TITLE: Amiodarone versus Lidocaine for Arrhythmias: Comparative Clinical Effectiveness

DATE: 08 January 2016

RESEARCH QUESTION

What is the comparative clinical effectiveness of intravenous amiodarone versus intravenous lidocaine for patients in cardiac arrest or with life-threatening arrhythmias?

KEY FINDINGS

One systematic review, two randomized controlled trials, and one non-randomized study were identified regarding intravenous amiodarone versus intravenous lidocaine for arrhythmias.

METHODS

A limited literature search, with main concepts appearing in title or major subject heading, was conducted on key resources including PubMed, The Cochrane Library, 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 the search to limit the retrieval by study type. The search retrieval was limited to the human population where possible and English language documents published between January 1, 2005 and December 16, 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.
Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Patients in cardiac arrest or with refractory arrhythmias (e.g., shock-resistant ventricular fibrillation or tachycardia)</th>
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</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>IV Amiodarone</td>
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<tr>
<td>Comparator</td>
<td>IV Lidocaine</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Clinical benefits and harms (e.g., mortality)</td>
</tr>
<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, and non-randomized studies</td>
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</tbody>
</table>

IV = intravenous

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 systematic review, two randomized controlled trials, and one non-randomized study were identified regarding intravenous amiodarone versus intravenous lidocaine for arrhythmias. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Four studies1-4 were identified regarding the use of intravenous amiodarone versus intravenous lidocaine for arrhythmias. One systematic review1 found no significant difference between lidocaine and other antiarrhythmic drugs, including amiodarone, for the outcomes of all-cause mortality and ventricular fibrillation in persons with myocardial infarction. One randomized controlled trial2 showed no difference in ventricular fibrillation between lidocaine and amiodarone for patients undergoing coronary bypass grafting; however, the study reported that amiodarone reduced the need for electrical defibrillation. One randomized controlled trial3 concluded the use of lidocaine, compared with both amiodarone and placebo, reduced the incidence of ventricular fibrillation in patients undergoing open-heart surgery. One non-randomized study4 reported decreased survival for in-patients with cardiac arrest that received amiodarone, compared with lidocaine, but study authors reported that inadequate dosing of amiodarone and differences in administration were confounding factors for this study.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses

Randomized Controlled Trials


Non-Randomized Studies

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APPENDIX – FURTHER INFORMATION:

**Systematic Reviews – Route of Drug Administration Not Specified**

PubMed: PM23938138

PubMed: PM21444143

**Randomized Controlled Trials – Route of Drug Administration Not Specified**

PubMed: PM24575137

PubMed: PM22770549

**Non-Randomized Studies – Route of Drug Administration Not Specified**

PubMed: PM24361455

PubMed: PM25201023

PubMed: PM20959785