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Tailored Opioid Prescribing After Gynecologic Surgery

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Authors: Thyna Vu, Charlene Argáez

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About CADTH: CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs, medical devices, diagnostics, and procedures in our health care system.

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

Key Messages

- No evidence was identified regarding the clinical effectiveness of tailored opioid prescribing after gynecologic surgery.
- No evidence-based guidelines were identified regarding tailored opioid prescribing after gynecologic surgery.

Research Questions

1. What is the clinical effectiveness of tailored opioid prescribing after gynecologic surgery?
2. What are the evidence-based guidelines regarding tailored opioid prescribing after gynecologic surgery?

Methods

Literature Search Methods

A limited literature search was conducted by an information specialist on key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the international HTA database, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy comprised both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were opioids and gynecologic surgery or procedures. No filters were applied to limit the retrieval to study type. Where possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2011 and January 18, 2021. Internet links were provided, where available.

Selection Criteria

One reviewer screened literature search results (titles and abstracts) and selected publications according to the inclusion criteria presented in Table 1. Full texts of study publications were not reviewed. Open access full-text versions of evidence-based guidelines were reviewed when abstracts were not available.

References

No relevant health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, or evidence-based guidelines were identified.

References of potential interest that did not meet the inclusion criteria are provided in Appendix 1.

Table 1: Selection Criteria

Criteria	Description
Population	Patients (any age) with gynecological conditions (benign or malignant) requiring removal of the uterus (i.e., hysterectomy)
Intervention	Q1 and 2: Tailored (also known as tiered, reduced, or restrictive) opioid prescribing at discharge following gynecologic open surgery or MIS (e.g., laparoscopic, robotic, vaginal procedures) for total/radical hysterectomy alone or in conjunction with another procedure (e.g., bilateral salpingo-oophorectomy, bilateral pelvic lymph node dissection, para-aortic lymph node dissection)
Comparator	Q1: Standard opioid prescribing at discharge following open surgery or MIS for total/radical hysterectomy alone or in conjunction with another procedure Exclude: Studies comparing MIS vs. open surgery Q2: Not applicable
Outcomes	Q1: Pain level, health-related quality of life, adverse events (e.g., respiratory depression, constipation), risk of opioid dependence or addiction, opioid misuse/diversion, rates of hospital readmission, Q2: Recommendations regarding tailored opioid prescribing after gynecologic surgery (e.g., patient criteria for tailored opioid prescribing, surgical procedures appropriate for tailored opioid prescribing)
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

MIS = minimally invasive surgery, vs. = versus.

Health Technology Assessments

No literature was identified.

Systematic Reviews and Meta-analyses

No literature was identified.

Randomized Controlled Trials

No literature was identified.

Non-Randomized Studies

No literature was identified.

Guidelines and Recommendations

No literature was identified.

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Appendix 1: References of Potential Interest

Previous CADTH Reports

1. Hafizi D, Featherstone R. Smaller quantity opioid prescribing for acute pain: clinical effectiveness and guidelines (*CADTH rapid response report: reference list*). Ottawa (ON): CADTH; 2019 Jun: https://cadth.ca/sites/default/files/pdf/htis/2019/RA1039%20Restriction%20for%20meds%20Final.pdf Accessed 2021 Jan 21.

2. Marchand DK, Ford C. Codeine for acute pain for urological or general surgery patients: a review of clinical effectiveness (*CADTH rapid response report: summary with critical appraisal*). Ottawa (ON): CADTH; 2019 Nov: https://www.cadth.ca/sites/default/files/pdf/htis/2019/RC1201%20Codeine%20for%20Urological%20Pts%20Final.pdf Accessed 2021 Jan 21. Systematic Reviews and Meta-analyses Alternative Outcome – Patterns of Opioid Use.

3. Johnson CM, Makai GEH. A Systematic review of perioperative opioid management for minimally invasive hysterectomy. *J Minim Invasive Gynecol*. 2019 Feb;26(2):233-243. Medline

Randomized Controlled Trials

Unclear Intervention —Type of Hysterectomy Not Specified (Enhanced Recovery After Surgery Programs)

4. Dickson EL, Stockwell E, Geller MA, et al. Enhanced recovery program and length of stay after laparotomy on a gynecologic oncology service: a randomized controlled trial. *Obstet Gynecol*. 2017 Feb;129(2):355-362. . Medline

5. Kilpio O, Harkki PSM, Mentula MJ, Vaananen A, Pakarinen PI. Recovery after enhanced versus conventional care laparoscopic hysterectomy performed in the afternoon: a randomized controlled trial. *Int J Gynaecol Obstet*. 2020 Dec;151(3):392-398. Medline

Non-Randomized Studies

Unclear Intervention — Type of Hysterectomy Not Specified

6. Hillman RT, Iniesta MD, Shi Q, et al. Longitudinal patient-reported outcomes and restrictive opioid prescribing after minimally invasive gynecologic surgery. *Int J Gynecol Cancer*. 2021 Jan;31(1):114-121. Medline

7. Glaser GE, Kalogera E, Kumar A, et al. Outcomes and patient perspectives following implementation of tiered opioid prescription guidelines in gynecologic surgery. *Gynecol Oncol*. 2020 May;157(2):476-481. Medline

8. Mark J, Argentieri DM, Gutierrez CA, et al. Ultrarestrictive opioid prescription protocol for pain management after gynecologic and abdominal surgery. *JAMA Netw Open*. 2018 Dec;1(8):e185452. Medline

Alternative Outcome — Patterns of Opioid Use

9. Margolis B, Andriani L, Baumann K, Hirsch AM, Pothuri B. Safety and feasibility of discharge without an opioid prescription for patients undergoing gynecologic surgery. *Obstet Gynecol*. 2020 Dec;136(6):1126-1134. Medline

Alternative Outcome — Patient Factors Associated With Pain and/or Opioid Use

10. Brunes M, Habel H, Altman D, Ek M. Risk-factors for continuous long-term use of prescription opioid drugs 3 years after hysterectomy: a nationwide cohort study. *Acta Obstet Gynecol Scand*. 2020 Aug;99(8):1057-1063. Medline

11. McEntee KM, Crawford KD, Wilson MD, et al. Postoperative opioid prescribing and consumption after hysterectomy: a prospective cohort study. *J Minim Invasive Gynecol*. 2020 Nov 02;S1553-4650(20)31112-2. Medline

12. Wen X, Kogut S, Aroke H, Taylor L, Matteson KA. Chronic opioid use in women following hysterectomy: patterns and predictors. *Pharmacoepidemiol Drug Saf*. 2020 Apr;29(4):493-503. Medline

13. Weston E, Raker C, Huang D, et al. Opioid use after minimally invasive hysterectomy in gynecologic oncology patients. *Gynecol Oncol*. 2019 Oct;155(1):119-125. Medline

14. Wong M, Vogell A, Wright K, Isaacson K, Loring M, Morris S. Opioid use after laparoscopic hysterectomy: prescriptions, patient use, and a predictive calculator. *Am J Obstet Gynecol*. 2019 Mar;220(3):259.e251-259.e211. Medline

15. As-Sanie S, Till SR, Mowers EL, et al. Opioid prescribing patterns, patient use, and postoperative pain after hysterectomy for benign indications. *Obstet Gynecol*. 2017 Dec;130(6):1261-1268. Medline

16. Aouad MT, Kanazi GE, Malek K, Tamim H, Zahreddine L, Kaddoum RN. Predictors of postoperative pain and analgesic requirements following abdominal hysterectomy: an observational study. *J Anesth*. 2016 Feb;30(1):72-79. Medline

17. Al-Hashimi M, Scott S, Griffin-Teall N, Thompson J. Influence of ethnicity on the perception and treatment of early post-operative pain. *Br J Pain*. 2015 Aug;9(3):167-172. Medline

18. Janda AM, As-Sanie S, Rajala B, et al. Fibromyalgia survey criteria are associated with increased postoperative opioid consumption in women undergoing hysterectomy. *Anesthesiology*. 2015 May;122(5):1103-1111. Medline

19. Ahmed A, Khan F, Ali M, Haqnawaz F, Hussain A, Azam SI. Effect of the menstrual cycle phase on post-operative pain perception and analgesic requirements. *Acta Anaesthesiol Scand*. 2012 May;56(5):629-635. Medline

Alternative Outcome — Surgery Type on Pain and/or Opioid Use

20. Wright JD, Huang Y, Melamed A, et al. Use and misuse of opioids after gynecologic surgical procedures. *Obstet Gynecol*. 2019 Aug;134(2):250-260. Medline

21. Pokkinen SM, Kalliomaki ML, Yli-Hankala A, Nieminen K. Less postoperative pain after laparoscopic hysterectomy than after vaginal hysterectomy. *Arch Gynecol Obstet*. 2015 Jul;292(1):149-154. Medline

Alternative Outcome — Robot-Assisted Versus Conventional Surgery on Pain and/or Opioid Use

22. Rajadurai VA, Tan J, Salfinger SG, Cohen PA. Outcomes in women undergoing robotic-assisted laparoscopic hysterectomy compared to conventional laparoscopic hysterectomy at a tertiary hospital in Western Australia. *Aust N Z J Obstet Gynaecol*. 2018 Aug;58(4):443-448. Medline

23. Westermann LB, Crisp CC, Mazloomdoost D, Kleeman SD, Pauls RN. Comparative perioperative pain and recovery in women undergoing vaginal reconstruction versus robotic sacrocolpopexy. *Female Pelvic Med Reconstr Surg*. 2017 Mar/Apr;23(2):95-100. Medline

24. Turner TB, Habib AS, Broadwater G, et al. Postoperative pain scores and narcotic use in robotic-assisted versus laparoscopic hysterectomy for endometrial cancer staging. *J Minim Invasive Gynecol*. 2015 Sep-Oct;22(6):1004-1010. Medline

25. Betcher RE, Chaney JP, Lacy PR, Otey SK, Wood DJ. Analysis of postoperative pain in robotic versus traditional laparoscopic hysterectomy. *J Robot Surg*. 2014 Mar;8(1):35-41. Medline

26. Leitao MM, Jr., Malhotra V, Briscoe G, et al. Postoperative pain medication requirements in patients undergoing computer-assisted ("Robotic") and standard laparoscopic procedures for newly diagnosed endometrial cancer. *Ann Surg Oncol*. 2013 Oct;20(11):3561-3567. Medline

Alternative Intervention — Patient Education and Shared Decision-Making

27. Vilkins AL, Sahara M, Till SR, et al. Effects of shared decision making on opioid prescribing after hysterectomy. *Obstet Gynecol*. 2019 Oct;134(4):823-833. Medline

Unclear Intervention — Type of Hysterectomy Not Specified (Enhanced Recovery After Surgery Programs)

28. Lehman A, Kemp EV, Brown J, et al. Pre-emptive non-narcotic pain medication before minimally invasive surgery in gynecologic oncology. *J Minim Invasive Gynecol*. 2020 Jul 27;S1553-4650(20)30353-8. Medline

29. Movilla PR, Kokroko JA, Kotlyar AG, Rowen TS. Postoperative opioid use using enhanced recovery after surgery guidelines for benign gynecologic procedures. *J Minim Invasive Gynecol*. 2020 Feb;27(2):510-517. Medline

30. Smith AE, Heiss K, Childress KJ. Enhanced recovery after surgery in pediatric and adolescent gynecology: a pilot study. *J Pediatr Adolesc Gynecol*. 2020 Aug;33(4):403-409. Medline

31. Weston E, Noel M, Douglas K, et al. The impact of an enhanced recovery after minimally invasive surgery program on opioid use in gynecologic oncology patients undergoing hysterectomy. *Gynecol Oncol*. 2020 May;157(2):469-475. Medline

32. Hillman RT, Sanchez-Migallon A, Meyer LA, et al. Patient characteristics and opioid use prior to discharge after open gynecologic surgery in an enhanced recovery after surgery (ERAS) program. *Gynecol Oncol*. 2019 Jun;153(3):604-609. Medline

33. Schwartz AR, Lim S, Broadwater G, et al. Reduction in opioid use and postoperative pain scores after elective laparotomy with implementation of enhanced recovery after surgery protocol on a gynecologic oncology service. *Int J Gynecol Cancer*. 2019 Jun;29(5):935-943. Medline

34. Trowbridge ER, Evans SL, Sarosiek BM, et al. Enhanced recovery program for minimally invasive and vaginal urogynecologic surgery. *Int Urogynecol J.* 2019 Feb;30(2):313-321. Medline

35. Bergstrom JE, Scott ME, Alimi Y, et al. Narcotics reduction, quality and safety in gynecologic oncology surgery in the first year of enhanced recovery after surgery protocol implementation. *Gynecol Oncol*. 2018 Jun;149(3):554-559. Medline

36. Meyer LA, Lasala J, Iniesta MD, et al. Effect of an enhanced recovery after surgery program on opioid use and patient-reported outcomes. *Obstet Gynecol*. 2018 Aug;132(2):281-290. Medline

Guidelines and Recommendations

Alternative Population — Not Specific to Patients With Gynecological Conditions

37. Chou R, Gordon DB, de Leon-Casasola OA, et al. Management of postoperative pain: a clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain*. 2016 Feb;17(2):131-157. Medline

Unclear Methodology and Alternative Population — Not Specific to Patients With Gynecological Conditions

38. MN Health Collaborative. Call to action: adult opioid postoperative prescribing. Minneapolis (MN): ICSI; 2019 Sep. https://www.icsi.org/wp-content/uploads/2019/09/Opioid-PostOp-CTA_Final-090519.pdf Accessed 2021 Jan 21.
See: Background and Principles (p.2-3); Recommendations: Postoperative Opioid Prescribing (p.4-5)

39. Pain Management Best Practices Inter-Agency Task Force. Pain management best practices inter-agency task force report: updates, gaps, inconsistencies, and recommendations (*final report*). Washington, D.C.: U.S. Department of Health and Human Services; 2019 May. https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf Accessed 2021 Jan 21.
See: 2.1 Approaches to Pain Management – Gaps and Recommendations (p.22); 2.2 Medication – Gaps and Recommendations (p.28-29)

Recommendations Not Specified in Abstract

40. Nelson G, Bakkum-Gamez J, Kalogera E, et al. Guidelines for perioperative care in gynecologic/oncology: Enhanced Recovery After Surgery (ERAS) Society recommendation-2019 update. *Int J Gynecol Cancer*. 2019 May;29(4):651-668. Medline

Review Articles

41. Azari L, Santoso JT, Osborne SE. Optimal pain management in total abdominal hysterectomy. *Obstet Gynecol Surv*. 2013 Mar;68(3):215-227. Medline

Additional References

42. CDC. Acute pain: postsurgical Pain. Centers for Disease Control and Prevention (CDC); 2020 May. https://www.cdc.gov/acute-pain/postsurgical-pain/ Accessed 2021 Jan 19.
See: Type III Expected Longer Term Recovery