



TITLE: Oral Laxative Use Pre- and Post-Hip Fracture or Other Emergency Orthopedic Surgery: A Review of the Guidelines

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CONTEXT AND POLICY ISSUES

To manage patients undergoing emergency orthopedic surgery, a series of important multi-disciplinary decisions must be made regarding pre-surgical and post-surgical care that involve several medical specialties.¹ One such issue is the management and treatment of constipation. Constipation has been suggested to be one of the most common adverse reaction following surgery² and can occur post-operatively secondary to a reduction in fluid intake, immobility, or from the use of certain medication (e.g., opioids).³ While the effects of constipation on patients are often minor, prolonged bowel dysfunction can lead to severe pain or other serious consequences, such as: faecal impaction, exacerbation of post-operative ileus, intestinal obstruction and urinary retention.² In an observational study of 46 patients that received opioid analgesics following emergency neck-of-femur surgery, 71.7% were found to have developed constipation and, even amongst the subgroup of patients that received prophylactic laxatives, constipation occurred in 12 out of the 20 patients (60%).²

Guidelines on laxatives use, associated with opioids-induced constipation, are readily available in the realms of oncology and palliative care.⁴⁻⁶ However, it remains uncertain what the recommendations are for oral laxative use in pre- and post-operative care following emergency orthopedic surgery. The purpose of this review is therefore to identify the available evidence-based guidelines on the use of oral laxatives pre- and post- emergency orthopedic surgery, including hip fracture surgery.

RESEARCH QUESTION

1. What are the evidence-based guidelines regarding the use of oral laxatives for adults undergoing emergency orthopedic surgery?

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KEY FINDINGS

The Scottish Intercollegiate Guidelines Network published a guideline on the treatment and management of patients undergoing hip surgery. Based on the clinical experience of the guideline development group, prevention of constipation was recommended as part of the early management of patients with hip fracture. Options listed to manage patients with constipation include laxatives, increased fluid intake, increased dietary fiber, or increased mobility.

METHODS

Literature Search Strategy

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, Issue 2), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2005 and February 19, 2015.

Selection Criteria and Methods

One reviewer screened the literature search results to identify relevant publications, including: health technology assessments (HTAs); systematic reviews (SRs) and meta-analyses (MA); and clinical practice guidelines (CPGs). The initial screen was based on publication title and abstract; followed by a full-text screen of any potentially relevant articles. Studies considered for inclusion were based on the selection criteria presented in Table 1.

Population	Adults, aged 50 years and older, undergoing emergency orthopedic surgery
Intervention	Oral laxatives, given prior to surgery and following surgery
Comparator	Suppositories or enemas, or no laxatives
Outcomes	Guidelines and recommendations for the management of post-surgical constipation
Study Designs	Evidence-based Guidelines

Exclusion Criteria

Articles were excluded if there were a duplicate report of the same study; if they were already included in a selected SR or HTA; if they were published prior to 2010; or if they did not meet the specified inclusion criteria.

Critical Appraisal of Individual Studies

Guidelines were appraised using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) instrument.⁷ The items included in the AGREE instrument include: scope and purpose of the guideline; stakeholder involvement; rigor of development; clarity and presentation; applicability; and editorial independence.⁷ In conducting the critical appraisal, an overall numeric score was not calculated for each study. Instead, the selected instrument was

used to identify the strengths and limitations that were subsequently reviewed narratively for the studies and guidelines that met our inclusion criteria.

SUMMARY OF EVIDENCE

Quantity of Research Available

140 citations were identified from the literature search in which one potentially relevant report was selected for full-text review following title and abstract screening. Grey literature search retrieved one additional record. Following full-text screening, one publication met the complete inclusion criteria and was included in this report. The PRISMA flowchart,⁸ detailing the study selection process, is presented in Appendix 1.

References of potential interest that did not meet the selection criteria are provided in Appendix 2.

Summary of Study Characteristics

No relevant HTA or SR/MA was found in the literature search. One CPG, published in 2009 by the Scottish Intercollegiate Guidelines Network (SIGN), was identified.⁹ This CPG is an update of two previous CPGs on hip fracture management in elderly patients, the first published in 1997 (SIGN 15: Management of elderly people with fractured hip) which was superseded by a second guideline published in 2002 (SIGN 56: prevention and management of hip fracture in older people). The guideline working group consisted of independent experts from a broad range of medical expertise (e.g., surgeons, general practitioners, nurses, occupational therapist, physiotherapists) and, overall, the guidelines broadly covered prevention and management of hip fractures amongst the elderly. The topic of constipation and potential treatment was covered under the early post-operative management section.

Guideline recommendations were based on an evidence review. The evidence was graded on a 4-point scale in which 1++ corresponded to high quality MA, SR of randomized controlled trials of randomized controlled trials with a very low risk of bias. Class 4 corresponded to evidence of the lowest quality and highest risk of bias, expert opinion. The strength of the recommendations, classified as Level A evidence (based on the highest quality evidence) to Level D (based on lowest quality evidence), were based on the level of evidence available. Good practice points corresponded to clinical experience from the guideline development group.

Summary of Critical Appraisal

The SIGN CPG⁹ was based on a systematic literature review of reports published from 2001 to 2007 to update previous guidelines. Economic and patient-relevant issues were included in the search criteria and, as part of the supporting material, a detailed search strategy was provided for each study design type (i.e., SR, RCTs, and observational studies). Screening of relevant articles was done in duplicate although the specific selection criteria were not provided. The guideline development involved disease experts who declared their potential conflict of interests (unpublished) and patient representatives who provided their views and preferences. The draft guideline underwent public consultation and external specialist review. The guideline developers noted that it would be considered for renewal in three years although no specific process was provided for updating these guidelines. No details on whether a new set of updates are being

planned or in progress were available. However, the SIGN website does acknowledge that some of the recommendations in this guideline may be out of date.

One of the main limitations of this guideline was the lack of detail provided on how the systematic literature review was conducted. For instance, the number of articles identified from the literature review and the inclusion/exclusion criteria to screen articles were not provided. This lack of clarity surrounding how the literature was searched makes it difficult to assess in terms of the quality of the systematic review that informed the subsequent development of the CPG recommendations. For instance, the potential for publication bias in the systematic review is uncertain.

Summary of Findings

The SIGN guideline⁹ recommended that, as a good practice point (based on expert opinion), prevention of constipation should be considered as part of early management of hip fracture patients. Options listed to manage patients with constipation include laxatives (recommended by the British National Formulary for drug-induced constipation), increased fluid intake, increase fiber in diet, and increase mobility.

Limitations

As the guideline was developed with the Scottish health care system in mind, these results may not be generalizable to the Canadian setting. Although rigorous methodology was generally followed to provide recommendations based on the best available evidence, the recommendations, specific to constipation management, were primarily based on expert opinions given the lack of literature identified from the systematic review on the use of laxatives for hip surgery.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

One evidence-based guideline was identified that addressed the use of oral laxatives pre- and post-orthopedic surgery.⁹ The guidelines, although well conducted, noted that the evidence was limited to the clinical experience of the guideline development group. Prevention of constipation was recommended as part of early management of hip fracture patients and, in patients presenting with constipation, options to manage these symptoms may include laxatives, increased fluid intake, increased dietary fiber, and greater mobility. The existing guideline should therefore be followed with caution due to the limitations previously mentioned.

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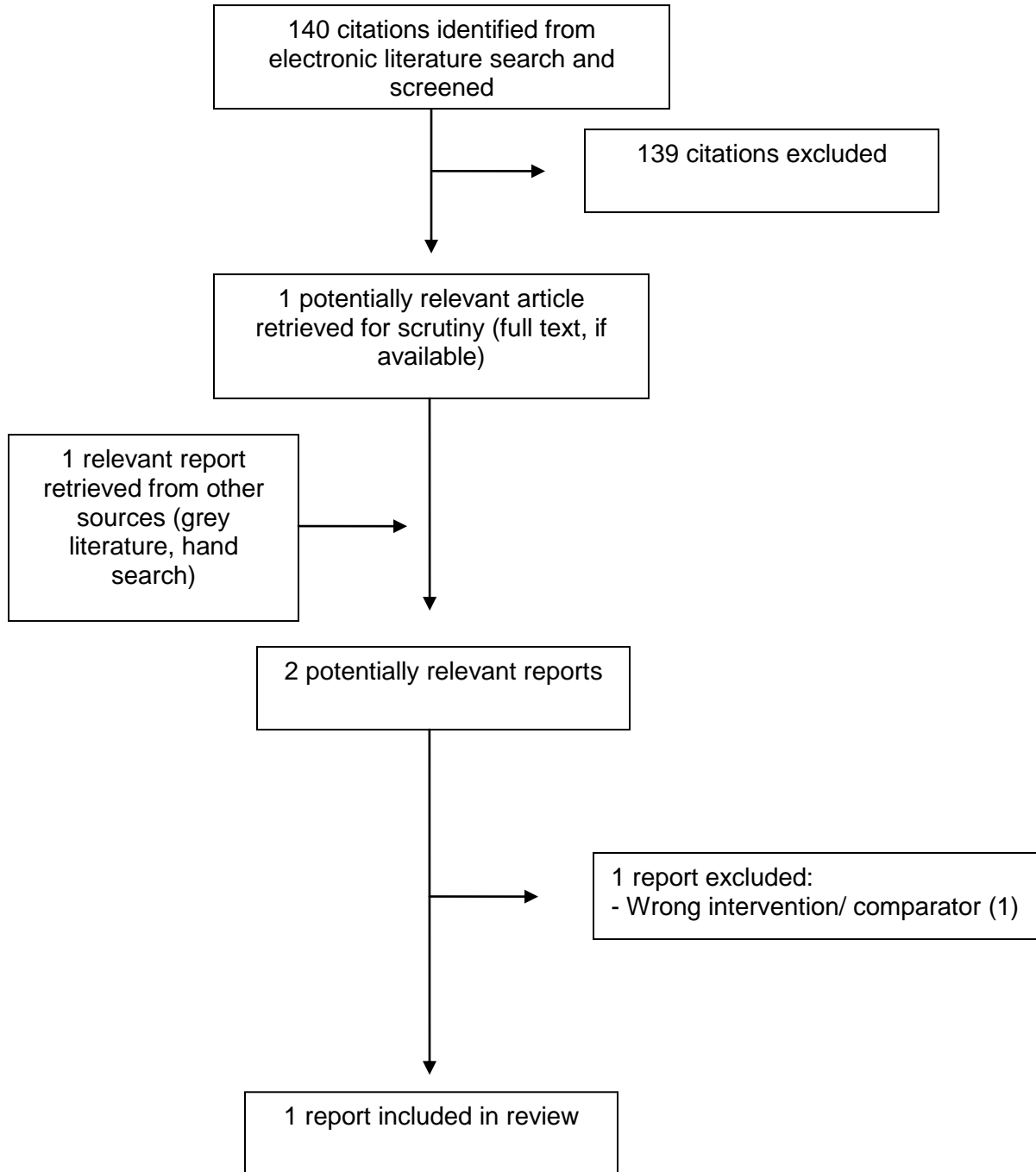
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APPENDIX 1: Selection of Included Studies



APPENDIX 2: Additional References of Potential Interest

Observational Studies

Neighbour C. Improving bowel care after surgery for hip fracture. *Nurs Older People*. 2014 Nov 28;26(10):16-22.

[PubMed: PM25430842](#)

Davies EC, Green CF, Mottram DR, Pirmohamed M. The use of opioids and laxatives, and incidence of constipation, in patients requiring neck-of-femur (NOF) surgery: a pilot study. *J Clin Pharm Ther*. 2008 Oct;33(5):561-6.

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Clinical Practice Guidelines – Methodology Uncertain/ Not Provided

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See: Management