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Pain in Digestive Endoscopy: How to Deal with it. Experience of a Group of Digestive Endoscopists in Comparison

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Introduction

Dealing with pain has always been a critical matter in digestive endoscopy. Therefore, finding the best way to manage it seems essential for ensuring the best treatment to patients.

Being able to work without making our patient feel any pain can change the quality of the perfor- mance, both in terms of accuracy and completeness of the endoscopic examination itself. In order to perform quality services, sedation is now to be considered unavoidable. Therefore, it is necessary to be aware of the various treatment options and the specific skills needed by the endoscopy team for a correct approach to sedation. The use of sedation has now markedly increased basically everywhere (87% in 2023 vs. 56% in 1990) and the use of electronic monitoring has become a standard practice.

There is no standard method to sedation, as this varies depending on the organizational set-up, the training of the gastroenterologist-endoscopist and the complexity both of the patient and the exami- nation that has to be performed.

It is possible to identify distinct theoretical levels of sedation, (considering that it is possible to switch from one level to another in a short time) and those used by our Endoscopy Group can be distin- guished in:

Conscious sedation

In which the response to verbal commands is maintained and appropriate. In this case, protective airway reflexes are preserved and respiratory function unharmed.

Deep sedation

In which the response to verbal commands becomes more difficult, incongruous or absent, but the reflex response to nociceptive stimuli is evocable.

In such a case, protective airway reflexes are inefficient and respiratory function is impaired.

Methods

Since January 2023, we have performed 1263 colonoscopies under conscious sedation (660 males; 603 females). The average age of the patients was 62.36 years (68.4 in males and 67.2 years in fe- males); the average weight was 73.4 kg, 80.7 kg in males and 74.7 kg in females, respectively.

Midazolam was administered to 654 males and to 601 females.

The medium Midazolam used was 2.65 mg, i.e. 2.06 mg in males and 2.33mg in females Propofol was used in 632 males and 598 females.

The combination Propofol + Midazolam was administered to 629 males and 592 females.

The dosages of Propofol used were 0.5 mg/Kg in both males and females. The average Propofol used was 26.57 mg/dl, 25.2 mg/dl in females and 35.6 mg in males, respectively.

We assessed pain using the NRS scale and obtained an average of 0.24, with NRS (1.2) in males and NRS (0.3) in females.

Each patient was carefully assessed prior to each endoscopic examination, in order to identify in ad- vance situations burdened with additional risks (critical patients, 'at-risk' clinical conditions, etc.).

Consequently, only those who could be sedated without the anesthesiologist support could be se- lected as candidates for sedation or sedo-analgesia.

Psychological preparation for the examination was always carried out by the nursing staff who wel- comed the patients by informing them and making them feel comfortable. Studies have long shown that psychological preparation, relaxation techniques, and a calm environment all improve accep- tance of the examination and reduce the need of pharmacological support.

However, information and psychological techniques alone aren't always sufficient to ensure the best practice. Moreover, the majority of patients (63 to 100 %) now opt for sedation, hence a pharmacolo- gical support.

Following the psychological preparation, informed consent is obtained. At this point the patient is monitored before undergoing sedo-analgesia. As a matter of fact, once the patient is a candidate for sedation/analgesia, drugs have to be administered after the dedicated operator (i.e. nurse) starts monitoring basal parameters, namely Heart Rate (HR), Oxygen Saturation (SpO2) and Blood Pressure (BP).

In order to carry out an effective and safe sedation, it is necessary to know the pharmacokinetic and pharmacodynamic characteristics of the drugs used, taking into consideration that there is no perfect sedative drug for every single patient to date.

Benzodiazepines and opioids are the drugs most commonly used in digestive endoscopy, both alone or in combination, while for some years now the use of propofol has been increasingly widespread.

All drugs, when administered as a direct bolus intravenously, should be administered as a slow bolus, titrating the dose to the effect obtained. There are no standard doses.

All patients received O2 trough oxygen mask during examination. Our Digestive Endoscopy group uses Midazolam and Propofol.

Midazolam

Anxiolytic, Non-analgesic sedative/hypnotic. For sedation in digestive endoscopy

- Initial dose: 1-2 mg
- additional dose: 1 mg every 2 minutes
- peak effect: after 3-4 minutes
- effect duration: 15-80 minutes

Propofol

For sedation in digestive endoscopy

- initial bolus: 10-40mg
- additional doses: 10-20 mg
- if continuous infusion: 25-75 mcg/kg/minute
- peak effect: 1-2 minutes
- duration of effect: 4-8 minutes.

Results

From 4 January 2023 to 30 April 2024, we endoscopically examined 1263 patients with an average age of 62.33 years; their average weight was 73.40 kg. For the endoscopic examination, we subjected them to conscious sedation, using Midazolam and Propofol (mean 2.65 mg/dl and 26.57 mg/dl, re- spectively), obtaining a mean NRS of 0.24.

No side effects such as bradyarrhythmia s or decreases in oxygen saturation were found during seda- tion.

Conclusions

Pain in digestive endoscopy has always been a matter of interest for all endoscopists, hence finding a solution to it has been of extreme relevancy. Being able to perform investigations without making our patients feel pain can change the quality of the performance, both in terms of accuracy and com- pleteness of the endoscopic examination itself. Our entire Endoscopy team has always strived for this goal, focusing its attention on the patient's needs, as well as on the examination itself. This work faithfully reports our outcomes over a small period of time, where we demonstrated that with an ac- curate use of sedation we were able to get our patients through invasive examinations with practi- cally zero pain.

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