Implementation of a bowel protocol for the prevention of opioid-induced constipation in adult patients hospitalized at a regional medical center.

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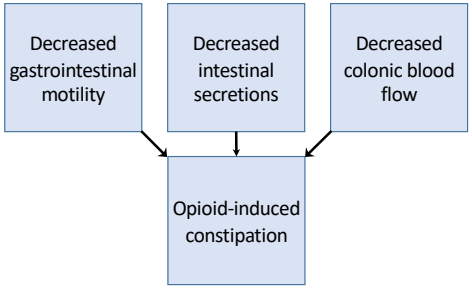
Introduction

- Opioids represent an essential role in therapy for patients suffering with pain, and it is estimated that 4%-5% of the US population use opioids regularly.[1]
- Constipation is the most common adverse effect associated with chronic opioid use.[1-3]
- Although tolerance develops to other adverse effects of opioids such as nausea, it does not develop to constipation.[2,3]
- Prophylactic management of constipation is essential to minimize its occurrence.[3,4]
- Opioid-induced constipation (OIC) may lead to increased length of stay and healthcare costs and contribute to decreased patient satisfaction and quality of life.[2,6]
- Stimulant laxatives are generally safe, effective, and inexpensive and are the first-line treatment for opioid-induced constipation.[1,2]

Figure 1. Etiology of Opioid-Induced Constipation



Background

- Eastern Idaho Regional Medical Center does not currently have a bowel protocol in place.
- Use of laxatives to prevent opioid-induced constipation may minimize the need for more costly alternatives, such as peripherally acting mu-opioid receptor antagonists (PAMORAs).
- Whereas the cost for the first line agents for prevention of OIC is expressed in cents, the cost of formulary PAMORAs is $127 and $32 per dose for methylnaltrexone and naloxegol, respectively.
- From July 2021 though August 2021, 52 hospitalized patients received at least one dose of a PAMORA.
  - 50 patients received methylnaltrexone
  - Two patients received naloxegol
- There is a potential annual cost saving of $38,484 if the use of PAMORAs is avoided.

Methods

- Pre and post retrospective chart review utilizing electronic health records to identify non-critically ill adult patients who were prescribed scheduled or as needed opioids.
- The study period will be 60 days prior to and 60 days post project implementation.
- Data collected will include:
  - Patient's demographic characteristics
  - Prescribed opioids
  - Utilization of the formulary peripheral acting mu-opioid receptor antagonists (i.e. methylnaltrexone & naloxegol)
  - Incidence of diarrhea, as defined by three loose stools in 24 hours
  - Pharmacists' adherence to implementation of the bowel protocol

Inclusion/Exclusion Criteria

Table 1. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Patients ≥ 18 years of age	Diarrhea in the past 24 hours or taking an anti-diarrheal
Non-critically ill hospitalized patients	Ileostomy, complete bowel obstruction, short bowel syndrome
Prescribed either scheduled or as needed opioids	Present impaction
	Positive for *Clostridium difficile* in the past 10 days

Objectives

- The aim of this quality improvement project is to reduce the incidence of opioid-induced constipation in adult hospitalized patients and limit use of high-cost medications (i.e. PAMORAs) through implementation of a standardized prophylactic bowel protocol.

Outcome Measure

Comparison of the number of peripherally acting mu opioid receptor antagonists prescribed pre- and post-implementation of the intervention.

Process Measure

Adherence of clinical pharmacists to the implementation of the bowel protocol on eligible patients.

Balance Measure

Incidence of diarrhea in patients prescribed bowel regimen after implementation of the protocol.

The authors have nothing to disclose. This project is IRB exempt as a quality improvement project.

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Proposed Protocol

Table 2. Bowel Protocol

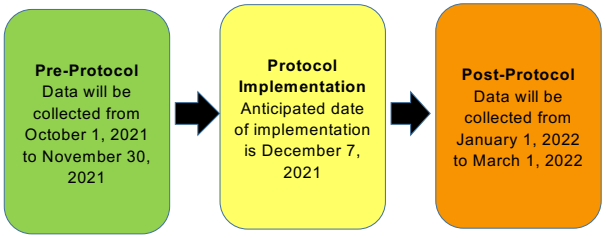
All adult patients prescribed opioids	Sennosides 8.6 mg or sennosides/docusate 8.6/50 mg by mouth (PO) twice daily. Hold for loose stools
Step 1: If no BM within 48h	Add bisacodyl 10 mg PO daily
Step 2: If no BM within 24h of step 1	Add polyethylene glycol 17g PO daily
Step 3: If no BM within 24h of step 2	Add bisacodyl suppository 10 mg per rectum daily until bowel movement

- When an opioid is prescribed by a provider, a pharmacist verifying the order will add the bowel regimen to the patient's medication profile.
- Nursing staff will be instructed to assess for bowel movements and document daily, as well as implement the steps 1-3 of the bowel protocol, when necessary.
- If patient experiences diarrhea, the scheduled laxatives will be held.

*There are no current studies that support the superiority of one laxative over another.[1]

Project Timeline

Figure 2. Timeline



Results and Conclusions

- This project is ongoing and results are pending.

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