TITLE:

 Impact of prophylactic bowel regimens in the intensive care unit for patients on opioid infusions

AUTHORS:

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BACKGROUND/PURPOSE:

Opioid-induced constipation (OIC) has been associated with negative outcomes in patients in the intensive care unit (ICU) setting. There is data to support that OIC results in an increased incidence of bacterial infections, increased ICU length of stay (LOS), increased hospital LOS, and increased overall mortality. However, there is no data available regarding the efficacy of prophylactic bowel regimens in reducing the incidence of OIC in this patient population. The objective of this study was to assess the incidence of OIC in medical ICU patients who received continuous intravenous (IV) opioid infusions and received prophylactic bowel regimens compared to those who did not.

METHODS:
This Institutional Review Board-approved retrospective chart review assessed patients 18 to 89 years old admitted to the medical ICU who received IV opioid infusions for at least five days between January 1, 2019, to September 30, 2021, at a tertiary hospital. Patients were excluded if they received opioid infusions for comfort measure purposes, received lactulose for any indication excluding constipation, had a history of gastrointestinal disorders, or were chronic opioid users. The primary outcome was the incidence of OIC in patients who received prophylactic bowel regimens compared to those who did not. OIC was defined as fewer than 3 bowel movements within 7 days from initiation of an opioid infusion. A prophylactic bowel regimen was defined as the incorporation of a scheduled stimulant or osmotic laxative within 24 hours of initiation of an opioid infusion. Secondary outcomes included time to first bowel movement, time to first laxative use, ICU LOS, hospital LOS, overall mortality, need for methylnaltrexone, need for manual disimpaction, diarrhea after initiation of laxative, and need for promotility agents.

RESULTS:
Of the 93 patients included, 48 patients received a prophylactic bowel regimen and 45 patients did not. Patients who received prophylactic bowel regimens had a significantly lower incidence of OIC compared to the control group (20.8% vs. 53.3%, p=0.001). There was also a significant difference in mean time to first scheduled laxative use between the control and treatment group (0 days vs. 4.5 days, p < 0.001). There were no significant differences in ICU or hospital LOS, overall mortality, time to first bowel movement, or incidence of diarrhea after initiation of laxative agents between groups. There were no differences in the administration of methylnaltrexone, promotility agents, or manual disimpaction.

CONCLUSION:
The results of this study suggest that prophylactic bowel regimens reduce the incidence of OIC in patients receiving IV opioid infusions in the ICU setting. Based on the findings of this study, the pharmacy department plans to provide education on the benefit of prophylactic bowel regimens in this patient population. In addition, a bowel regimen will be added to a pre-existing sedation protocol order set when an opiate is chosen for analgosedation. This study was limited due to the small sample size and retrospective design.