

CADTH RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

Nonsteroidal Anti- Inflammatory Drugs and Hypertension: Safety

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Questions or requests for information about this report can be directed to requests@cadth.ca

Research Question

What is the evidence associated with the development of hypertension upon the use of nonsteroidal anti-inflammatory drugs to treat acute pain?

Key Findings

No relevant literature was identified regarding the evidence associated with the development of hypertension upon the use of nonsteroidal anti-inflammatory drugs to treat acute pain.

Methods

A limited literature search was conducted on key resources including PubMed, the Cochrane Library, University of York Centre for Reviews and Dissemination (CRD), Medline via OVID, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to safety data. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2013 and January 11, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Adult and pediatric patients (with or without co-morbidities, including those patients currently being treated with anti-hypertensives) in any setting (e.g., hospital, clinic, community, long-term care facilities) with acute pain
Intervention	Nonsteroidal anti-inflammatory drugs (NSAIDs) (traditional/non-selective NSAIDs [e.g., diclofenac, naproxen, and ibuprofen] and Cox-2 inhibitors [e.g., celecoxib])
Comparators	<ul style="list-style-type: none"> • Any NSAID (alone or in combination with a diuretic and an angiotensin-converting-enzyme inhibitor [ACE] or Angiotensin II receptor blockers [ARB]) • Opioids • Placebo • No treatment • No comparator
Outcomes	Safety (e.g., increased hypertension, magnitude of effect of hypertension)
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and non-randomized studies.

No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified regarding the evidence associated with the development of hypertension upon the use of nonsteroidal anti-inflammatory drugs to treat acute pain.

References of potential interest are provided in the appendix.

Overall Summary of Findings

No relevant literature was identified regarding the development of hypertension upon the use of nonsteroidal anti-inflammatory drugs to treat acute pain; therefore, no summary can be provided.

References Summarized

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Appendix — Further Information

Previous CADTH Reports

1. Perioperative use of NSAIDs: safety and guidelines. (*CADTH Rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2018: <https://www.cadth.ca/perioperative-use-nsaids-safety-and-guidelines>. Accessed 2019 Jan 23.
2. Non-steroidal anti-inflammatory drugs in patients with hypertension, chronic kidney disease, or heart failure: benefits, harms, and guidelines. (*CADTH Rapid response report: summary with critical appraisal*). Ottawa (ON):CADTH; 2015. <https://cadth.ca/non-steroidal-anti-inflammatory-drugs-patients-hypertension-chronic-kidney-disease-or-heart-failure>. Accessed 2019 Jan 23.

Systematic Reviews and Meta-Analyses

Outcome Insufficiently Described – Hypertension Not Specifically Mentioned

3. McNicol ED, Ferguson MC, Schumann R. Single-dose intravenous diclofenac for acute postoperative pain in adults. *Cochrane Database of Systematic Reviews*. 2018;8:CD012498. [PubMed: PM30153336](#)
4. McNicol ED, Rowe E, Cooper TE. Ketorolac for postoperative pain in children. *Cochrane Database of Systematic Reviews*. 2018;7:CD012294. [PubMed: PM29981164](#)
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10. van den Bekerom MPJ, Sjer A, Somford MP, Bulstra GH, Struijs PAA, Kerkhoffs G. Non-steroidal anti-inflammatory drugs (NSAIDs) for treating acute ankle sprains in adults: benefits outweigh adverse events. *Knee Surg Sports Traumatol Arthrosc.* 2015;23(8):2390-2399.
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[PubMed: PM24930627](#)

Randomized Controlled Trials

Outcome Insufficiently Described – Hypertension Not Specifically Mentioned

12. Predel HG, Giannetti B, Connolly MP, Lewis F, Bhatt A. Efficacy and tolerability of a new ibuprofen 200mg plaster in patients with acute sports-related traumatic blunt soft tissue injury/contusion. *Postgrad Med.* 2018;130(1):24-31.
[PubMed: PM29110567](#)
13. Zhou F, Du Y, Huang W, Shan J, Xu G. The efficacy and safety of early initiation of preoperative analgesia with celecoxib in patients underwent arthroscopic knee surgery: a randomized, controlled study. *Medicine (Baltimore).* 2017;96(42):e8234.
[PubMed: PM29049211](#)
14. Pathan SA, Mitra B, Straney LD, et al. Delivering safe and effective analgesia for management of renal colic in the emergency department: a double-blind, multigroup, randomised controlled trial. *Lancet.* 2016;387(10032):1999-2007.
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Non-Randomized Studies

Outcome Insufficiently Described – Hypertension Not Specifically Mentioned

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[PubMed: PM24551630](#)
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[PubMed: PM23661962](#)

Review Articles

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[PubMed: PM27831630](#)
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Additional References

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