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Original Article

Safety degree assessment of drugs used in conscious sedation for colonoscopy in patients that develop respiratory depression☆

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ABSTRACT

Objective: To analyze the safety degree of drugs used in colonoscopy during conscious sedation in patients developing respiratory depression.
Methods: Cross-sectional observational study that evaluated 1120 patients who underwent colonoscopy between February 2015 and February 2016. Physical characteristics, surgical history and previous colonoscopies, indication and conditions of the current examination, fentanyl and midazolam doses and subsequent complications were analyzed. Level of significance: $p < 0.05$. Chi-square test was used for association of categorical variables, whereas Student's *t* test was used to compare means and Spearman's coefficient for correlation.
Results: There were 661 female (59%) and 459 (41%) male patients, with a mean age of 54.90 (20–87) years and BMI of 27.00 (14.5–45.4). Of the 1120 patients, only 2 (0.2%) had respiratory depression, reversed with lanexat. Patients who had complications were of both genders, with a body mass index of 21.25 and 28.7. There was a correlation between the required dose of fentanyl and age ($p < 0.001$ to −0.121 Spearman's coefficient), as well as midazolam ($p < 0.001$ – Spearman's coefficient −0.452) and increasing age was associated with a lower dose of the drug.
Conclusion: The number of patients with complications was 0.17%. The age of the patient showed an inverse association, i.e., the older the patient, the lower the required dose of medication. The drugs used in colonoscopy show a high degree of safety, corroborating their frequent use for superficial/conscious sedation in this procedure.

☆ Study carried out at the Serviço de Endoscopia e Colonoscopia, Clínica Pró-Vida, Tubarão, SC, Brazil.

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Avaliação do grau de segurança dos fármacos utilizados na sedação superficial na colonoscopia em pacientes que desencadeiam depressão respiratória

Palavras-chave:
Colonoscopia, Sedação consciente, Complicação, Sedação, Depressão respiratória

RESUMO

Objetivo: Analisar o grau de segurança dos fármacos utilizados na colonoscopia sob sedação superficial em pacientes que desencadeiam depressão respiratória.

Métodos: Estudo observacional transversal, que avaliou 1.120 pacientes que realizaram colonoscopia entre Fevereiro de 2015 e Fevereiro de 2016. Analisaram-se características físicas, histórico cirúrgico e colonoscopias prévias, indicação e condições do exame atual, dose de fentanil e midazolam e complicações apresentadas. Nível de significância adotado: $p < 0,05$. Utilizou-se teste Qui-quadrado para associação de variáveis categóricas, teste t de Student para comparação de médias e coeficiente de Spearman para correlação.

Resultados: Foram 661 pacientes do sexo feminino (59%) e 459 (41%) do sexo masculino, com média de idade de 54,90 (20-87) anos e IMC de 27,00 (14,5-45,4). Dos 1120 pacientes, apenas 2 (0,2%) exibiram depressão respiratória revertida com lanexate. Os pacientes que apresentaram complicação eram de sexos diferentes, com índices de massa corpórea de 21,25 e 28,7. Houve correlação entre a dose necessária de fentanil e a idade ($p < 0,001$ - coef Spearmann - 0.121), assim como a de midazolam ($p < 0,001$ - coef Spearmann - 0.452), sendo que com o aumento da idade se correlacionou com uma menor dose utilizada de medicamento.

Conclusão: O número de pacientes que apresentaram alguma complicação foi 0,17%. A idade do paciente tem associação inversa, quanto maior a idade do paciente, menor é a dose necessária de medicamentos. Verifica-se alto grau de segurança dos medicamentos utilizados na colonoscopia, corroborando sua utilização frequente para a sedação superficial/consciente neste procedimento.

Introduction

Colonoscopy is a safe endoscopic examination, which provides information that common radiological tests may not be able to disclose. Colonoscopy has the advantage of being used both for the diagnosis and treatment of some colorectal diseases.[1]

Despite its importance, patients undergoing colonoscopy frequently have many questions and concerns about the procedure. Because it is an invasive procedure, it may have its performance hindered by factors such as patient anxiety and discomfort, who in addition to fear of pain, also must face the possibility of diagnosis of a severe illness.[2]

Several factors are associated with increased likelihood of feeling discomfort during colonoscopy, which can be inherent or not to the patient. Being very young or of older age, female gender, low body mass index (BMI), previous abdominal or pelvic surgery, inadequate colon preparation, inadequate sedation, kinking, high pressure of the air blown for colon distention are some of these factors.[3] An experienced endoscopist, adequate colon preparation, patient compliance and effective analgesia and sedation are required for an effective and good-quality examination.[2–4]

The best type of sedation/analgesia for gastrointestinal endoscopic procedures has yet to be defined,[5] although, it is believed that sedation administration before the procedure is safer for the patient and the endoscopist.[6,7] Both deep sedation and superficial sedation and analgesia are options for colonoscopies. When deeper sedation is desired, usually an anesthesiologist is called to follow the examination. Conscious sedation allows patients to give verbal responses or respond to tactile stimulation and allows control of respiratory and cardiovascular functions.[5]

Therefore, the most adequate medication for sedation during colonoscopy is that with an immediate effect and that lasts only for the duration of the examination, resulting in a rapid patient recovery and cause few or no side effects.[8] Benzodiazepines are routinely used associated with opioids. Midazolam is a benzodiazepine that reduces anxiety and is used in patient sedation. It has an onset of action of 1–2 min after intravenous administration of 5 mg and has a quick recovery. Fentanyl is a short-acting opioid, of which effect takes place within 2 min after the intravenous administration of 1–2 mg/kg and is responsible for anesthesia and pain reduction during the examination.[9]

The examination starts with the patient placed in left lateral decubitus, after adequate colon preparation and sedation by peripheral venous access, monitored by pulse oximetry. The perianal and anal region are inspected for the presence of lesions, and digital rectal examination is performed for dilation of the anal sphincter and evaluation of possible tumor masses. If general anesthesia is not being used, the patient

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