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.

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