

CADTH Reference List

Oxytocin Administration for Labour Induction and Augmentation

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Key Messages

- Two non-randomized studies were identified regarding the clinical effectiveness of oxytocin administration with the use of a safety checklist for labour induction and augmentation.
- Four evidence-based guidelines were identified regarding the administration of oxytocin for labour induction and augmentation.

Research Questions

1. What is the clinical effectiveness of oxytocin administered with the use of a safety checklist for labour induction and augmentation?
2. What are the evidence-based guidelines regarding the administration of oxytocin for labour induction and augmentation?

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 oxytocin, labour induction and augmentation, and safety protocols. No filters were applied to limit the retrieval by study type. A supplementary search was done for oxytocin and labour induction and augmentation, with CADTH-developed search filters applied to limit retrieval to guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English-language documents published between January 1, 2011 and October 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.

Results

Two non-randomized studies were identified regarding the clinical effectiveness of oxytocin administration with the use of a safety checklist for labour induction and augmentation.^{1,2} Four evidence-based guidelines were identified regarding the administration of oxytocin

Table 1: Selection Criteria

Criteria	Description
Population	Individuals who are pregnant
Intervention	Q1: Oxytocin administered with the use of a safety checklist for labour induction and augmentation Q2: Oxytocin administered for labour induction and augmentation
Comparator	Q1: Oxytocin administered without the use of a safety checklist for labour induction and augmentation; oxytocin administered with any alternative safety checklist Q2: Not applicable
Outcomes	Q1: Clinical effectiveness (e.g., vaginal delivery within 24 hours, emergency caesarean section, neonatal intensive care unit admissions, duration of labour, fetal outcomes [e.g., Apgar scores, tachysystole], fetal and maternal safety [e.g., adverse events, fetal heart rate abnormalities]) Q2: Recommendations regarding best practices of oxytocin administration for labour induction and augmentation (e.g., administration/titration protocols, appropriate patient populations, recommended safeguards)
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, evidence-based guidelines

for labour induction and augmentation.³⁻⁶ No relevant health technology assessments, systematic reviews, or randomized controlled trials were identified.

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

References

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

1. Sundin C, Mazac L, Ellis K, Garbo C. Implementation of an Oxytocin Checklist to Improve Clinical Outcomes. *MCN Am J Matern Child Nurs*. 2018;43(3):133-138. [PubMed](#)
2. Rohn AE, Bastek JA, Sammel MD, Wang E, Srinivas SK. Unintended clinical consequences of the implementation of a checklist-based, low-dose oxytocin protocol. *Am J Perinatol*. 2015;32(4):371-378. [PubMed](#)

Guidelines and Recommendations

3. Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors. Geneva (CH): World Health Organization. 2017. https://hetv.org/resources/reproductive-health/impac/Procedures/Induction_P17_P25.html Accessed 20 Oct 2021.
See: Oxytocin
4. Safe Administration of Oxytocin. Toronto (ON): Provincial Council for Maternal and Child Health. 2020. <https://www.pcmch.on.ca/wp-content/uploads/2019/09/PCMCH-Safe-Administration-of-Oxytocin.pdf> Accessed 20 Oct 2021.
See: Best Practice Recommendations, pages 21-41.
5. Intrapartum care for healthy women and babies. *Clinical guideline [CG190]*. London (UK): National Institute of Health and Care Excellence. 2017. <https://www.nice.org.uk/guidance/cg190> Accessed 20 Oct 2021.
See: Care and observations for women with regional analgesia: 1.9.11, pages 32,33; Possible routine interventions in first stage: 1.12.10 and 1.12.12, pages 56,57; Delay in first stage: 1.12.18, 1.12.19, 1.12.22, 1.12.23, pages 57-59; Oxytocin in second stage, page 61; Delay in the second stage: 1.13.25, page 63; Active and physiological management of the third stage: 1.14.13, page 67.
6. WHO recommendations for augmentation of labour. Geneva (CH): World Health Organization. 2014. https://apps.who.int/iris/bitstream/handle/10665/112825/9789241507363_eng.pdf;jsessionid=CEE34067A538DACEB9E9BACEA4AE4A51?sequence=1 Accessed 20 Oct 2021.
See: Summary list of WHO recommendations for augmentation of labour: Recommendations 4,5,14-16, and 19, page 5.

Appendix 1: References of Potential Interest

Randomized Controlled Trials

Alternative Outcomes

7. Dalbye R, Bernitz S, Olsen IC, et al. The Labor Progression Study: The use of oxytocin augmentation during labor following Zhang's guideline and the WHO partograph in a cluster randomized trial. *Acta Obstet Gynecol Scand.* 2019;98(9):1187-1194. [PubMed](#)

Non-Randomized Studies

Alternative Outcomes

8. Vitner D, Lipworth H, Weiner E, et al. The effect of the implementation of institutional checklist on expert opinion of oxytocin use in labor. *Arch Gynecol Obstet.* 2020;302(1):127-131. [PubMed](#)

Alternative Intervention

9. Rossen J, Ostborg TB, Lindtjorn E, Schulz J, Eggebo TM. Judicious use of oxytocin augmentation for the management of prolonged labor. *Acta Obstet Gynecol Scand.* 2016;95(3):355-361. [PubMed](#)

Guidelines and Recommendations

Methodology Not Specified

10. Association of Women's Health, Obstetric and Neonatal Nurses. Guidelines for Active Management of the Third Stage of Labor using Oxytocin: AWHONN Practice Brief Number 12. *Nurs Womens Health.* 2021;25(4):e1-e4. [PubMed](#)
11. Writing g, Nunes I, Dupont C, et al. European Guidelines on Perinatal Care - Oxytocin for induction and augmentation of labor[Formula: see text]. *J Matern Fetal Neonatal Med.* 2021;1-7. [PubMed](#)
12. OXYTOCIN FOR INDUCTION OR AUGMENTATION OF LABOUR. LOCAL OPERATING PROCEDURE – CLINICAL. Sydney (AU): Royal Hospital for Women. 2020. <https://www.seslh.health.nsw.gov.au/sites/default/files/documents/Oxytocininductionaugmentationlabour20.pdf> Accessed 20 Oct 2021.
13. Oxytocin for Induction and Augmentation of Labour. Auckland (NZ): Auckland District Health Board. 2019. <http://www.nationalwomenshealth.adhb.govt.nz/assets/Womens-health/Documents/Policies-and-guidelines/Oxytocin-Syntocinon-for-Induction-and-Augmentation-of-Labour.pdf> Accessed 20 Oct 2021.
14. INDUCTION/AUGMENTATION OF LABOUR WITH OXYTOCIN. Edmonton (AB): Alberta Health Services. 2018. <https://extranet.ahsnet.ca/teams/policydocuments/1/clp-womens-health-induction-augmentation-labour-oxytocin-hcs-221-01.pdf> Accessed 20 Oct 2021.
15. Induction and Augmentation of Labour Guideline. Barnstaple (UK): Northern Devon Healthcare NHS Trust. 2018. <https://www.northdevonhealth.nhs.uk/wp-content/uploads/2018/08/Induction-and-Augmentation-of-Labour-Guideline-Oct18.pdf> Accessed 20 Oct 2021.
16. South Australian Perinatal Practice Guideline: Oxytocin augmentation and induction of labour infusion. Adelaide (AU): Department for Health and Wellbeing. 2018. https://www.sahealth.sa.gov.au/wps/wcm/connect/c21671004ee53776a6beafdf150ce4f37/Oxytocin+Augmentation+and+IOL_PPG_v5_1.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-c21671004ee53776a6beafdf150ce4f37-nxyTzmV Accessed 20 Oct 2021.
See: Summary of Practice Recommendations, page 4.
17. Induction of labour: Clinical guidance. Victoria (AU): Victorian Agency for Health Information. 2018. <https://www.bettersafercare.vic.gov.au/clinical-guidance/maternity/induction-of-labour> Accessed 20 Oct 2021.
18. Induction of labor. Brisbane (AU): Queensland Health. 2017. https://www.health.qld.gov.au/_data/assets/pdf_file/0020/641423/g-iol.pdf Accessed 20 Oct 2021.
See: 4. Methods of IOL: After cervical ripening/ cervix favourable recommendation, page 17.
19. Practice guideline: Induction and augmentation of labour and cervical ripening of labour. Winnipeg (MB): Winnipeg Regional Health Authority. 2017. <https://professionals.wrha.mb.ca/old/extranet/eipt/files/EIPT-043-01.pdf> Accessed 20 Oct 2021.
See: 4.5 Oxytocin, page 3.

Review Articles

20. Kernberg A, Caughey AB. Augmentation of Labor: A Review of Oxytocin Augmentation and Active Management of Labor. *Obstet Gynecol Clin North Am.* 2017;44(4):593-600. [PubMed](#)
21. Page K, McCool WF, Guidera M. Examination of the Pharmacology of Oxytocin and Clinical Guidelines for Use in Labor. *J Midwifery Womens Health.* 2017;62(4):425-433. [PubMed](#)

Additional References

22. Intrapartum care. *Quality standard [QS105]*. London (UK): National Institute of Health and Care Excellence. 2017. <https://www.nice.org.uk/guidance/qs105> Accessed 20 Oct 2021.
23. Quality Statement 8: Induction and Augmentation of Labour. Toronto (ON): Health Quality Ontario. <https://www.hqontario.ca/Evidence-to-Improve-Care/Quality-Standards/View-all-Quality-Standards/Vaginal-Birth-After-Caesarean-VBAC/Quality-Statement-8-Induction-and-Augmentation-of-Labour> Accessed 20 Oct 2021.