

## Is procedural sedation safe by non-anesthesiologists?

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To the Editor:

Procedural sedation is a “state of sedation with a minimal depression of consciousness where the patient can tolerate unpleasant procedures but can maintain spontaneous respiration and airway-protective reflexes” [1]. In their recently published article in the *Journal of Anesthesia* (October 2012) that compared procedural sedation and general anesthesia, Hong and colleagues reported very serious findings on the use of procedural sedation by non-anesthesiologist sedation providers and their outcomes [2].

In this study, procedural sedation was provided by non-anesthesiologists in 88 % of the cases, with propofol being the sedating agent used in 84 % of cases, either alone or in combination. There was a complete lack of pre-procedural testing in 76 % of the cases. Five patients (20 %) did not receive any monitoring, and only 48 % received pulse oximetry monitoring during the procedure. Of the patients who underwent procedural sedation, 72 % died, with the most common cause of death being a respiratory event (72 % of cases). Hypoxia due to airway obstruction or respiratory depression and the inability to intubate and ventilate were the major reasons for respiratory events in those patients who underwent procedural sedation.

These results are an eye-opener for the scientific community and further emphasize the importance of stricter guidelines for providing procedural sedation by non-anesthesiologists. The American College of Emergency Physicians recommends that individuals “providing procedural sedation and analgesia must have an understanding of the

drugs administered, the ability to monitor the patient’s response to the medications given, and the skills necessary to intervene in managing all potential complications” [3]. Pre-procedural assessment and continuous monitoring of individuals undergoing procedural sedation is highly recommended [1, 3].

In another recent study, McGrane et al. reported a 4.7 % incidence of adverse events among patients who underwent procedural sedation with propofol [4]. These authors showed that the disciplined use of propofol by emergency physicians is safe and can be a viable option for procedural sedation [4]. However, further research is required to substantiate this evidence in the wake of revised administrative guidelines which have questioned the ability of emergency physicians to safely use propofol for procedural sedation [5].

The major reasons for such a high mortality and adverse events in the study by Hong et al. [2] could be the undisciplined use of propofol and the lack of knowledge on the part of sedation providers to anticipate impending respiratory events. Overall, propofol is a “safe but highly potent sedative agent and small alterations in serum concentration can cause swings in levels of consciousness and also produce cumulative sedation” [1]. Thus, an understanding of the pharmacological properties of propofol and the ability to monitor, intervene, and resuscitate if needed when complications do arise are a must for non-anesthesiologist sedation providers performing procedural sedation [1].

The study of Hong et al. [2] provides important evidence on the lack of knowledge and ability of sedation providers for procedural sedation and reiterates the importance of stricter guidelines for procedural sedation by non-anesthesiologists. Although this study is severely limited by selection bias, the evidence presented cannot be ignored.

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