



TITLE: Higher than Recommended Doses of Epinephrine for Patients with an Allergic Reaction: Clinical Evidence and Safety

DATE: 03 May 2011

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the long-term side effects of higher than recommended doses of epinephrine given to patients with an allergic reaction?
2. What is the evidence of the frequency of adverse effects reported following higher than recommended doses of epinephrine given to patients with an allergic reaction?
3. What is the evidence regarding the frequency of higher than recommended dosing with epinephrine in patients with an allergic reaction?

KEY MESSAGE

No evidence was identified pertaining to the long-term side effects of higher than recommended doses of epinephrine given to patients with an allergic reaction, the frequency of these adverse effects, and the frequency of higher than recommended dosing with epinephrine in patients with an allergic reaction.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2011, Issue 3), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials and non-randomized studies containing safety data. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between Jan 1, 2006 and April 20, 2011. Internet links were provided, where available.

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.

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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.

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 randomized controlled trials and non-randomized studies.

No literature was identified pertaining to the clinical evidence regarding the long-term side effects of higher than recommended doses of epinephrine given to patients with an allergic reaction, the frequency of these adverse effects, or the frequency of improper dosing of epinephrine in patients with an allergic reaction. Additional studies of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

No relevant studies were identified; therefore, no summary pertaining to the long-term side effects of higher than recommended doses of epinephrine given to patients with an allergic reaction, the frequency of these adverse effects, and the frequency of improper dosing with epinephrine in patients with an allergic reaction was provided.

REFERENCES SUMMARIZED

Health technology assessments

No literature identified.

Systematic reviews and meta-analyses

No literature identified.

Randomized controlled trials

No literature identified.

Non-randomized studies

No literature identified.

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APPENDIX – FURTHER INFORMATION:

Systematic reviews

1. Sheikh A, Shehata YA, Brown SG, Simons FE. Adrenaline (epinephrine) for the treatment of anaphylaxis with and without shock. Cochrane Database Syst Rev. 2008;(4):CD006312. [PubMed: PM18843712](#)
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Review articles

2. Simons FE. Anaphylaxis: Recent advances in assessment and treatment. J Allergy Clin Immunol [Internet]. 2009 Oct [cited 2011 Apr 20];124(4):625-36. Available from: http://www.idpublications.com/journals/PDFs/JACI/JACI_MostDown_1.pdf
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Non-randomized studies (Case reports and case series)

3. Kanwar M, Irvin CB, Frank JJ, Weber K, Rosman H. Confusion about epinephrine dosing leading to iatrogenic overdose: a life-threatening problem with a potential solution. Ann Emerg Med. 2010 Apr;55(4):341-4.
[PubMed: PM20031267](#)
4. Izgi C, Cevik C, Nugent K. Severe myocardial ischemia after concentrated epinephrine use for the treatment of anaphylaxis: Kounis syndrome or epinephrine effect? Heart Lung [Internet]. 2010 Mar [cited 2011 Apr 20];39(2):160-3. Available from: <https://emergencycare.nhmrc.gov.au/gateway/forum/files/Myocardial%20ischaemia%20Anaphylaxis.pdf.pdf>
[PubMed: PM20207277](#)

Survey Report

5. Lightfoot CB, Abraham RJ, Mammen T, Abdoell M, Kapur S, Abraham RJ. Survey of radiologists' knowledge regarding the management of severe contrast material-induced allergic reactions. Radiology. 2009 Jun;251(3):691-6.
[PubMed: PM19474374](#)

Datasheets

6. EpiPen® 300 µg Adrenaline Auto-Injector [Internet]. Basking Ridge (NJ): Dey Pharma, L.P.; 2011 Dec 1. [cited 2011 Apr 20]. Available from: <http://www.medsafe.govt.nz/profs/Datasheet/e/EpiPeninj.pdf>
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7. Anapen® 300 µg Adrenaline auto-injector and Anapen® Junior 150 µg Adrenaline auto injector [Internet]. Auckland (NZ): Link Pharmaceuticals Ltd; 2009 Nov 23. [cited 2011 Apr 20]. Available from: <http://www.medsafe.govt.nz/profs/Datasheet/a/anapeninj.pdf>
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