

# Intraoperative Administration of an NSAID and Opioid Versus an Opioid-Alone Effect On Postoperative Ileus Development

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## Purpose

The purpose of this DNP project is to examine what is known from the existing literature about postoperative ileus development in the adult surgical patient population after receiving intraoperative opioids versus a combination of intraoperative opioids and NSAIDs.

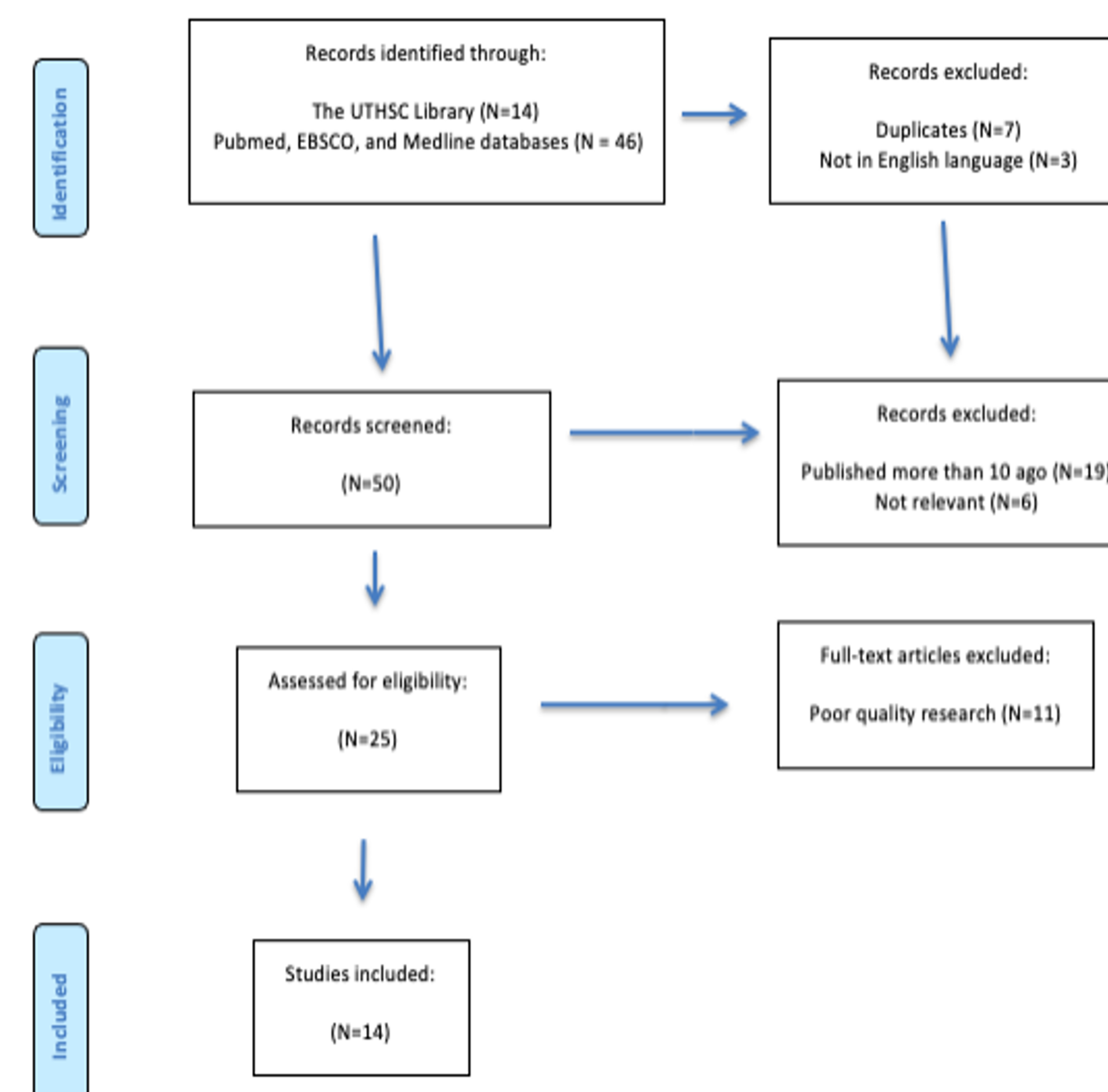
- A scoping review was conducted to answer the following PICOT question:

**In adult surgical patients (P), does intraoperative administration of an opioid and NSAID (I) compared to an opioid alone (C) increase or decrease the occurrence of postoperative ileus (O) prior to discharge (T)?**

## Background

- **Postoperative ileus (POI) has been reported as the most common cause of prolonged hospital length of stay after abdominal surgeries**
  - Affects every hospital in the nation and has the potential to impact any patient undergoing surgery
- **Characteristic signs of POI**
  - Bowel distention and lack of flatus, bowel sounds, and stool
- **POI development often leads to the following:**
  - Decreased wound healing
  - Delayed ambulation
  - Deep vein thrombosis
  - Pneumonia
- **POI results in increased medical interventions, decreased patient outcomes, and increased hospital absorbed costs**
  - Estimates indicate that the economic impact of POI is approximately \$750 million annually in the U.S.
- **POI origin linked to opioids**
  - Multifactorial in origin but a major potential cause is administration of opioids
  - Ongoing studies/trials of methods to reduce amounts of opioids given (i.e., ERAS)
  - Specific research is still needed regarding intraoperative use of NSAIDs in addition to opioids

## Methods



### • Scoping Review

- Key search terms: Postoperative Ileus within the last 5 years, Opioids within the past 5 years, Opioids, NSAIDs, Postoperative Ileus, Quality Improvement, Postoperative Complications
- Databases: UTHSC Library, Pubmed, EBSCO, and Medline

### • Articles

- 60 Articles found with MeSH headings
  - A total of 46 were articles excluded
  - 25 articles underwent rapid critical appraisal
- 14 studies included in scoping review

## Results

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
POI	NE	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>b</sup>	↓ <sup>b</sup>	NE	NE	↓ <sup>a</sup>	NE	NE	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>
LOS	NE	↓ <sup>a</sup>	NE	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>b</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>b</sup>	NE	NE
OC	↓ <sup>a</sup>	NE	NE	↓ <sup>a</sup>	↓ <sup>a</sup>	↓ <sup>b</sup>	NE	↓ <sup>a</sup>	NE	↓ <sup>a</sup>	NE	NE	↓ <sup>a</sup>	↓ <sup>a</sup>

### SYMBOL KEY

↑ = Increased, ↓ = Decreased, NE = Not Examined, \* Statistically significant findings, <sup>b</sup> Statistical significance not reported  
POI = Postoperative ileus; LOS = Length of stay; OC = Opioid consumption < 48 hours Postoperative

### LEGEND

1 = Blank K, et al. (2018); 2 = Story S, Chamberlain R. (2009); 3 = Milne TG, et al. (2018); 4 = Gifford, C., et al. (2019); 5 = Aryaie AH, et al. (2018); 6 = Beloeil H, et al. (2018); 7 = Kim, G. (2015); 8 = Lohsirawat V. (2016); 9 = Li Z, et al. (2020); 10 = Harii K, et al. (2019); 11 = Scarborough, J., et al. (2017); 12 = Miaskowski, C. (2009); 13 = Boer, H. D., et al. (2017); 14 = Shadbolt, C., et al. (2020)

### • The most common interventions and outcomes assessed in each article were: POI occurrence, length of stay, and opioid consumption <48 hours postop.

- Nine articles demonstrated a decrease in POI occurrence
- Ten articles demonstrated a decrease in length of stay
- Eight articles demonstrated a decrease in opioid consumption in the first 48 hours postop.

All studies demonstrated statistically significant findings except for one randomized control trial.

## Implications for Practice

Based on the evidence presented in the collected articles, the answer to our PICOT question is as follows:

**A combination of NSAID and opioid administration compared to an opioid alone reduces the occurrence of POI prior to hospital discharge.**

- **Identify gaps in existing knowledge and confirm need for further high-quality research**
  - Larger sample sizes
  - Use of NSAIDs to facilitate opioid-sparing modalities
- **Need for additional information to existing research**
  - Stronger evidence
  - Sufficient research
  - Significant results
- **Applications for the adult surgical patient**
  - Based on our research, it is beneficial to administer a combination of opioids and NSAIDs to adult surgical patients intraoperatively. However, we do hope for more research on this topic in the future.

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