

# Should the Gastroenterologist or the Anesthesiologist administer deep sedation for endoscopy? An Anesthesiologist's point of view

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## Abstract

Deep sedation for gastrointestinal endoscopy is a desirable strategy for enhancing patients' tolerance to procedures and for making those procedures easier to perform by endoscopists. Sedation for endoscopy administered by medical and paramedical personnel who have no training in anesthesiology, advanced resuscitation and vital support techniques has been widely debated. It is the object of studies and consensus. In general, the relative risk figures are low, but the absolute numbers might be judged high if we take into account the great number of procedures that take place on a daily basis throughout the world. The main focus of this discussion should be on the patient's safety. In this regard there are many solid arguments for stating that the anesthesiologist should administer deep sedation in endoscopy.

## Key words

Deep sedation, propofol, endoscopy.

The performance of endoscopic procedures in gastroenterology covers a wide range of diagnostic and therapeutic interventions of short and long term duration. Patients may experience varying levels of pain intensity, and the patients themselves vary over a broad spectrum. The range extends from those without any associated comorbidity to those whose lives are sharply and chronically compromised whether by the disease that led to the procedure or by concomitant pathologies.

Execution of endoscopic procedures under sedation is one alternative. Although sedation may not be compulsory for the success of many diagnostic studies, it is of great use and even necessary for therapeutic studies. In general, it allows these procedures to be carried out with the highest level of satisfaction for both the patient and the endoscopist.

For many years a combination of benzodiazepines, such as midazolam and diazepam, with opioids like fentanyl and meperidine, was the sedation of choice for sedation of these patients. It is applied through an IV drip infusion

in accordance to the patient's response. Unfortunately, this method led to oversedation of patients, and hence to associated morbidities, more frequently than expected. In some cases it required the use of specific antagonists such as flumazenil and naloxone (14) and generated unplanned hospitalizations. The death rate linked to this procedure has reached levels between 1:5,500 and 1:2,000 (1-3). In my opinion this should have led to a total suspension of all the procedures carried out by untrained personnel, including endoscopists and nurses, for the resuscitation of this type of patients. In the 1990's this method of deep sedation, its poor results, and the unavailability of anesthesiologists, generated the creation of a worldwide set of recommendations (4-7) for performing medical procedures under light or moderate sedation. Intended for medical staff other than anesthesiologists, these recommendations make clear that the person who performs the endoscopy procedure and the one who monitors and handles the side effects of sedation in the cardiopulmonary system should not be the same

person. Similarly, these recommendations require that the personnel in charge be specifically trained in how to handle the adverse effects of light and moderate sedation. The recommendations define deep sedation as the loss of consciousness with no response to oral or tactile input. Although this definition is different from that for general anesthesia, it must be regarded as an equivalent, in so far as there is general agreement that the personnel who monitor it have to have the required level of training and skills to handle it. The use of oximetry and more recently capnography (10) have been promoted as monitoring methods that provide early detection of apnea and hypoxaemia thus allowing the early use of supplementary sources of oxygen. However, the creation of these guidelines did not lead to the expected changes in dosages given to patients, especially to elderly patients, and the incidence of adverse effects persisted over time. In 2004 in the UK, the NCEPOD report, "Scoping our practice" (8) analyzed 136,000 therapeutic gastrointestinal endoscopies performed on hospitalized patients. It found that 3,669 deaths occurred within 30 days of the procedure. From complete information collected from 1,818 of these patients it was found that oversedation was the cause of 14% of these deaths. What is striking about this report is that 47% of the endoscopists involved in these cases actually had training in sedation. The mortality rate found in this report was 1 patient/535 endoscopies.

The advent of medicines like propofol marked a turning point in our perception of patient safety in the context of moderate and deep sedation (11-13). Propofol has now been on the market for 30 years. It has been utilized to induce anesthesia as well as for moderate sedation and deep sedation of short and long duration (up to 48 hours). It has been used in a wide range of environments including endoscopy units, operating rooms, and intensive care units. When propofol is used in doses that generate deep sedation, it has a high incidence of patient desaturation. Desaturation sometimes occurs even when a low dosage is required, as in interventions such as ventilation with mask or intubation (9, 12). However, as seen on a daily basis in the practice of anesthesia, the combination of propofol in hypnotic dosages with opioids frequently leads to apnea and severe desaturation. Its consequences depend upon whether or not it is corrected in a timely fashion (7). While there are extensive reports in the literature (11) showing that propofol is safe in the context of deep sedation, this does not license its administration by unsuitable personnel or staff without a medical license. Airbags for each seat, three-point safety belts, anti-lock braking systems and all the other automotive safety measures required in first-world countries make a vehicle safer, but they do not enhance the driver's skills or allow you to drive without a license. By the same token, drugs such as propofol do not

make endoscopists or the nurses who assist them experts in resuscitation in adverse circumstances, nor do they automatically empower non-medical staff to apply these drugs or monitor patients.

Deep sedation must be conducted by a professional other than the one who does the examination for it is clear that doing both procedures at the same time can decrease the quality of one of the two objectives: either the execution of a successful endoscopy, or the monitoring of potentially harmful side effects inherent in the use of hypnotics and opioid analgesics. Furthermore, delegating responsibility for administering drugs used to reach deep sedation to nursing staff, assistants or section chiefs, without any kind of supervision, is irresponsible. This is doubly true since these staff members do not have any legal authorization to apply this kind of drug as required in the Law 6 of 1991, and since they lack specialized training to deal with potential cardiovascular and respiratory complications that could lead to the patient's death in a high-risk situation. In addition, since their objective is to perform other concomitant responsibilities associated with the patients' care, the quality of their overall performance is likely to fall below the standard criteria competence into imprudence and negligence. Given that the person who administers deep sedation can prevent adverse effects of. In other words, it is unethical to make a patient undergo deep sedation without the supervision of an anesthesiologist who can better achieve a lower rate of complications and achieve successful results regardless of the drugs used.

Attention should be drawn to the economic focus of some of the articles and editorials on this topic (12, 13) which, basing themselves on the safety figures for propofol, argue that it is not cost-effective to pay the anesthesiologist's fees. I wonder if this also applies in the Colombian health system. Would the gastroenterologist who administers and supervises the sedation waive his or her fees that the contracting companies pay for his service? This economic point of view remains unclear since it does not specify whether a savings is for the system or on behalf of an interest in redistributing income among professionals.

The side effects of deep sedation become even more complex in patients whose ages are advanced, or who have associated comorbidities. In this group of patients it is of crucial importance to have the total skill and awareness of the person responsible administration and supervision of sedation.

With the right periodic staff training in basic and advanced resuscitation techniques for those who administer and monitor sedation, compliance with guidelines and all the elements recommended for monitoring and resuscitating, moderate sedation can be a very valuable and successful asset. Under these conditions the risks are very low risk for

the patient, the doctor and the anesthesiologist. It is highly recommended that deep sedation count on a professional who is an expert in the administration of sedating drugs through IV drip infusion and who is also an expert at handling the adverse and life compromising events that can emerge in any given situation.

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