Canadian Agency for Drugs and Technologies in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

TITLE: Intranasal versus Intravenous Naloxone for Opioid Overdose in the Pre-Hospital Setting: Comparative Clinical Effectiveness

DATE: 10 June 2014

RESEARCH QUESTION

What is the comparative clinical effectiveness of intranasal (IN) versus intravenous (IV) naloxone for the treatment of suspected or apparent opioid overdose in the pre-hospital setting?

KEY MESSAGE

Two non-randomized studies regarding the comparative clinical effectiveness of IN versus IV naloxone for the treatment of suspected or apparent opioid overdose in the pre-hospital setting were identified.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 6), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2009 and June 4, 2014.

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.

Two non-randomized studies regarding the comparative clinical effectiveness of IN versus IV naloxone for the treatment of opioid overdose in the pre-hospital setting were identified. No relevant health technology assessment reports, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Two non-randomized studies[1,2] examined the comparative clinical effectiveness of IN versus IV naloxone for the treatment of opioid overdose in the pre-hospital setting. In both studies, IN naloxone demonstrated equal clinical effectiveness to IV naloxone for this indication.[1,2] Time to onset of clinical response was longer following IN than IV naloxone administration, but treatment was initiated more rapidly in the IN group, thus balancing the total time from presentation to clinical response in both groups.[2] The authors suggested that, given the similar effectiveness of both routes of administration and the risks associated with using needles to deliver drugs intravenously, IN naloxone was a good alternative to IV naloxone for the treatment of opioid overdose.[1,2]

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

1. Merlin MA, Saybolt M, Kapitanyan R, Alter SM, Jeges J, Liu J, et al. Intranasal naloxone delivery is an alternative to intravenous naloxone for opioid overdoses. Am J Emerg Med. 2010 Mar;28(3):296-303.
PM:20223386

2. Robertson TM, Hendey GW, Stroh G, Shalit M. Intranasal naloxone is a viable alternative to intravenous naloxone for prehospital narcotic overdose. Prehosp Emerg Care. 2009 Oct;13(4):512-5.
PM:19731165

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APPENDIX – FURTHER INFORMATION:

Randomized Controlled Trials

Hospital Setting

3. Sabzghabaee AM, Eizadi-Mood N, Yaraghi A, Zandifar S. Naloxone therapy in opioid overdose patients: intranasal or intravenous? A randomized clinical trial. Arch Med Sci [Internet]. 2014 [cited 2014 Jun 10];10(2):309-14. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4042052/pdf/AMS-10-22713.pdf

Alternate Route of Administration for Comparator

4. Kerr D, Kelly AM, Dietze P, Jolley D, Barger B. Randomized controlled trial comparing the effectiveness and safety of intranasal and intramuscular naloxone for the treatment of suspected heroin overdose. Addiction. 2009 Dec;104(12):2067-74. PM:19922572

Alternate Outcome

5. McDermott C, Collins NC. Prehospital medication administration: a randomised study comparing intranasal and intravenous routes. Emerg Med Int. 2012;2012:476161. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3431081 PM:22953064

Review Articles

6. Wermeling DP. A Response to the Opioid Overdose Epidemic: Naloxone Nasal Spray. Drug Deliv Transl Res. 2013 Feb 1;3(1):63-74. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3668569 PM:23734342

Additional References

7. Therapeutic Intranasal Drug Delivery [Internet]. Intranasal.net. Intranasal Naloxone for acute opiate overdose: Reducing needle stick risk, improving time to medication delivery; [date unknown] Available from: http://intranasal.net/OpiateOverdose/
See: Paramedic use of intra-nasal naxolone

8. Intranasal naloxone and opioid overdose [Internet]. New York: Open Society Foundations; [2012]. [cited 2014 Jun 10]. (Public health fact sheet). Available from: http://www.opensocietyfoundations.org/sites/default/files/intranasal-naloxone-04112012_1.pdf
See: Evidence for Intranasal Naloxone

9. Wiese M. BestBETs: Best evidence topics [Internet]. Manchester: BestBETs. Intranasal versus injectable naloxone for opioid overdose; 2005; Modified 2010 [cited 2014 Jun 10]. Available from: http://www.bestbets.org/bets/bet.php?id=1073

10. Kelly A, Kerr D, Dietze P. Intranasal naloxone for treatment of opioid overdose. In: Dean RL, Bilsky EJ, Negus SS, editors. Opiate receptors and antagonists: from bench to clinic. New York: Human Press; 2009 Apr 2. (Contemporary neuroscience).