



Canadian Agency for
Drugs and Technologies
In Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS



TITLE: Intrapocket Antibiotics to Prevent Infections from Implantable Cardioverter-Defibrillator and Pacemaker for Adult Patients Undergoing Device Insertion: A Review of Clinical Evidence and Comparative Clinical Effectiveness

DATE: 6 January 2012

RESEARCH QUESTIONS

1. What is the clinical evidence for using intrapocket antibiotics in order to prevent device infections in adult patients undergoing implantable cardioverter- defibrillator (ICD) or pacemaker insertion?
2. What is the comparative clinical-effectiveness of intrapocket antibiotics versus intravenous antibiotic administration for adult patients undergoing ICD or pacemaker insertion?

KEY MESSAGE

Limited evidence was identified regarding both the clinical evidence for using intrapocket antibiotics in order to prevent device infections and the comparative clinical-effectiveness of intrapocket antibiotics versus intravenous antibiotic administration for adult patients undergoing implantable ICD or pacemaker insertion. Therefore, no definitive conclusions can be made.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2011, Issue 12), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and abbreviated list of major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2006 and December 15, 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.

One non-randomized study was identified regarding clinical evidence for using intrapocket antibiotics in order to prevent device infections in adult patients undergoing implantable ICD or pacemaker insertion. Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One non-randomized study¹ sought to determine the rate of cardiovascular implantable electronic device (CIED) implantation success and CIED infection in procedures employing the AIGIS(Rx) antibacterial envelope to the generator pocket with the CIED. The authors found that CIED procedures that used the AIGIS(Rx) antibacterial envelope had a high rate of CIED implantation success and a low rate of infection.

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. Bloom HL, Constantin L, Dan D, De Lurgio DB, El-Chami M, Ganz LI, et al. Implantation success and infection in cardiovascular implantable electronic device procedures utilizing an antibacterial envelope. *Pacing Clin Electrophysiol.* 2011 Feb;34(2):133-42.
PubMed: PM20942819

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APPENDIX – FURTHER INFORMATION:

Non-randomized studies (method of antibiotic prophylaxis not specified)

2. Metais M, Hebrard A, Duparc A, Mondoly P, Delay M, Lepage B, et al. Cardiac implantable devices: surveillance of surgical site infections and assessment of professional practices. *Arch Cardiovasc Dis.* 2011 May;104(5):325-31.
[PubMed: PM21693369](#)
3. Cengiz M, Okutucu S, Ascioğlu S, Sahin A, Aksoy H, Sinan DO, et al. Permanent pacemaker and implantable cardioverter defibrillator infections: seven years of diagnostic and therapeutic experience of a single center. *Clin Cardiol.* 2010 Jul;33(7):406-11.
[PubMed: PM20641117](#)
4. Klug D, Balde M, Pavin D, Hidden-Lucet F, Clementy J, Sadoul N, et al. Risk factors related to infections of implanted pacemakers and cardioverter-defibrillators: results of a large prospective study. *Circulation.* 2007 Sep 18;116(12):1349-55.
[PubMed: PM17724263](#)
5. Sohail MR, Uslan DZ, Khan AH, Friedman PA, Hayes DL, Wilson WR, et al. Risk factor analysis of permanent pacemaker infection. *Clin Infect Dis.* 2007 Jul 15;45(2):166-73.
[PubMed: PM17578774](#)

Review Articles

6. Margey R. Cardiac implantable electronic device infections: the enemy that lurks beneath the skin. *J Long Term Eff Med Implants.* 2010;20(3):203-17.
[PubMed: PM21395519](#)
7. Borek PP, Wilkoff BL. Pacemaker and ICD leads: strategies for long-term management. *J Interv Card Electrophysiol.* 2008 Oct;23(1):59-72.
[PubMed: PM18392929](#)