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**SAFETY OF PROPOFOL SEDATION ADMINISTERED BY AN ENDOSCOPY TEAM FOR
OUTPATIENT COLONOSCOPY**

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Keywords: colonoscopy, complications, deep sedation, Propofol.

Abbreviations: colorectal cancer (CRC), endoscopy team (ET), American Society of Anesthesiologists (ASA), Body Mass Index (BMI), Sleep Apnea-Hypopnea Syndrome (SAHS)

Dear Editor,

Sedation during colonoscopy increases comfort and reduces unexpected patient movement¹. We retrospectively studied colorectal cancer (CRC) screening colonoscopies performed under Propofol sedation controlled by our endoscopy team (ET) for 8 months.

The ET, formed by an endoscopist and a trained nurse, was accredited by the Spanish Society of Gastrointestinal Endoscopy and satisfied its recommendations on sedoanalgesia². Medical history, anesthetic risk (ASA), previous treatments and sedation-related complications were collected. For the incidence of complications and univariate analysis of associated factors, Student's t-test and Chi-square were used. The protocol was approved by the Research Committee.

Characteristics of the 277 consecutive procedures recorded are shown in Table 1. Those patients with ASA > III or with previous anesthetic problems, propofol allergy, severe liver or kidney disease, BMI > 40 kg/m², severe SAHS and, in general, patients with foreseeable difficult intubation (these colonoscopies were performed in the

operating room under sedation controlled by an anesthesiologist) and those that were managed with drugs other than Propofol, were excluded.

Among the few complications, the most common were hypotension, bradycardia, or both simultaneously. Regarding the subgroup with desaturation, total dose of Propofol and exploration time were greater than in those without complications and with hemodynamic complications, without statistically significant differences. All complications were mild and did not require interruption/incompletion of the colonoscopy.

Some studies defend that Propofol is not inferior in safety to traditional sedatives^{1,3-5}. Wang³ associates its use with a shorter recovery, an earlier discharge and a better level of sedation, without significant differences concerning cardiovascular events.

Sedation with Propofol by non-anesthesiologists is controversial, but a large number of studies demonstrate its safe use by ET, even in very demanding procedures³⁻⁵. Luzón⁴, out of 661 retrograde cholangiopancreatographies (ERCP), published 5.7 % hypoxemia, 2.4 % bradycardia, and 1.6 % hypotension. Perez-Cuadrado⁵, on ERCP in difficult to sedate patients, found 1.39 % of adverse events (0.8 % of respiratory complications). López-Muñoz⁶, in ASA I-II patients, recorded 2.4 % of adverse events (mainly hypotension and hypoxemia).

In our series, no statistically significant differences were identified between patients with and without complications in reference to time, dose, or anesthetic risk, probably due to the low number of complications found.

We conclude that CRC screening colonoscopy under sedation with Propofol controlled by an accredited ET and in selected patients with low ASA risk is a safe technique.

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Table 1: Characteristics of our serie

| | Total Propofol dose (mg) | Propofol dose by weight (mg/kg) | Total time (min) | Endoscope withdrawal time (min) | ASA | Men | Women |
|---|------------------------------|---------------------------------|-------------------------|---------------------------------|-----------------------------|-------|-------|
| Set of series | 235,3 ± 105,8 mg (I: 14-780) | 3,34±3,8 mg/kg (I: 0,18-44) | 24,1±12,3 min (I: 3-78) | 14,4 ± 12 min (I:1-58) | I: 37 II: 209 III: 31 | 148 | 129 |
| Hypotension SBP < 90 mmHg | 240,14 ± 81,51 (I:142-380) | 3,14 ± 1,09 (I:1,77-5,43) | 22,47 ± 15,09 (I:11-60) | 14,07 ± 13 (I:4-45) | I: 3 | 10 | 5 |
| Bradycardia HR < 50 bpm | 214,67 ± 24,19 (I:196-242) | 2,63 ± 0,26 (I:2,45-2,92) | 22,33 ± 2,52 (I:20-295) | 10,33 ± 2,52 (I:8-13) | III: 2 | 1 | 2 |
| Hypotension + bradycardia | 199,33 ± 27 (I:172-226) | 2,83 ± 0,39 (I:2,46-3,23) | 22,5 ± 17,68 (I:10-35) | 19 ± 15,56 (I:8-30) | I: 1 II: 2 | 1 | 2 |
| Desaturation Art O2 Sat <90 % | 251 ± 187,32 (I:57-474) | 2,56 ± 1,71 (I:0,63-4,65) | 36 ± 12,17 (I:28-50) | 24±5,29 (I:20-30) | II: 2 III: 2 | 4 | 0 |
| With complications | 233,7 ± 93,4 (I:57-474) | 2,9 ± 1,07 (I:0,63-5,43) | 24,2±13,9 (I:10-60) | 15,3±11,8 (I:4-45) | I: 4 II: 18 III: 3 | 16 | 9 |
| Without complications | 235,45 ± 107,16 (I:14-780) | 3,38 ± 3,98 (I:0,18-44) | 24,13 ± 12,08 (I:3-78) | 14,32 ± 9,23 (I:1-58) | I: 33 II:189 III:28 | 132 | 120 |
| Significance (p value) | 0,937 | 0,591 | 0,974 | 0,638 | 0,912 | 0,267 | |

ASA: American Society of Anesthesiologists; HR: Heart Rate; SBP: Systolic Blood Pressure; Art O2 Sat: Arterial oxygen saturation. Results expressed as mean ± standard deviation. I: Interval. Significance: $p < 0.05$ (95 % CI) for the comparison between the group with complications vs without complications.