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Comparison of the effectiveness of fentanyl versus morphine for severe postoperative pain management. A randomized, double blind, clinical trial[☆]

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ABSTRACT

Introduction: Intravenous rescue analgesia in the postoperative anesthesia care unit (PACU) is the most effective method for reducing postoperative pain (POP) when perioperative multimodal analgesia fails to control it. Appropriate analgesia during these first postoperative hours may prevent morbidity associated with pain.

Objective: To compare the effectiveness of intravenous morphine versus fentanyl in the PACU for reducing severe POP.

Methods: Randomized, prospective, double blind trial that included patients with severe POP using VAS in the PACU. Rescue was performed on one group with 01 mg/kg morphine and with another with 1 mcg/kg of fentanyl every 5 min intravenously until pain was reduced from severe to mild (VAS < 4). 30 patients were included in both groups.

Results: There were no significant differences in the percentage of patients with reduction of severe POP to mild 5 min after the injection of morphine or fentanyl, or in the subsequent rescue analgesia intervals ($p > 0.05$). Similarly, there were no significant differences in mean VAS (95% CI) in morphine or fentanyl groups beginning 5 min after the first analgesic dose ($p > 0.05$) between the groups.

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There were no significant differences in side effects such as respiratory depression, nausea, vomiting or pruritus ($p = 1.0$). There was a high satisfaction in both groups ($p > 0.05$).

Conclusions: Morphine and fentanyl were equally effective in treating severe POP after 5 min and following intervals after rescue analgesia was initiated, during 25 min at PACU, with no differences in efficacy or adverse effects between groups Register # NCT02145975 clinical-trials.gov, prospective.

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Comparación de la efectividad del fentanilo versus morfina, en dolor severo postoperatorio. Ensayo clínico aleatorizado, doble ciego

R E S U M E N

Palabras clave:

Analgésicos, opiáceos
Dolor posoperatorio
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Introducción: La analgesia intravenosa de rescate en la unidad de cuidados postanestésicos (UCPA), es la forma más efectiva de reducir el dolor POP, cuando la analgesia multimodal perioperatoria falla en controlarlo. Una adecuada analgesia en las primeras horas previene la morbilidad asociada al dolor.

Objetivo: Comparar la efectividad para reducir el dolor POP severo de fentanilo versus morfina en recuperación postanestésica.

Metodología: Estudio aleatorizado, prospectivo, doble ciego, en pacientes con dolor severo POP medido con la escala EVA. El rescate se hizo con un grupo morfina a 0,1 mg/kg versus fentanilo a 1 mcg/kg, cada 5 minutos, vía intravenosa, hasta reducir el dolor de severo a leve (EVA <4). Se incluyeron 30 pacientes en el grupo morfina y 30 en el grupo fentanilo.

Resultados: No se observaron diferencias en porcentaje de pacientes con reducción del dolor severo a leve desde los 5 minutos luego del rescate entre morfina o fentanilo, ó en los intervalos restantes ($p > 0,05$). Similarmente, no se encontraron diferencias significativas en la media de EVA (IC 95%) desde los 5 minutos luego del rescate ($p > 0.05$) entre los grupos.

No hubo diferencias en efectos adversos como depresión respiratoria, náuseas, vómitos o prurito entre grupos ($p = 1,0$). La satisfacción fue comparable en ambos grupos ($p > 0,05$).

Conclusiones: La morfina y el fentanilo fueron igualmente efectivos para el rescate en dolor severo desde los primeros 5 minutos, sin diferencias en los efectos adversos en ambos grupos. Registro # NCT02145975 (clinicaltrials.gov,prospectivo).

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Introduction

Sever postoperative pain (POP) is a problem with high incidence worldwide. Per a systematic literature review performed by Dollin and collaborators, an incidence of moderate to severe pain was found in 41% of patients in the postoperative period. Of these, only 23% experience relief.¹ In Latin America, severe POP has been reported in 48% of surgical patients, and 51–60% reported some level of pain these units.^{2,3} In our Colombian context, the situation is similar, with a prevalence of 22.3% of severe static pain and 48.2% of dynamic pain.⁴ These numbers reflect insufficient management in postanesthetic care units (PACU), also called postoperative care units.

The incidence, intensity and duration of postoperative pain varies considerably among patients, types of surgical intervention, hospitals, and even countries.⁵ Pain related to the postoperative period is not only important because it causes suffering or unpleasant experiences to the patient but also because of the damaging effects that it implies

for multiple organs.⁶ In this way, stress because of pain together with surgical trauma and previous morbidity of the patient causes cardiovascular,^{7,8} gastrointestinal^{6,9-11} and respiratory^{12,13} dysfunction, among others. This increases the incidence of myocardial ischemia, atelectasis (25–75% after abdominal surgery), respiratory infection (pneumonia in 1–3% of patients after heart surgery), ileus, deep vein thrombosis, and cognitive dysfunction. In the same way, it has been observed that pain increases PACU stay times and the number of re-admittances through emergency for pain management. In this way, patient recuperation is delayed and morbimortality increases along with the costs of patient care.⁷

It is important to note that in the PACUs, when we face a patient with severe or unbearable pain,^{14,15} the titration of opioid analgesics is the most effective strategy for controlling postoperative pain.^{16,17}

The most studied and used opioid currently in PACUs for analgesic rescue is morphine, which offers a good balance between the speed of the onset of action and the maintenance of the analgesia due to its pharmacokinetic properties.¹⁸

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