Question of the Week #32
Scope of practice/medication administration

You work in a gastroenterology clinic in a freestanding outpatient surgery center. You enjoy monitoring patients during cases which utilize moderate sedation/analgesia and take great pride in maintaining their comfort. Because of your expertise, the staff, doctors, and clinic manager all look to you for guidance when issues come up related to safe patient care related to moderate sedation anesthesia.

One of the surgeons, Dr. C., has requested that propofol (Diprivan) be used for her patients undergoing colonoscopies, a procedure that utilizes nurse-administered sedation. You tell her that you will have to do some homework, as there is no policy in place related to the administration of this drug. Dr. C. says, “I can’t believe you don’t know about this drug. I use it all the time at Hospital XYZ, and the patients love it. If you don’t want to give it, I will.”

What do you need to know and do concerning this drug to safely care for your patients?

Response:

The controversy surrounding propofol is fueled by discussions undertaken by numerous physician groups, including anesthesiologists, gastroenterologists, and emergency department physicians who would like to see its continued use in their respective departments-and not necessarily with input or oversight from the other specialties (see references and resources following this discussion). Anesthesiologists routinely use propofol as an induction agent for general anesthesia or as a sedative during monitored anesthesia care (MAC). The administration of propofol by an anesthesia care provider is most closely aligned with the directives outlined in the drug circular, which state that the use of this drug should be restricted to persons trained in the administration of general anesthesia (Regula, 2008). In most jurisdictions package inserts are admissible as evidence in a court of law (Cohen et al, 2007); if a patient has an adverse outcome that can be traced to administration and/or management of the drug, a nonanesthesiologist involved with the case may find him- or herself in a unique and potentially undesirable medicolegal predicament.

Propofol is listed as a sedative and a general anesthetic agent (epocrates.com). Its rapid onset, short action, and anxiolytic properties make it ideal for use during brief cases in the ED and GI lab where rapid recovery of patient motor and cognitive functions is especially desirable. In an ideal world, an anesthesia care provider would be available for all cases in which propofol is given; the reality is that there are not enough anesthesiologists to meet the need, and the cost for anesthesia services would make routine screening procedures such as colonoscopies prohibitive. Physicians in both GI and emergency departments feel that the drug can be used safely and cost effectively with the assistance of registered nurses who have received specialized training in the administration and monitoring of this drug. It should be noted that any cost savings in circumventing the services of anesthesia care providers needs to be weighed against the cost of handling any complications which may occur. Appropriate patient selection for nonanesthesiologist-administered propofol is pivotal (Cote, 2011, p. 773) and probably accounts in no small part for the high success rate for safe administration of this drug. The time to identify patient-or procedure-specific risk factors is before, not during, the procedure.

The issue is not if propofol a safe drug, but does the facility have the infrastructure in place to support its safe use. This includes first aligning policies on drug administration to state boards of nursing’s scope
of practice. Many states have adopted the stance that propofol is a general anesthetic agent and have restricted its use to anesthesia care providers. State board regulations always trump facility guidelines; our nurse should be checking with her state board of nursing before moving forward with nurse administered propofol sedation (NAPS).

Giving the drug is only part of the equation; whoever is monitoring the patient (who should not be the same person doing the procedure) must be knowledgeable about the action of the drug and be able to intervene in the event of a complication. Sedation ranges on a continuum from minimal sedation, in which airway, spontaneous ventilation, cardiovascular status, and responsiveness are unchanged to general anesthesia. It is not always possible to predict the targeted level of sedation, meaning that whoever is responsible for monitoring the patient must be able to manage a level deeper than what was intended (The Joint Commission, 2012). Since propofol has minimal to no analgesic properties, if used alone the target level is typically deep sedation. To avoid the increased risk for respiratory depression and cardiac instability related to higher doses of propofol, fentanyl and/or midazolam may be added. The synergistic properties of these drugs must be taken into account when titrating dosages.

The most frequent adverse events associated with propofol are hypoxia and hypotension. This means that the person monitoring the patient must have airway management skills, ranging from repositioning the airway to insertion of an oral airway to positive pressure ventilation, as well as being prepared to give an IV fluid bolus to support the cardiovascular system. Unlike the benzodiazepines and narcotics, propofol has no reversal agent. Although the negative effects wear off quickly (duration of the drug is typically 4-8 minutes), the patient’s respiratory and/or cardiovascular status must be supported during this time. The patient’s reaction to the procedure and the drugs used must be taken into account during the recovery process. Although one of the benefits of propofol is a rapid recovery, patients must still meet established criteria for discharge.

As registered nurses take over responsibilities formerly held by anesthesia care providers, formalized education and training becomes a requirement. No nurse should allow herself to be put into a position where she is performing outside a competent level of practice. “Winging it” based on physician pressure or inexperience is not a suitable substitute for safe patient care supported by best practices. The Joint Commission requires that “individuals administering moderate or deep sedation and anesthesia are qualified and have the appropriate credentials to manage patients at whatever level of sedation or anesthesia is achieved, either intentionally or unintentionally” (JC, 2012, PC-25). Prior to implementing a NAPS program, a formal education and training program is supported by both anesthesiologists (ASA, 2002) and gastroenterologists (AGA, 2009), and should be a requirement of any facility utilizing NAPS. Simulated training and a preceptorship are highly encouraged as part of the education program. The number of precepted cases necessary to demonstrate competent practice has yet to be determined.

Propofol is not the last drug which will be developed for sedation, nor will it potentially be the most controversial. Already, such drugs as fospropofol (Lusedra) and dexmedetomidine (Preceptex) hold promise as the next generation of sedatives (Pambianco, 2008; Rossi & Candiotti, 2009). It is certain that nurses will continue to be at the center of the controversy in who administers these drugs and monitors these patients. Advances in equipment to monitor patients will require acquisition of new skills in order to utilize them to their fullest potential. For instance, capnography may replace pulse oximetry as a standard of care in monitoring patients undergoing deep sedation (Green, 2007). Computerized assisted personalized sedation, which uses feedback data from pulse oximetry, ECG, and blood pressure readings in conjunction with patient responses to verbal and tactile stimuli, calculates and dispenses the correct dose of propofol. It should be emphasized that no one piece of monitoring equipment negates the need for constant visual assessment of the patient.
Careful patient selection, knowledge of the pharmacodynamics of drugs administered, appropriate monitoring to assess individual patient responses, rapid detection and treatment of potential or actual adverse events, and following appropriate discharge criteria is the responsibility of whoever is giving the drug, whether it is an anesthesia care provider or a registered nurse.

References and resources


