**eTable 1: randomized controlled trials comparing different sedation methods for elective fibreoptic tracheal intubation in the operative room for anticipated difficult airway. The thick horizontal lines separate similar comparisons.**

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| **First Author (ref)** | **Intervention** | **Comparator (and second comparator if any)** | **N. patients intervention** | **N. patients comparator *(n. patients second comparator if any)*** | **Premedication** | **Local anesthesia** | **Success rate intervention** | **Success rate comparator *(success rate second comparator)*** | **N. severe adverse events intervention** | **N. severe adverse events comparator** | **Main findings and statistically significant differences** |
| Bergese SD26 | dexmedetomidine 1mcg/kg + 0.7mcg/kg/h (rescue midazolam) | saline (rescue midazolam) | 55 | 50 | glycopyrrolate | lidocaine, any administration, including nerve blocks | 100% | 100% | 0 | 0 | no difference in ease of intubation, hemodynamic stability, patient cooperation and recall, but in the placebo group more patients required midazolam, fentanyl and propofol |
| Hassan ME27 | dexmedetomidine 1mcg/kg | dexmedetomidine 2mcg/kg (dexmedetomidine 1mcg/kg+and fentanyl 1mcg/kg)) | 50 | 50 (50) | metoclopramide 10mg+ ranitidine 50 mg+ atropine 0.3 mg | oximetazoline + lidocaine 2%+ adrenaline + lidocaine 2%nebulizer | 100% | 100% (100%) | 0 | 0 (0) | no difference in patient recall, incidence of airway obstruction and closing of vocal cords. More limb movements in the low dose Dex group |
| Sharma J28 | dexmedetomidine 0.5mcg/kg | dexmedetomidine 1mcg/kg | 30 | 30 | glicopyrrolate 0.2mg+ midazolam 0.05mg/kg/ev, ondansetron 4mg, ranitidine 50 mg | lidocaine 10%puffs tongue and oropfarynx | 100% | 100% | 0 | 0 | patients in the high dose group more profoundly sedated, but intubation time, tolerance, vocal cords and limbs movement, and satisfaction score did not differ; no differences in haemodynamics |
| Tsai CJ29 | dexmedetomidine 1mcg/kg | TCI propofol, initial target 3mcg/ml | 20 | 20 | none | cocaine 6% for nasal canals and lidocaine 10% for thongue and hypopharinx and lidocaine 2% for glottis and vocal cords | 100% | 100% | 0 | 1 | intubation scores and final patient satisfaction not different. The Dex group had a lower incidence of vocal cords closure and airway obstruction, better patient comfort scores, but a higher incidence of recall |
| Gupta K30 | dexmedetomidine 1mcg/kg + propofol (dosage not reported) | propofol (dosage not reported) | 23 | 23 | metoclopramide 10 mg + glicopyrrolate 0.2 mg | xylometazoline + lidocaine 4% + adrenaline | 100% | 100% | 0 | 0 | in the Dex group, sedation was reached with less time (but the total intubation time was similar) and less propofol, the procedure was easier and better tolerated, and airway obstruction less frequent |
| Chalam KS31 | dexmedetomidine1mcg/kg + 0.5mcg/kg/h | propofol 1mg/kg | 50 | 50 | diazepam 10 mg + ranitidine 150 mg + glicopyrrolate 0.2 mg kg/ev | lidocaine 2% + adrenaline+ recurrent translaringeal nerve block with transtracheal injection 2% lidocaine | 100% | 100% | 0 | 0 | no difference in oxygenation during the procedure. In the Dex group heart rate, systolic and diastolic blood pressure were lower, and respiratory rate higher; in the same Dex group, patients’ sedation and discomfort scores, endoscopy and intubation scores were better (but without differences in post intubation conditions) |
| Hu R32 | dexmedetomidine 1.5mcg/kg, then 0.7 mcg/kg/h | TCI remifentanil, initial target 3 ng/m | 20 | 20 | none | ephedrine, nitrofurazone, lidocaine 7% | 100% | 100% | 2 (bradycardia) | 2 (oxygen desaturation) | no differences in intubation and post intubation scores. The Dex group had better endoscopy and patient satisfaction scores, less recall and higher oxygen saturation at the end of the procedure, but a higher incidence of cough and longer duration of procedure |
| Liu HH33 | dexmedetomidine 1mcg/kg + 0.3 mcg/kg/h | remifentanil 0.75mcg/kg + 0.1 mcg/kg/min | 45 | 45 | 0.1 mg phenobarbital + 0.5mg atropine | lidocaine 2% from mouth to glottis and below vocal cords | 100% | 100% | 0 | 0 | no difference in need of rescue propofol infusion, intubation scores, duration, hemodynamic and oxygenation. Recall more common in the remifentanil group |
| Shen SL34 | dexmedetomidine 1mcg/kg/10min | TCI sufentanyl, initial target 3ng/m | 20 | 20 | none | lidocaine 2% nasal and oral and glottis | 100% | 100% | not reported | not reported | Dex group showed more favourable vocal cords and limbs movements, cough, patient tolerance and satisfaction scores, a shorter duration of the procedure, and a lower incidence of hypertension and respiratory depression (but a higher incidence of bradycardia) |
| Li CW35 | dexmedetomidine 0.5mcg/kg+ midazolam 0.25mcg/kg/h | sufentanyl-midazolam | 25 | 25 | midazolam 0.02 mg/kg | tetracaine 1% for nostrils, + lidocaine spray as you go | 100% | 100% | 0 | 0 | easiness of the procedure, patient reactions, satisfaction and recall, hemodynamic and oxygenation were not different. In Dex group, sedation level was deeper, BIS index was lower and post intubation end tidal CO2 were lower |
| Chu KS36 | dexmedetomidine 1mcg/kg | fentanyl 1mcg/kg | 16 | 14 | none | lidocaine 10% spray and cocaine 6% | 100% | 100% | 0 | 0 | no difference in blood pressure values and oxygenation. In Dex group, intubation score, patient satisfaction and amnesia were better, and heart rate was lower |
| Sayeed T37 | dexmedetomidine 1mcg/kg | fentanyl 1mcg/kg + midazolam 1 mg | 16 | 16 | none | oxymetazoline 0.05% nostril, lidocaine for oropharynx and nostrils, lidocaine 2% for trachea | 100% | 100% | 0 | 0 | no difference in patient comfort during and after the procedure, in its length, in oxygenation, in the ease of FOB; on the contrary, the ease of intubation and diastolic blood pressure were better in the Dex group. Recall was more common with Dex. |
| Agrawal A38 | dexmedetomidine 1mcg/kg + propofol (dosage not reported) | fentanyl 1mcg/kg + midazolam 1 mg | 30 | 30 | glycopyrrolate0.2mg | xylometazoline + lidocaine 4% | 100% | 100% | 0 | 0 | Comfort scores during FOB and intubation not different, no difference in the ease of the procedure. Respiratory rate and oxygenation higher in Dex group |
| Yousuf A39 | dexmedetomidine 1mcg/kg | fentanyl 2mcg/kg + midazolam 0.02mg/kg | 30 | 39 | ranitidine 150mg + ondansetron 4 mg | spray of 10% lido + nebulization lido 2% 80mg | 100% | 100% | 0 | 0 | In Dex group, blood pressure and heart rate remained more stable and oxygenation at intubation was better. Sedation scores were similar, but the Dex group showed better cough score and post intubation conditions |
| Zhang X40 | TCI remifentanil, initial target 3ng/ml | TCI propofol, initial target 2mcg/ml | 18 | 18 | none | intranasal lidocaine 2% | 100% | 94% (1 failure due to glottic closure and respiratory depression) | 0 | 0 | No difference in hemodynamic and oxygenation, and in the need to increment dosage. In the propofol group, the sedation was deeper, and the vocal cords more often closed. Patient satisfaction was similar, but recall was more common with remifentanil. Alternative intubation technique applied in the failure case: not reported |
| Lallo A41 | TCI remifentanil, initial target 1,5ng/ml | TCI propofol, initial target 2,5mcg/ml | 30 | 30 | hydroxyzine 1-1.5mg/kg | lidocaine 5% and naphazoline 2%, lidocaine spray and lidocaine trough fiberscope channel | 97% (1 failure due to panic) | 97% (1 failure due to glottic closure and respiratory depression) | 0 | 0 | no difference in oxygenation, duration, dosage increments required and final pain score. Vocal cords opening was better in remifentanil group, but sedation was lighter and recall more common. Alternative intubation technique applied in the failure cases: change of sedative remifentanil case), manual mask ventilation (propofol case) |
| Rai MR42 | TCI remifentanil, initial target 3ng/ml | TCI propofol, initial target 1mcg/ml | 14 | 10 | glycopirrolate 0.2mg + midazolam (70 kg, 1 mg; 70–130 kg, 1.5 mg; .130 kg, 2 mg) | cocaine 100mg nasally, lidocaine 200mg oropharynx via atomizer + lidocaine 4% vocal cords | 100% | 100% | 0 | 0 | No difference in sedation scores, but endoscopy more difficult and requiring more time in the propofol group. Patient tolerance was better in the remifentanil group, but recall was more common |
| Machata AM43 | remifentanil 0.75mcg/kg + 0,075mcg/kg/min | remifentanil 1.5mcg/kg + 0,15 mcg/kg/min | 10 | 12 | midazolam 0.05mg/kg + glycopyrrolate 0.2mg | lidocaine 2% and oxymetazoline for nostrils | 100% | 100% | 0 | 0 | no difference in hemodynamic, oxygenation and discomfort. In the high dose group, sedation was deeper, end tidal CO2 higher and recall less common |
| Yeganeh N44 | TCI remifentanil, initial target 0.8ng/ml | remifentanil 0.75mcg/kg + 0,075mcg/kg/min | 11 | 11 | scopolamine 20 mg + midazolam 0.03mg/kg ev, 10' before procedure | lidocaine 10% nasal mucosa | 100% | 100% | 0 | 0 | no difference in hemodynamic, oxygenation, intubation conditions, duration. Recall was more common in the manual group, despite similar mean infusion rates |
| Puchner W45 | remifentanil 0.1mcg/kg/min | fentanest 1.5 mcg/kg + midazolam 1-10 mg | 37 | 37 | midazolam oral 15 mg<50aa, 7.5mg>50 | xilometazoline and 4% lidocaine+ lidocaine 4% supra and subglottic | 100% | 97% ( 1 failure due to intolerance) | 0 | 0 | no difference in oxygenation and ease of intubation. Duration was shorter in the remifentanil group, with reduced blood pressure increments and reduced patient reactivity, but recall was more common. Alternative intubation technique applied in the failure case: not reported |
| Pean D46 | TCI propofol, initial target 6mcg/ml | sevoflurane 8% | 38 | 35 | none | lidocaine 5% aerosol | 97% (1 failure) | 90% (4 failure) | 1 (hypoxemia) | 1 (hypoxemia) | no difference in hemodynamic, oxygenation, technical difficulty, patient recall and satisfaction. In the sevoflurane group, induction and procedure duration were shorter. Alternative intubation technique applied in the failure case: trans-tracheal jet ventilation (2 cases, including the propofol one), patient awakening (2 cases), retrograde intubation (one patient) |
| Robba C47 | TCI propofol, initial target 3,5mcg/ml | sevoflurane 8% | 36 | 36 | none | lidocaine 2% topically | 100% | 100% | 0 | 0 | Oxygenation, duration and intubation conditions were similar. In the propofol group apnea, hypotension and low cardiac output were more common |
| Schaeuble J48 | etomidate 0.2mg/kg (+ fentanyl, dosage not reported) | propofol 2mg/kg (+ fentanyl, dosage not reported) | 25 | 14 | none | cocaine 10% nasal drops+ transcricoid injection 1/lidocaine for larynx and proximal trachea | 100% | 100% | 0 | 0 | no difference in oxygenation, hemodynamic, lowest BIS. The etomidate group recovered spontaneous breathing earlier. |

BIS: bispectral index; Dex: dexmedetomidine; FOB: fibeoptic bronchoscopy; TCI: target controlled infusion