+	+
J Zhang, 2010	+	?	+	+	+	+	+
Leila Mashhadi, 2017	+	?	+	?	+	+	+
LI Shaoqing, 2010	?	?	+	+	+	+	+
Ren Liao, 2010	?	?	+	?	+	+	+
She YU, 2010	+	?	+	?	+	+	+
	Random sequence generation (selection bias)						
	Allocation concealment (selection bias)						
	Blinding of participants and personnel (performance bias)						
	Blinding of outcome assessment (detection bias)						
	Incomplete outcome data (attrition bias)						
	Selective reporting (reporting bias)						
	Other bias						

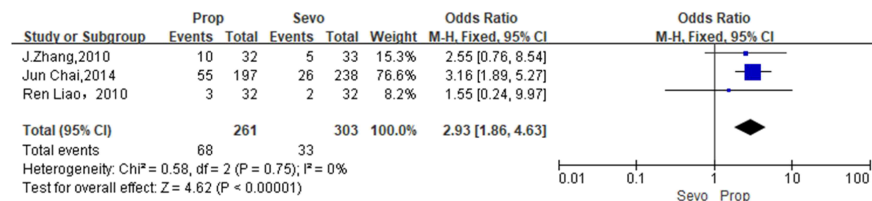
(B)



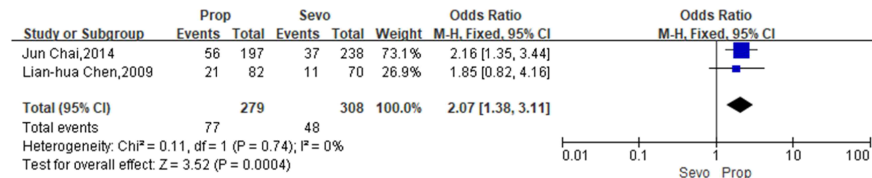
(A)



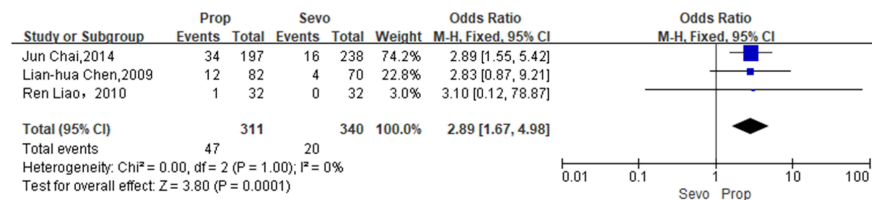
(B)



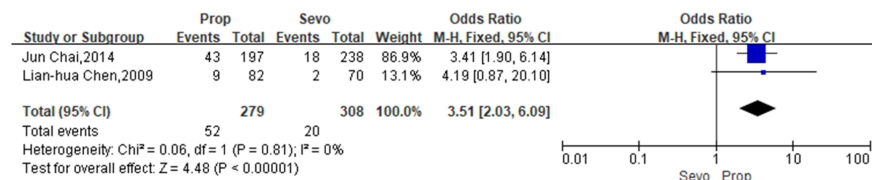
(C)



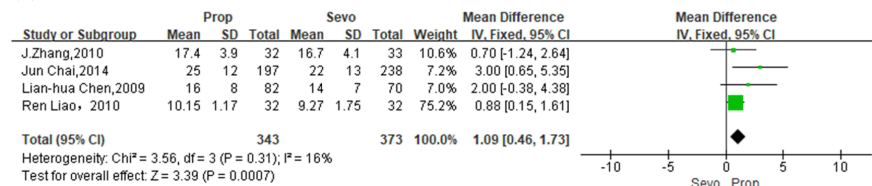
(D)



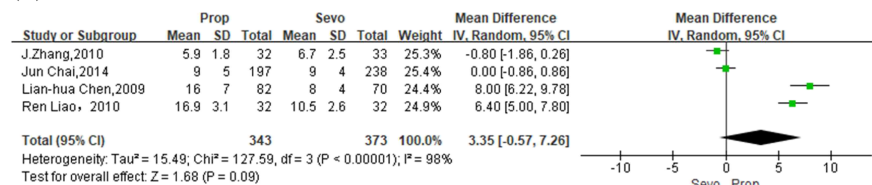
(E)



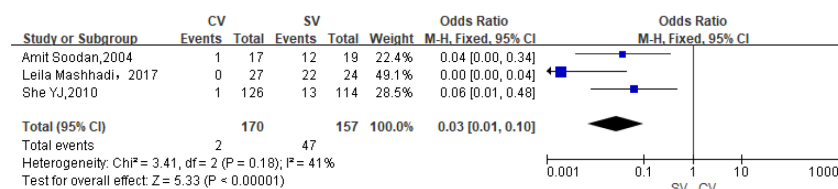
(F)



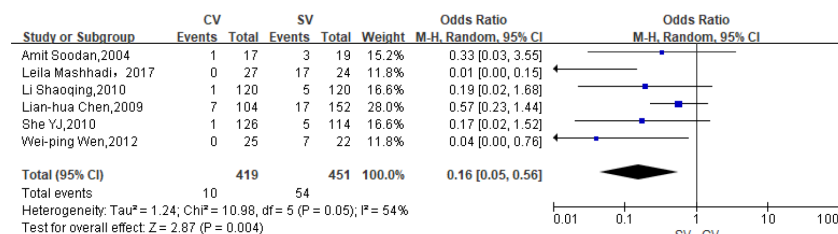
(G)



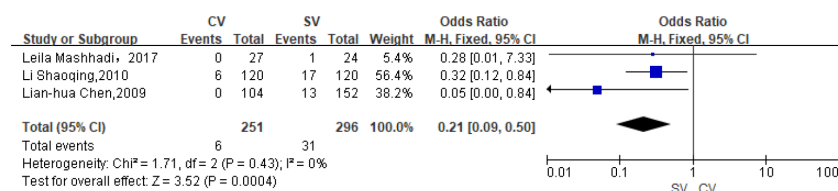
(A)



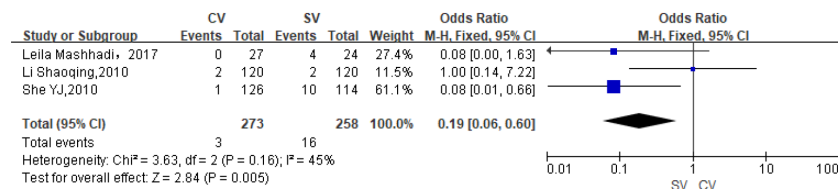
(B)



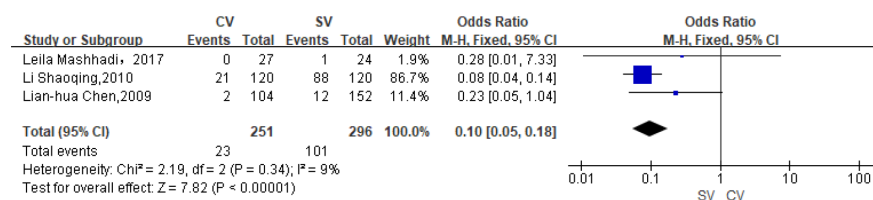
(C)



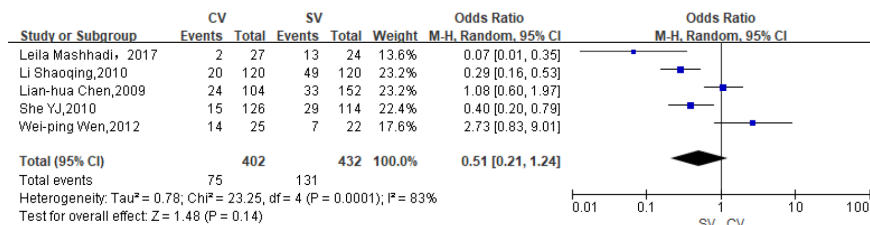
(D)



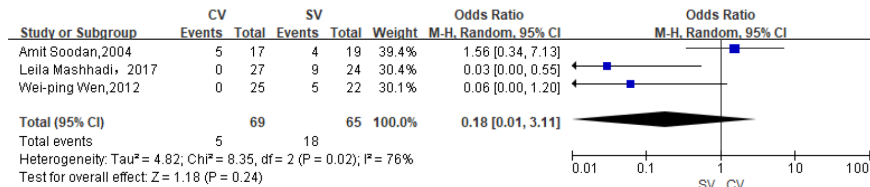
(E)



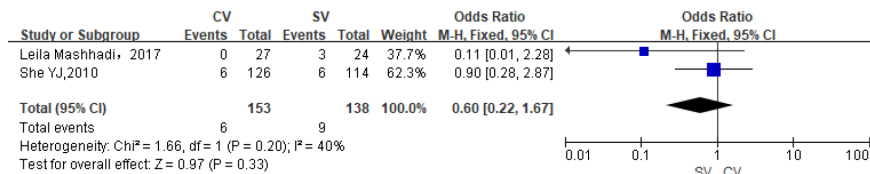
(F)



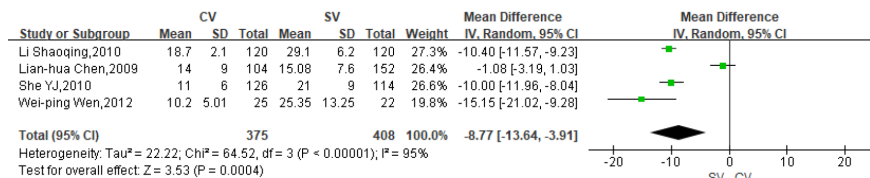
(G)



(H)



(I)



(J)

