

Table 1 - Characteristics of the included studies

First author	Publication year	Country/ zone	Study type	Study period	Age scope	Study group	Premedication	Anesthesia induction	Anesthesia maintenance	Ventilation	Outcome	Quality score
Jun Chai	2014	China	Retrospective review	2009.1-2012.12	16-27m	Sevoflurane-based volatile anaesthesia (n=23); Propofol-based total intravenous anaesthesia (n=197)	No	Sevo: sevoflurane in 100% O 2 at 4–5 l/min and in stepwise increments of 1.5% every three breaths up to a maximum of 8%, atropine (0.01 mg/kg) intravenously; Prop: sevoflurane in 100% O 2 at 4–5 l/min and in stepwise increments of 1.5% every three breaths up to a maximum of 8% atropine (0.01 mg/kg) intravenously.	Sevo: 2–5% sevoflurane and 100% O 2 2–3 l/min and propofol (100–150 µg/kg/min) intravenously, 1% lidocaine (2 mg/kg) spray; Prop: propofol (100–150 µg/kg/min), remifentanyl (0.1–0.2 µg/kg/min), 1% lidocaine (2 mg/kg) spray.	spontaneous ventilation	Hypoxemia, breath holding, laryngospasm, cough, body movement, bronchospasm, tracheotomy, cardiac arrest, duration of operation, duration of emergence from anesthesia, PEtCO2, hospital stay. Desaturation, breath-holding, laryngospasm, cough, excitement, duration of anesthesia, duration of surgery, time for loss of consciousness, time of BIS decreased to 40, emergence time, intubating condition score.	7
Ren Liao	2010	China	Randomized controlled trial	2007.5-2009.9	1–4y	Sevoflurane-based volatile anaesthesia (n=32); Propofol-based total intravenous anaesthesia (n=32)	No	Sevo: 8vol% sevoflurane with a fresh gas flow of 5l/ min pure oxygen, 4% lignocaine (maximum dose limited to 5mg/kg) spray; Prop: the TCI of propofol (initial plasma concentration 3µg/ml), remifentanyl (0.05–0.10µg/ kg/min), 4% lignocaine (maximum dose limited to 5mg/kg)spray.	Sevo: 2.5–3.5% sevoflurane in fresh gas flow; Prop: the TCI of propofol (plasma target concentration 2–3µg/ml), remifentanyl (0.05-0.10µg/kg/min),	spontaneous ventilation	duration of anesthesia, time for loss of consciousness, time of BIS decreased to 40, emergence time, intubating condition score.	RCT
J. Zhang	2010	China	Prospective, randomized study	2006.11-2008.3	1-3y	Sevoflurane-based volatile anaesthesia (n=33); Propofol-based total intravenous anaesthesia (n=32)	Topical local anaesthetic cream (EmLA, AstraZeneca) and oral premedication with	Sevo: remifentanyl (0.2 µg/ kg/min), 5% sevoflurane in oxygen, 2% lignocaine spray; Prop: remifentanyl (0.2 µg/ kg/min), propofol (2.5 mg/ kg), 2% lignocaine spray.	Sevo: remifentanyl (0.2 µg/kg/ min), 5% sevoflurane; Prop: remifentanyl (0.2 µg/kg/ minute), propofol (1 mg/kg).	spontaneous ventilation	Apnoea, cough, systolic blood pressure, heart rate, duration of procedure, time to emergence, VAS score for satisfaction	RCT

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Lian-hua Chen	2009	China	Prospective nonrandomized observational study	2007.1 - 2008.12	<5y	Controlled ventilation (n=104); Spontaneous ventilation groups(n=152 (sevoflurane-based volatile anaesthesia (n=70); propofol-based total intravenous anaesthesia prop(n=82)))	midazolam (0.3 mg.kg -1 20 minutes) Atropine (0.01 mg/kg) and corticosteroids	CV: propofol (3–5 mg/kg), remifentanil (1 µg/kg), succinylcholine (2 mg/kg), 1% lidocaine (3–5 mg/kg) spray; Sevo: 8% sevoflurane carried by 8 L/min oxygen flow ,1% lidocaine (3–5 mg/kg) spray; Prop: propofol (3–5 mg/kg), remifentanil (1 mcg/kg), 1% lidocaine (3–5 mg/kg) spray.	CV: propofol (100–150µg/kg/min), remifentanil (0.1µg/kg/min), succinylcholine (1 mg/kg); Sevo: 3%–4% sevoflurane; Prop: propofol (100–150µg/kg/min), remifentanil (0.1µg/kg/min).	CV: manual intermittent positive pressure ventilation (MPPV) SV: spontaneous ventilation	with anaesthesia. Hypoxemia, breath-holding, laryngospasm, body movement, reintubation, change of ventilation, duration of operation, duration of emergence from anesthesia, percentage of cases with FBs removed Breathing arrest, laryngospasm, cough, bucking, body movement, laryngeal edema, arrhythmia, bronchospasm, seizure, strain, pneumothorax, pneumomediastinum , foreign body replacement	7
Leila Mashhad i	2017	Iran	Randomized clinical trial	2015–2017	6–100 m	Controlled ventilation (n=27); Spontaneous ventilation groups(n=24)	no	CV: sodium thiopental (3mg/kg) and fentanyl (1µg/kg), atracurium (0.5 mg/kg); SV: 8% sevoflurane and fentanyl (1µg/kg)	CV: propofol (80–100 µg/kg/min); SV: 100% oxygen and 3% sevoflurane	CV: control ventilation SV: spontaneous ventilation		RCT

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Wei-ping Wen	2012	China	Prospective analysis	2006--2012	7 m- 9 y	Controlled ventilation (n=25); Spontaneous ventilation groups(n=22)	Scopolamine (0.015 mg/kg) and phenobarbital (2 mg/kg), ketamine (5–8 mg/kg), dexamethasone (2.5–5 mg)	CV: propofol (1.5 mg/kg) and fentanyl (2 µg/kg), vecuronium bromide (0.1 mg/kg), 2% lidocaine spray; SV: fentanyl (2 g/kg), 2% lidocaine spray, propofol (1.5 mg/kg)	CV: propofol (2–5 mg/kg/ h) and remifentanyl (0.1–0.3 µg/kg/min); SV: propofol (2–5 mg/kg/h) and remifentanyl (0.05–0.1 g/kg/h)	CV: control ventilation SV: spontaneous ventilation	SpO ₂ below 90%, laryngospasm, choke, slight laryngeal edema, anesthetic induction time, surgery time, anesthesia recovery time. Hypoxemia, breath-holding, laryngospasm, body movement, arrhythmias, restlessness, the duration of the operation, the time of emergence and recovery from anesthesia, the successful rate of FB removal, successful insertion of bronchoscope on the first attempt.	5
Li Shaoqing	2010	China	Randomized clinical trial	2005.2 -2009.6	10 m- 12 y	Controlled ventilation (n=120); Spontaneous ventilation groups(n=120)	Atropine (0.01 mg/kg) and methylprednisolone (2 mg/kg) intravenously	CV: propofol (4–5 mg/kg), fentanyl (1–2 m g/kg) and succinylcholine (2 mg/kg) SV: propofol (2 mg/kg) and hydroxybutyrate sodium (70 mg/kg)	CV: propofol (1–2 mg/kg) and succinylcholine as needed (2 mg/kg); SV: propofol as needed (1–2 mg/kg)	CV: manual intermittent positive pressure ventilation (IPPV) SV: spontaneous ventilation	duration of the operation, the time of emergence and recovery from anesthesia, the successful rate of FB removal, successful insertion of bronchoscope on the first attempt.	RCT
Amit Soodan	2004	India	Randomized clinical trial	1998.10- 2000.11	no	Controlled ventilation (n=17); Spontaneous ventilation groups(n=19)	Atropine(0.01 mg kg) intravenously	CV: halothane inhalation by mask or by sleep dose of thiopentone, 10% lidocaine (10 mg) spray; suxamethonium (1.5 mg/kg); SV: halothane inhalation by mask or by sleep dose of thiopentone, 10% lidocaine (10 mg) spray	CV: halothane 0.5% and intermittent doses of suxamethonium SV: O 2 and halothane 1.5–3 %	CV: intermittent positive pressure ventilation (IPPV) SV:spontaneous ventilation	Laryngospasm, coughing and bucking, laryngeal edema, ventricular arrhythmia, convulsions.	RCT

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She YJ	2010	China	Randomized clinical trial	2007.7-2009.9	4 m- 8 y	Controlled ventilation (n=126); Spontaneous ventilation groups(n=114)	Scopolamine(0.01 mg/ kg)	CV: propofol (2 mg / kg), fentanyl (3-5μg/ kg), vecuronium(0.1mg / kg); SV: propofol (2mg / kg), ketamine (2mg / kg), fentanyl (1 -1.5g/kg anesthesia, 1% lidocaine (3-5mg / kg) spray	no	CV: control ventilation SV: spontaneous ventilation	Hypoxia, breath-holding, cough, bronchospasm, intraoperative hemodynamics changes, operation time, anesthesia recovery time,	RCT