



TITLE: N-Acetylcysteine for Acute Acetaminophen Overdose in the Pre-Hospital Setting: Guidelines

DATE: 23 June 2015

RESEARCH QUESTION

What are the evidence-based guidelines regarding the administration of intravenous n-acetylcysteine for patients with acute acetaminophen overdose in the pre-hospital setting?

KEY FINDINGS

One evidence-based guideline was identified regarding the administration of intravenous n-acetylcysteine for patients with acute acetaminophen overdose in the pre-hospital setting.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, ECRI, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. The search was limited to English language documents published between Jan 1, 2010 and Jun 12, 2015. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

SELECTION CRITERIA

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

Disclaimer: The Rapid Response Service is an information service for those involved in planning and providing health care in Canada. Rapid responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that CADTH could identify using all reasonable efforts within the time allowed. Rapid responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

Copyright: This report contains CADTH copyright material and may contain material in which a third party owns copyright. **This report may be used for the purposes of research or private study only.** It may not be copied, posted on a web site, redistributed by email or stored on an electronic system without the prior written permission of CADTH or applicable copyright owner.

Links: This report may contain links to other information available on the websites of third parties on the Internet. CADTH does not have control over the content of such sites. Use of third party sites is governed by the owners' own terms and conditions.

Table 1: Selection Criteria

Population	Adults patients in the pre-hospital setting with acute acetaminophen overdose
Intervention	N-acetylcysteine infusion
Comparator	No comparator
Outcomes	Evidence-based guidelines and best practices for administration and monitoring
Study Designs	Health technology assessments, systematic reviews, meta-analyses, evidence-based guidelines

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 evidence-based guidelines.

One evidence-based guideline was identified regarding the administration of intravenous n-acetylcysteine for patients with acute acetaminophen overdose in the pre-hospital setting. No relevant health technology assessments, systematic reviews, or meta-analyses were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One evidence-based guideline¹ was identified regarding N-acetylcysteine infusion for acetaminophen overdose in the pre-hospital setting. The guideline recommends the use of activated charcoal if the patient is alert, acetaminophen has previously been ingested within two hours, and if N-acetylcysteine cannot be administered within an eight hour window of acetaminophen ingestion. The guideline also recommends all patients experiencing acetaminophen overdose who are at risk of hepatotoxicity should receive N-acetylcysteine; however, no recommendations specific to pre-hospital administration were made.

REFERENCES SUMMARIZED

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-analyses

No literature identified.

Guidelines and Recommendations

1. Management of poisoning. MOH clinical practice guidelines [Internet]. Singapore, Malaysia: Ministry of Health; 2011 Dec. [cited 2015 Jun 16]. Available from: https://www.moh.gov.sg/content/dam/moh_web/HPP/Pharmacists/cpg_pharmacy/management%20of%20poisoning%20-%20booklet.pdf
See: Management of Paracetamol Poisoning, pages 14, 110-112

PREPARED BY:

Canadian Agency for Drugs and Technologies in Health

Tel: 1-866-898-8439

www.cadth.ca

APPENDIX – FURTHER INFORMATION:

Clinical Practice Guidelines – Pre-Hospital Setting Not Specified

2. Nambiar NJ. Management of paracetamol poisoning: the old and the new. Journal of Clinical and Diagnostic Research [Internet]. 2015 [cited 2015 Jun 16];6(6):1101-04. Available from: [http://www.icdr.net/articles/PDF/2342/50%20-%203944_E\(C\)_F\(T\)_PF1\(V\)_PF\(A\)_PF\(R\)_U\(P\).pdf](http://www.icdr.net/articles/PDF/2342/50%20-%203944_E(C)_F(T)_PF1(V)_PF(A)_PF(R)_U(P).pdf)
3. Medicines & Healthcare products Regulatory Agency. Drug safety update: treating paracetamol overdose with intravenous acetylcysteine: new guidance [Internet]. GOV.UK; 2012 Sep 25. [cited 2015 Jun 22]. Available from: <https://www.gov.uk/drug-safety-update/treating-paracetamol-overdose-with-intravenous-acetylcysteine-new-guidance>

Additional References

4. Nfila G, Lee S, Binchy J. Impact of new UK paracetamol overdose guidelines on patients presenting to the emergency department. Ir Med J. 2014 Feb;107(2):47-8. [PubMed: PM24654483](https://pubmed.ncbi.nlm.nih.gov/24654483/)