TITLE: Acetylsalicylic Acid for Venous Thromboembolism Prophylaxis: an Update of Clinical Evidence

DATE: 15 August 2014

RESEARCH QUESTION

What is the clinical evidence for the use of acetylsalicylic acid for venous thromboembolism prophylaxis in patients undergoing total hip or total knee replacement?

KEY FINDINGS

Two systematic reviews, two randomized controlled trials, and two non-randomized studies were identified regarding the use of acetylsalicylic acid (ASA) for venous thromboembolism (VTE) prophylaxis in patients undergoing total hip or total knee replacement.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 8), 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. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2011 and August 7, 2014. 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**

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<thead>
<tr>
<th>Table 1: Selection Criteria</th>
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<tbody>
<tr>
<td><strong>Population</strong></td>
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<td><strong>Intervention</strong></td>
</tr>
<tr>
<td><strong>Comparator</strong></td>
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<td><strong>Outcomes</strong></td>
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<tr>
<td><strong>Study Designs</strong></td>
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**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 systematic reviews, two randomized controlled trials, and two non-randomized studies were identified. No health technology assessments or meta-analyses were identified. Additional references of potential interest are provided in the appendix.

**OVERALL SUMMARY OF FINDINGS**

Two systematic reviews were identified.\(^1\)\(^2\) One review\(^1\) included eight randomized controlled trials (RCTs) of patients (n = 1,408) who received either aspirin or anticoagulants following major lower extremity orthopedic surgery. The authors concluded that aspirin was associated with a non-statistically significant lower bleeding risk than anticoagulants, and rates of deep vein thrombosis (DVT) did not differ significantly following knee or hip arthroplasty. The second systematic review\(^2\) included five studies (study type not specified) of patients (n = 5,179) receiving either ASA or anticoagulants following total hip or total knee replacement. The review found that patients receiving ASA had higher rates of VTE, but could not reach firm conclusions due to the low quality of the included studies and heterogeneity of the findings.

Two RCTs\(^3\)\(^4\) studied patients undergoing total knee arthroplasty (TKA). One trial\(^3\) compared post-surgical patients (n = 120) receiving either aspirin or low-molecular-weight heparin (LMWH) sodium and rivaroxaban sequentially. Patients in both groups also received postoperative mechanical measures for the prevention of VTE. The authors of this study concluded that aspirin in combination with mechanical measures was effective in preventing VTE after TKA, resulting in less blood loss and less subcutaneous ecchymosis. A second RCT\(^4\) compared patients (n = 324) receiving either aspirin, LMWH, or rivaroxaban postoperatively, and found no significant difference in DVT incidence between aspirin and LMWH.

Two non-randomized studies\(^5\)\(^6\) reported on the safety aspects of aspirin therapy following TKA. One study\(^5\) examined the safety of aspirin compared with Coumadin following TKA (n = 2,017), in combination with preoperative VTE risk stratification, mechanical prophylaxis, and early mobilization for both groups. There were no significant differences in bleeding, complications, readmission, or 90-day mortality between the two groups. A second study\(^6\) used data from a UK
national joint registry to compare the safety of aspirin with LMWH following TKA (n = 156,798). There were no significant differences in 90-day mortality or major hemorrhage between the two groups, but the aspirin group was significantly more likely to need to return to the operating room (no further detail regarding reasons for this was provided in the abstract).
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials


Non-Randomized Studies (Safety Only)


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APPENDIX – FURTHER INFORMATION:

Randomized Controlled Trials – Combined Drug Therapy


Non-Randomized Studies (Safety Only) – Combined Drug Therapy


Economic Evaluations


Guidelines and Recommendations


Review Articles
