

Dexmedetomidine - a superior sedative agent for patients undergoing awake fiberoptic intubation?

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Dear Editor,

Dexmedetomidine is a selective alpha₂-adrenergic agonist with sedative, anxiolytic, and modest analgesic effects. In doses used for sedation, dexmedetomidine is thought to have fewer respiratory depressant effects than other sedatives¹. The onset of action of dexmedetomidine is relatively slow compared with other sedatives. Clinical effects are often not seen until approximately fifteen minutes after the start of a loading dose and recovery from an infusion is variable². Dexmedetomidine has several desirable pharmacologic properties including sedation, anxiolysis, hypnosis, analgesia, amnesia, anti-sialagogue effects, and a unique respiratory-sparing effect³.

We propose that dexmedetomidine warrants consideration as the “gold standard” choice of sedative agent in awake fiberoptic intubation (AFOI). Other available conventional sedative agents, such as benzodiazepines, opioids and propofol cause respiratory depression, especially when used in high doses. The minimal respiratory depressant effects of dexmedetomidine confers an advantage in handling a critical and unstable difficult airway whilst inducing sedation.

We describe eight patients who underwent oral and maxillofacial surgery who required an AFOI, and in whom sedation was provided using a dexmedetomidine infusion. To ensure successful sedation, each patient was brought to the anaesthetic induction room early to allow sufficient time for the loading dose of 1.5microgram/kilogram/hour (lean body weight) to infuse over at least twenty minutes, followed by a continuous infusion of 1microgram/kilogram/hour, until successful tracheal intubation was confirmed. A moderate level of sedation was attained without causing respiratory depression or haemodynamic instability, and co-administration of topical anaesthesia allowed acceptable conditions for intubation. No airway obstruction, hypoxaemia, cardiovascular adverse events or significant delays in intubation time were observed, and adequate levels of patient comfort and satisfaction were achieved.

We support the use of dexmedetomidine as an alternative or primary choice for AFOI and we continue to reap the benefits of its use for procedural sedation in our department. We propose that dexmedetomidine warrants consideration as the superior sedative agent in the Difficult Airway Society guidelines for awake tracheal intubation⁴.

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References:

1. Hsu YW, Cortinez LI, Robertson KM, Keifer JC, Sum-Ping ST, Moretti EW, et al. Dexmedetomidine pharmacodynamics: part I: crossover comparison of the respiratory effects of dexmedetomidine and remifentanyl in healthy volunteers. *Anesthesiology*. 2004;101(5):1066-76.
2. Arain SR, Ebert TJ. The efficacy, side effects, and recovery characteristics of dexmedetomidine versus propofol when used for intraoperative sedation. *Anesth Analg*. 2002;95(2):461-6, table of contents.
3. Abdelmalak B, Makary L, Hoban J, Doyle DJ. Dexmedetomidine as sole sedative for awake intubation in management of the critical airway. *J Clin Anesth*. 2007;19(5):370-3.
4. Ahmad I, El-Boghdady K, Bhagrath R, Hodzovic I, McNarry AF, Mir F, et al. Difficult Airway Society guidelines for awake tracheal intubation (ATI) in adults. *Anaesthesia*. 2020;75(4):509-28.