



CADTH Reference List

Point-of-Care Testing for Acetaminophen

February 2024

Key Messages

- We did not find any studies on the clinical utility or cost-effectiveness of point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose.
- We did not find any evidence-based guidelines regarding point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose.

Research Questions

1. What is the clinical utility of point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose?
2. What is the cost-effectiveness of point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose?
3. What are the evidence-based recommendations regarding point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose?

Methods

Literature Search Methods

An information specialist conducted a literature search on December 4, 2023, of key resources including MEDLINE, the Cochrane Database of Systematic Reviews, the International HTA Database, the websites of Canadian and international health technology agencies, and Google. The search strategies were informed by a previous search (Tran K, Horton J. [Point-of-Care Testing and N-Acetylcysteine for Acute Acetaminophen Overdose](#). Ottawa (ON): CADTH: 2021), as well as developed from elements of the research questions and selection criteria. They included both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. We limited the searches to English-language documents published since the date of the last previous report from January 1, 2021.

The first search strategy contained the concept acetaminophen overdose and CADTH-developed search filters were applied to limit retrievals to health technology assessments, systematic reviews, meta-analyses, indirect treatment comparisons, any types of clinical trials or observational studies, economic studies, and guidelines.

The second search strategy contained concepts for acetaminophen and point of care urinalysis. We did not apply any study design search filters to the second search.

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 available.

Table 1: Selection Criteria

Criteria	Description
Population	Q1, Q2, and Q3: Patients with suspected acute acetaminophen overdose
Intervention	Q1, Q2, and Q3: Any POC device to measure acute acetaminophen overdose
Comparator	Q1 and Q2: Laboratory-based diagnostic tests or any other diagnostic tests that measure acute acetaminophen overdose Q3: Not applicable
Outcomes	Q1: Clinical utility (e.g., time to overdose treatment, incidence of overdose-related adverse events, safety, overdose-related mortality) Q2: Cost-effectiveness (e.g., cost-benefit of point-of-care testing vs. usual diagnostic test, costs associated with acetaminophen toxicity treatment, QALYs gained, ICERs) Q3: Recommendations regarding the use of POC devices for patients with suspected acute acetaminophen overdose
Study designs	Health technology assessments, systematic reviews, randomized controlled trials, nonrandomized studies, economic evaluations, evidence-based guidelines

ICER = incremental cost-effectiveness ratio; POC = point-of-care; QALY = quality-adjusted life-year.

Results

No relevant health technology assessments, systematic reviews, randomized controlled trials, nonrandomized studies, or economic evaluations were identified about the clinical utility or cost-effectiveness of point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose. No evidence-based guidelines were identified regarding point-of-care devices that measure acetaminophen toxicity for patients with suspected overdose.

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

No literature identified.

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Guidelines and Recommendations

No literature identified.

Appendix 1: References of Potential Interest

Previous CADTH Reports

Tran K, Horton J. Point-of-care testing and n-acetylcysteine for acute acetaminophen overdose. Ottawa (ON): CADTH; 2021; <https://www.cadth.ca/sites/default/files/pdf/htis/2021/RC1372%20Acetaminophen%20Final.pdf>. Accessed 2024 Jan 16.

Clark M, Hodgson A. Point of care devices for assessing acetaminophen toxicity. Ottawa (ON): CADTH; 2007. <https://www.cadth.ca/sites/default/files/pdf/htis/Point%20of%20Care%20Devices%20for%20Acetaminophen%20Toxicity.pdf>. Accessed 2024 Jan 16.

Additional References

Handbook

Treatment of paracetamol overdose. NHS Greater Glasgow and Clyde. Adult Therapeutics Handbook. Glasgow (GB): 2023; <https://handbook.ggcmedicines.org.uk/guidelines/drug-overdose-and-toxicity/treatment-of-paracetamol-overdose/>. Accessed 2024 Jan 16.

Refer to: Paracetamol Overdose Presenting >24 hours and Therapeutic Excess Paracetamol Overdose.

Authors: Candice Madakadze, Quenby Mahood

Contributor: Camille Santos, Sara Khangura

Cite As: *Point-of-Care Testing for Acetaminophen*. (CADTH reference list). Ottawa: CADTH; 2024 Feb.

Disclaimer: The information in this document is intended to help Canadian health care decision-makers, health care professionals, health systems leaders, and policy-makers make well-informed decisions and thereby improve the quality of health care services. While patients and others may access this document, the document is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose. The information in this document should not be used as a substitute for professional medical advice or as a substitute for the application of clinical judgment in respect of the care of a particular patient or other professional judgment in any decision-making process. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not endorse any information, drugs, therapies, treatments, products, processes, or services.

While care has been taken to ensure that the information prepared by CADTH in this document is accurate, complete, and up to date as at the applicable date the material was first published by CADTH, CADTH does not make any guarantees to that effect. CADTH does not guarantee and is not responsible for the quality, currency, propriety, accuracy, or reasonableness of any statements, information, or conclusions contained in any third-party materials used in preparing this document. The views and opinions of third parties published in this document do not necessarily state or reflect those of CADTH.

CADTH is not responsible for any errors, omissions, injury, loss, or damage arising from or relating to the use (or misuse) of any information, statements, or conclusions contained in or implied by the contents of this document or any of the source materials.

This document may contain links to third-party websites. CADTH does not have control over the content of such sites. Use of third-party sites is governed by the third-party website owners' own terms and conditions set out for such sites. CADTH does not make any guarantee with respect to any information contained on such third-party sites and CADTH is not responsible for any injury, loss, or damage suffered as a result of using such third-party sites. CADTH has no responsibility for the collection, use, and disclosure of personal information by third-party sites.

Subject to the aforementioned limitations, the views expressed herein do not necessarily reflect the views of Health Canada, Canada's provincial or territorial governments, other CADTH funders, or any third-party supplier of information.

This document is prepared and intended for use in the context of the Canadian health care system. The use of this document outside of Canada is done so at the user's own risk.

This disclaimer and any questions or matters of any nature arising from or relating to the content or use (or misuse) of this document will be governed by and interpreted in accordance with the laws of the Province of Ontario and the laws of Canada applicable therein, and all proceedings shall be subject to the exclusive jurisdiction of the courts of the Province of Ontario, Canada.

The copyright and other intellectual property rights in this document are owned by CADTH and its licensors. These rights are protected by the Canadian *Copyright Act* and other national and international laws and agreements. Users are permitted to make copies of this document for non-commercial purposes only, provided it is not modified when reproduced and appropriate credit is given to CADTH and its licensors.

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.

Funding: CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

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