Does an ASA a day really keep the doctor away?

Clinical Question: Is ASA effective for reducing cardiovascular events in patients without pre-existing cardiovascular disease?

Bottom Line: Three recent large, randomized, controlled trials (RCTs) of moderate risk, elderly, and diabetic patients do not support use of ASA for primary prevention. The potential absolute benefit of ~1% (only found in one study) is offset by similar increase in major bleeding. All-cause and cancer mortality was either unchanged or increased with ASA. Routine use of ASA for primary cardiovascular prevention should be discouraged.

Evidence:

- Three large, high quality, placebo controlled RCTs of ASA 100 mg/day.
  - ARRIVE: RCT of 12,546 patients at moderate cardiovascular risk [10-year risk 10-20% (mean 17%)]. Predominantly males (70.5%), mean age 64 years. After 5 years:
    - No difference in:
      - Composite cardiovascular events: 4.3% versus 4.5% placebo.
      - Mortality: 2.6% in each arm.
    - Increased major gastrointestinal bleeds with ASA: (hemodynamic compromise or requiring transfusion) 0.3% versus 0.1% placebo; Number needed to harm (NNH)=345.
  - ASCEND: RCT of 15,480 diabetics (94% type 2), mean age 63 years, 63% males. After 7.4 years follow up, patients on ASA had:
    - Decreased composite cardiovascular events: 8.5% versus 9.6% placebo, Number needed to treat (NNT)=91.
    - Increased fatal or major (requiring hospitalization, transfusion or surgery) bleeds: 4.1% versus 3.2% placebo: NNH 112.
    - No difference: all-cause mortality or cancer incidence.
  - ASPREE: RCT of 19,114 elderly patients (median age 74 years) primarily from Australia. After 4.7 years (trial stopped for futility), patients on ASA had:
    - No difference in:
      - Composite cardiovascular events: 3.5% versus 3.9% placebo.
    - Increased:
      - Fatal or major bleeds: 3.8% versus 2.8% placebo; NNH 98.
      - All-cause mortality: 5.9% versus 5.2% placebo; NNH 143.
      - Cancer deaths: 3.1% versus 2.3% placebo; NNH 125.
Context:

- Systematic reviews published prior to and after these studies found similar results.  
- Cancer, including colon, was either unchanged or worse with ASA. 
- Guideline groups have different recommendations regarding ASA for primary cardiovascular prevention. 
- Up to 47% of adults over 45 years old use ASA; predominantly for primary cardiovascular prevention. 
- In secondary prevention (patients with established CVD), ASA benefits do outweigh risks.

Authors:
Paul Fritsch MD, Michael Kolber MD, CCFP, MSc

Disclosures:
Authors do not have any conflicts of interest to declare

References:


Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practicing family physicians who are joined occasionally by a health professional from another medical specialty or health discipline. Each article is peer-reviewed, ensuring it maintains a high standard of quality, accuracy, and academic integrity. If you are not a member of the ACFP and would like to receive the TFP emails, please sign up for the distribution list at http://bit.ly/signupfortfp. Archived articles are available on the ACFP website.

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.