

Is dexmedetomidine or remifentanyl alone an optimal sedation scheme for awake intubation?

Jia Qiang Zhang · Fan Min Meng ·
Fu Shan Xue

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To the Editor:

In a double-blind randomized controlled clinical trial comparing dexmedetomidine and remifentanyl sedation for awake fiberoptic nasotracheal intubation, Hu et al. [1] showed that both drugs were effective. Moreover, compared with remifentanyl, dexmedetomidine produced better endoscopy scores, lower incidence of recall, greater patient satisfaction, and fewer hemodynamic effects. They should be applauded for their efforts to provide useful evidence regarding dexmedetomidine and remifentanyl sedation for awake airway management. However, in preparing the patient for awake intubation, the optimal sedation regimen would provide comfort and sedation as well as prevention from negative recall of the procedure. Furthermore, it should ensure good airway reflex suppression under sufficient spontaneous ventilation, hemodynamic stability, and adequate intubating conditions [2]. Based on the findings of this study, we are not sure that some of above targets have

been well achieved. First, coughing during awake intubation occurred in 50 % of patients in the dexmedetomidine group and 15 % of patients in the remifentanyl group, respectively. It is generally believed that during awake intubation, coughing is frequently reported as one of the most distressing symptoms and described as an undesirable feature [3]. Second, 30–40 % of patients in the dexmedetomidine group and 65–70 % of patients in the remifentanyl group had recall for airway procedure events. Such high incidences of recall would put patients at a risk of postoperative psychological morbidity, such as anxiety, depression, posttraumatic stress disorder, cognitive impairment, etc.

A main limitation of this study design is the use of a single agent to provide sedation. Actually, none of the drugs currently in use can meet all criteria of the optimal sedation regimen for awake intubation, although many of them have some of the desirable characteristics. For example, opioids can provide analgesia and help blunt airway reflexes, but use of opioids alone fails to provide amnesia [4]. Benzodiazepines have no analgesic effect, but are useful for providing good amnesia, even if the procedure itself appears to be painful. Thus, it is generally recommended that an optimal sedation regimen for awake intubation requires the use of a combination of sedatives, analgesics, and antipsychotic agents [4]. For example, midazolam and propofol, are common agents used for sedation, often with an opioid drug such as fentanyl or remifentanyl. It must be pointed out that in a review of four studies, including 443 cases of awake intubation, even if various combinations of sedatives and analgesics are utilized, 17 % of patients still have partial recall and 6 % have recall with unpleasant memories [4].

Dexmedetomidine is a highly selective α_2 -agonist with anxiolysis and some analgesia without respiratory depression.

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J. Q. Zhang · F. M. Meng
Department of Anesthesiology, Henan Provincial People's
Hospital of Zhengzhou University, 450003 Zhengzhou,
People's Republic of China

F. S. Xue (✉)
Department of Anesthesiology, Plastic Surgery Hospital,
Chinese Academy of Medical Sciences and Peking Union
Medical College, 33 Ba-Da-Chu Road, Shi-Jing-Shan District,
100144 Beijing, People's Republic of China
e-mail: fruitxue@yahoo.com.cn

Moreover, this study showed the potential advantages of dexmedetomidine for sedation in the patients undergoing awake intubation. However, dexmedetomidine has no amnestic effect [5] and is substantially more expensive than other sedatives and analgesics, such as propofol, midazolam and fentanyl. Thus, theoretical advantages of dexmedetomidine combined with an amnestic drug are obvious for sedation management in the patients receiving awake intubation. An analysis of cost-effectiveness is also necessary.

Conflict of interest All authors have no financial support and potential conflicts of interest for this work.

References

1. Hu R, Liu JX, Jiang H. Dexmedetomidine versus remifentanyl sedation during awake fiberoptic nasotracheal intubation: a double-blinded randomized controlled trial. *J Anesth*. 2012. doi:[10.1007/s00540-012-1499-y](https://doi.org/10.1007/s00540-012-1499-y).
 2. Machata AM, Gonano C, Holzer A, Andel D, Spiss CK, Zimpfer M, Illievich UM. Awake nasotracheal fiberoptic intubation: patient comfort, intubating conditions, and hemodynamic stability during conscious sedation with remifentanyl. *Anesth Analg*. 2003;97:904–8.
 3. Xu YC, Xue FS, Luo MP, Yang QY, Liao X, Liu Y, Zhang YM. The median effective dose of remifentanyl for awake laryngoscopy and intubation. *Chin Med J*. 2009;122:1507–12.
 4. Sanchez A, Iyer RR, Morrison DE. Preparation of the patient for awake intubation. In: Hagberg CA, editor. *Airway management*. 2nd ed. St. Louis: Mosby-Year Book Inc; 2007. p. 256–60.
 5. Belleville JP, Ward DS, Bloor BC, Maze M. Effects of intravenous dexmedetomidine in humans: I, sedation, ventilation, and metabolic rate. *Anesthesiology*. 1992;77:1125–33.
1. Hu R, Liu JX, Jiang H. Dexmedetomidine versus remifentanyl sedation during awake fiberoptic nasotracheal intubation: a double-