

Acetylsalicylic acid for primary prevention of cardiovascular events

Paul Fritsch MD Michael R. Kolber MD CCFP MSc

Clinical question

Is acetylsalicylic acid (ASA) effective in reducing cardiovascular (CV) events in patients without pre-existing CV disease (CVD)?

Bottom line

Three recent large RCTs of moderate-risk, elderly, and diabetic patients do not support the use of ASA for primary prevention. The potential absolute benefit of about 1% is offset by a similar increase in major bleeding. All-cause and cancer mortality were either unchanged or increased with ASA.

Evidence

There were 3 high-quality, placebo-controlled RCTs of 100 mg per day of ASA.

- One followed 12546 patients at moderate CV risk (10-year risk of 10% to 20% [mean 17%]).¹ Patients were predominantly men (71%); mean age was 64 years.
 - After 5 years, there was no difference in composite CV events (4.3% vs 4.5% for placebo). The mortality rate was 2.6% in each arm.
 - Major gastrointestinal bleeds increased with ASA (0.3% vs 0.1% for placebo; number needed to harm [NNH] of 345).
- One followed 15480 patients with diabetes (94% had type 2) and a mean age of 63 years; 63% were men.²
 - After 7.4 years, ASA patients had decreased composite CV events (8.5% vs 9.6% for placebo; number needed to treat of 91) and increased fatal or major bleeding (4.1% vs 3.2% for placebo; NNH=112).
 - There was no difference in all-cause mortality or cancer incidence.
- Another followed 19114 elderly patients (median age 74 years) primarily from Australia.^{3,4} After 4.7 years (trial stopped for futility), ASA patients had no difference in composite CV events (3.5% vs 3.9% for placebo).³
 - There were increases in fatal or major bleeds (3.8% vs 2.8% for placebo³; NNH=98), all-cause mortality (5.9% vs 5.2% for placebo⁴; NNH=143), and cancer deaths (3.1% vs 2.3% for placebo⁴; NNH=125).

Context

- A recent systematic review found similar results.⁵

- Cancer mortality, including colon cancer mortality, was either unchanged^{1,2} or increased with ASA.⁴
- Up to 47% of adults older than 45 use ASA, predominantly for primary CV prevention.⁶
- In secondary prevention, ASA benefits outweigh risks.⁷

Implementation

Primary CVD prevention should focus on proven lifestyle and pharmacologic therapies, rather than ASA. Smoking cessation is most effective, reducing CVD by more than 50%.⁸ Weekly exercise (150 minutes) can reduce CV mortality by up to 37% compared with no exercise.⁹ Mediterranean diets can reduce CV events by about 25%,¹⁰ while statins reduce CV events by 25% to 35%, depending on dose.¹¹ Treating hypertension can reduce CV events by about 20% per 10 mm Hg reduction, depending on baseline blood pressure.¹² Reductions are relative and benefits depend on baseline risk. Practitioners should use calculators¹³ to estimate CV risk and benefit of interventions. 🌱

Dr Fritsch is a family medicine resident at the University of Calgary in Alberta. Dr Kolber is Professor with the PEER (Patients, Experience, Evidence, Research) Group in the Department of Family Medicine at the University of Alberta in Edmonton.

Competing interests

None declared

The opinions expressed in Tools for Practice articles are those of the authors and do not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.

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