

# Propofol Sedation for Colonoscopy in Middle Eastern Countries

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Colonoscopy is typically performed with sedation. Intravenous benzodiazepines with or without opioids have long been used to induce sedation for both colonoscopy and more complex endoscopic procedures. In recent years, we have observed a rapid transformation from the use of opioids and benzodiazepines to sedation with propofol in Western countries.<sup>1</sup> However, most endoscopy centers in the Middle East still use traditional sedation with opioids and benzodiazepines for endoscopy.

The safety, feasibility and effectiveness of propofol sedation for endoscopic procedures have been well studied in Western countries.<sup>2-6</sup>

In this issue of "Middle East Journal of Digestive Diseases", Ghadir MR and colleagues investigated the role of propofol to induce deep sedation in an endoscopy center in Iran.<sup>7</sup>

In this uncontrolled study, the authors induced sedation with propofol for colonoscopy in 125 patients. Of these, 5.6% developed hypoxemia during colonoscopy. All hypoxemia episodes were successfully controlled by administration of nasal oxygen without the need for mechanical ventilation.

This study provides evidence for the feasibility of propofol sedation in Middle Eastern countries. However, several issues merit consideration. Since this was an uncontrolled study, therefore the safety, feasibility and effectiveness of propofol sedation in Middle Eastern countries should be compared to conventional sedation with benzodiazepines and opioids.

Another limitation of this study was that the investigators mainly focused on the side effects of propofol. They did not evaluate the onset of action of propofol, recovery time, patient cooperation (as rated by the endoscopist) or patient satisfaction (as rated by the patient following the procedure).

Another point is that in the current study, propofol alone was used for induction of sedation. Previous studies have shown that the combination of propofol with benzodiazepines or opioids allows for a dose reduction of propofol. Some, but not all of these studies, have shown that the combination of propofol with other sedatives may shorten recovery time.<sup>1,8,9</sup>

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Received: 10 Dec. 2010  
Accepted: 20 Feb. 2011

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In this study, propofol was administered by an anesthesiologist which significantly increases the cost of the procedure. There have been several studies from Western countries that demonstrate the feasibility of non-anesthesiologist administration of propofol for endoscopic procedures.<sup>10-12</sup> In Iran, future studies on the feasibility and safety of nurse-administered propofol for endoscopic procedures should be evaluated.

Experiences from the Western world have shown the superiority of propofol-based sedation compared to traditional sedation in terms of post-procedure patient satisfaction, time to sedation and recovery time.<sup>8,13-15</sup>

Therefore, there is a need to expand the use of propofol for colonoscopy and more complex endoscopic procedures (i.e., EUS, ERCP) in Iranian endoscopy centers. Future studies should focus on the feasibility of nurse-administered propofol. Clearly, nurses need to take appropriate theoretical and practical training to become qualified to administer propofol.<sup>8</sup>

### KEY WORDS

Propofol; Colonoscopy; Sedation; Middle East

### CONFLICT OF INTEREST

The author declares no conflict of interest related to this work.

### REFERENCES

1. VanNatta ME, Rex DK. Propofol alone titrated to deep sedation versus propofol in combination with opioids and/or benzodiazepines and titrated to moderate sedation for colonoscopy. *Am J Gastroenterol* 2006;**101**:2209-17.
2. Roseveare C, Seavell C, Patel P, Criswell J, Kimble J, Jones C, et al. Patient-controlled sedation and analgesia, using propofol and alfentanil, during colonoscopy: a prospective randomized controlled trial. *Endoscopy* 1998;**30**:768-73.
3. Külling D, Fantin AC, Biro P, Bauerfeind P, Fried M. Safer colonoscopy with patient-controlled analgesia and sedation with propofol and alfentanil. *Gastrointest Endosc* 2001;**54**:1-7.
4. Bhardwaj G, Conlon S, Bowles J, Baralt J. Use of midazolam and propofol during colonoscopy: 7 years of experience. *Am J Gastroenterol* 2002;**97**:495-7.
5. Sipe BW, Rex DK, Latinovich D, Overley C, Kinser K, Bratcher L, et al. Propofol versus midazolam/meperidine for outpatient colonoscopy: administration by nurses supervised by endoscopists. *Gastrointest Endosc* 2002;**55**:815-25.
6. Paspatis GA, Manolaraki M, Xirouchakis G, Papanikolaou N, Chlouverakis G, Gritzali A. Synergistic sedation with midazolam and propofol versus midazolam and pethidine in colonoscopies: a prospective, randomized study. *Am J Gastroenterol* 2002;**97**:1963-7.
7. Ghadir MR, Pishvaei MH, Shafaghi A, Joukar F, Khatib F, Mansour-Ghanaei F. Assessment of Propofol usefulness as an anesthetic agent during colonoscopy. *Middle East J Dig Dis* 2011;**3**:3-4.
8. Dumonceau JM, Riphaus A, Aparicio JR, Beilenhoff U, Knape JT, Ortmann M, et al. European Society of Gastrointestinal Endoscopy, European Society of Gastroenterology and Endoscopy Nurses and Associates, and the European Society of Anaesthesiology Guideline: Non-anesthesiologist administration of propofol for GI endoscopy. *Eur J Anaesthesiol* 2010;**27**:1016-30.
9. Fanti L, Agostoni M, Arcidiacono PG, Albertin A, Strini G, Carrara S, et al. Target-controlled infusion during monitored anesthesia care in patients undergoing EUS: propofol alone versus midazolam plus propofol. A prospective doubleblind randomised controlled trial. *Dig Liver Dis* 2007;**39**:81-6.
10. Rex DK, Heuss LT, Walker JA, Qi R. Trained registered nurses/endoscopy teams can administer propofol safely for endoscopy. *Gastroenterology* 2005;**129**:1384-91.
11. Fatima H, Dewitt J, Leblanc J, Sherman S, McCreevy K, Imperiale TF. Nurse-administered propofol sedation for upper endoscopic ultrasonography. *Am J Gastroenterol* 2008;**103**:1649-56.
12. Tohda G, Higashi S, Wakahara S, Morikawa M, Sakumoto H, Kane T. Propofol sedation during endoscopic procedures: safe and effective administration by registered nurses supervised by endoscopists. *Endoscopy* 2006;**38**:360-7.
13. McQuaid KR, Laine L. A systematic review and meta-analysis of randomized, controlled trials of moderate sedation for routine endoscopic procedures. *Gastrointest Endosc* 2008;**67**:910-3.
14. Dewitt J, McGreevy K, Sherman S, Imperiale TF. Nurse-administered propofol sedation compared with midazolam and meperidine for EUS: a prospective, randomized trial. *Gastrointest Endosc* 2008;**68**:499-509.
15. Jung M, Hofmann C, Kiesslich R, Brackertz A. Improved sedation in diagnostic and therapeutic ERCP: propofol is an alternative to midazolam. *Endoscopy* 2000;**32**:233-8.