Review: Aspirin reduces CAD events in persons with no history of cardiovascular disease, but it increases gastrointestinal bleeding


QUESTION
What are the benefits and harms of aspirin use to prevent coronary artery disease (CAD) events in persons with no history of cardiovascular disease?

DATA SOURCES
Studies were identified by searching MEDLINE (1966 to May 2001), reviewing bibliographies of relevant studies and systematic reviews, and contacting experts.

STUDY SELECTION
Randomized controlled trials (RCTs) of aspirin-related benefits were selected if they compared aspirin with placebo or no aspirin; included participants with no history of cardiovascular disease; had a duration ≥ 1 year; and assessed myocardial infarction (MI), stroke, and mortality. Case–control studies, RCTs, and systematic reviews of aspirin-related harms were selected if they assessed hemorrhagic stroke or gastrointestinal (GI) bleeding.

DATA EXTRACTION
Data were extracted on duration of treatment, patient characteristics, aspirin dosage, control condition, and additional therapies. Quality of trials was assessed.

MAIN RESULTS
5 RCTs (n = 035) were included in the meta-analysis: the British Male Doctors’ Trial, the Physicians’ Health Study (PHS), the Thrombosis Prevention Trial (TPT), the Hypertension Optimal Treatment Trial, and the Primary Prevention Project. Most participants were men (78%) and were middle-aged, and aspirin dosage was ≤ 162 mg/d in 4 trials and 500 mg/d in 1 trial. Study quality was high overall. Meta-analyses showed that aspirin reduced the combined outcome of nonfatal MI or death from CAD but did not differ from the control intervention for CAD mortality alone, all-cause mortality, or stroke (Table). Previous meta-analyses that included the 5 trials showed that aspirin increased their risk for a major GI bleeding event but did not differ from the control intervention for hemorrhagic stroke (Table).

CONCLUSIONS
In persons with no history of cardiovascular disease, aspirin reduces the risk for overall coronary artery disease events but does not affect the risk for CAD mortality, all-cause mortality, or stroke. The risk for gastrointestinal bleeding is increased, but the risk for hemorrhagic stroke is not.

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For correspondence: Dr. M. Pignone, University of North Carolina Hospital, Chapel Hill, NC, USA. E-mail pignone@med.unc.edu.

Aspirin vs the control intervention for prevention of coronary artery disease (CAD) events in persons with no history of cardiovascular disease

<table>
<thead>
<tr>
<th>Outcomes at 3 to 7 y</th>
<th>Weighted event rates</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aspirin</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>Total coronary events</td>
<td>1.9%</td>
<td>2.4%</td>
<td>13% (9 to 39)</td>
</tr>
<tr>
<td>CAD mortality</td>
<td>0.67%</td>
<td>0.63%</td>
<td>13% (9 to 39)</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>3.5%</td>
<td>3.4%</td>
<td>7% (2 to 16)</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.4%</td>
<td>1.3%</td>
<td>2% (15 to 23)</td>
</tr>
<tr>
<td>Major gastrointestinal bleeding†</td>
<td>0.8%</td>
<td>0.48%</td>
<td>69% (40 to 109)</td>
</tr>
<tr>
<td>Hemorrhagic stroke†</td>
<td>0.22%</td>
<td>0.17%</td>
<td>40% (10 to 100)</td>
</tr>
</tbody>
</table>

‡Abbreviations defined in Glossary; RRR, RRI, NNT, NNH, and CI calculated from data in article by using a random-effects model.

REFERENCES