

INFOGRAPHICS IN ANESTHESIOLOGY

Complex Information for Anesthesiologists Presented Quickly and Clearly

Safe Sedation Re-examined Comparing the Respiratory Effects of Dexmedetomidine and Propofol

Sedatives depress ventilation¹ via...



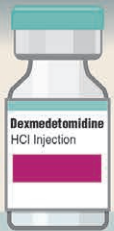
Reduction of upper airway muscle tone



Inhibition of chemosensory pathways



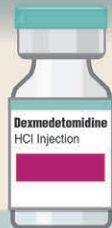
Loss of cortical wakefulness



Early work with dexmedetomidine² found minimal changes to respiration when used for moderate levels of sedation via continuous infusion without a bolus.



A recent systematic review compared dexmedetomidine to propofol for drug-induced sedation endoscopy³...



Dexmedetomidine was said to cause less upper airway obstruction than propofol, but the level of sedation was seldom assessed.

In this issue, Lodenius *et al.*⁴ evaluated dexmedetomidine and propofol under similar levels of sedation...

Light to moderate sedation with dexmedetomidine does not offer any protection from central apnea and airway obstruction over propofol.

- No difference in airway collapsibility
- Central apnea observed with both agents when boluses are given

Infographic created by Jonathan P. Wanderer, Vanderbilt University Medical Center, and James P. Rathmell, Brigham and Women's Health Care/Harvard Medical School. Illustration by Annemarie Johnson, Vivo Visuals. Address correspondence to Dr. Wanderer: jonathan.p.wanderer@vanderbilt.edu.

1. Ward DS, Karan SB: Dexmedetomidine and the upper airway: Not as simple as we hoped. *ANESTHESIOLOGY* 2019; 131:953–4
2. Ebert TJ, Hall JE, Barney JA, Uhrich TD, Colino MD: The effects of increasing plasma concentrations of dexmedetomidine in humans. *ANESTHESIOLOGY* 2000; 93:382–94
3. Chang ET, Certai V, Song SA, Zaghi S, Carrasco-Llatas, Torre C, Capasso R, Camacho M: Dexmedetomidine versus propofol during drug-induced sleep endoscopy and sedation: A systematic review. *Sleep Breath* 2017; 21:727–35
4. Lodenius A, Maddison KJ, Lawther BK, Scheinin M, Eriksson LI, Eastwood PR, Hillman DR, Fagerlund MJ, Walsh JH: Upper airway collapsibility during dexmedetomidine and propofol sedation in healthy volunteers: A nonblinded randomized crossover study. *ANESTHESIOLOGY* 2019; 131:962–73