Putting Prevention into Practice

An Evidence-Based Approach

Screening for Abdominal Aortic Aneurysm

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Case Study

A 65-year-old man with no significant medical history presents to your clinic for a wellness visit. His social history includes smoking periodically in his 20s, and his family history includes a father who died from an abdominal aortic aneurysm (AAA) in his 60s. The patient wants to know whether he should be screened for AAA.

Case Study Questions

1. Based on the U.S. Preventive Services Task Force (USPSTF) recommendations, which of the following patients should be offered screening for AAA?

- ☐ A. A 65-year-old man who currently smokes.
- ☐ B. A 65-year-old man with a history of smoking.
- ☐ C. A 65-year-old woman with no history of smoking and no family history of AAA.
- ☐ D. A 65-year-old woman with a history of smoking.

2. Which one of the following statements about the treatment of AAA is correct?

- ☐ A. Treatment with antibiotics or beta blockers reduces aneurysm growth.
- ☐ B. Patients with a large aneurysm (aortic diameter of 5.5 cm or larger) should undergo prompt surgical repair.
- ☐ C. Open surgery is the only way to repair an aneurysm.
- ☐ D. Operative mortality associated with AAA is higher in men than in women.

3. According to the USPSTF recommendations, which one of the following screening tests for AAA is recommended?

- ☐ A. Annual low-dose computed tomography.
- ☐ B. Annual magnetic resonance imaging.
- ☐ C. One-time abdominal duplex ultrasonography.
- ☐ D. Physical examination.
- ☐ E. Annual abdominal radiography.

Answers appear on the following page.

See related U.S. Preventive Services Task Force Recommendation Statement at https://www.aafp.org/afp/0515/od1.

This PPIP quiz is based on the recommendations of the USPSTF. More information is available in the USPSTF Recommendation Statement and supporting documents on the USPSTF website (https://www.uspreventiveservicestaskforce.org). The practice recommendations in this activity are available at https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/abdominal-aortic-aneurysm-screening1.

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CME **This clinical content** conforms to AAFP criteria for CME. See CME Quiz on page 587.

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Answers

1. The correct answers are A and B. The USPSTF recommends one-time screening for AAA with ultrasonography in men 65 to 75 years of age who have ever smoked (B recommendation).[1] Additionally, the USPSTF recommends that clinicians selectively offer AAA screening with ultrasonography in men 65 to 75 years of age who have never smoked rather than routinely screening all men in this group (C recommendation). In determining whether this service is appropriate in individual cases, patients and physicians should consider the balance of benefits and harms on the basis of evidence relevant to the patient's medical history, family history, other risk factors, and personal values. The USPSTF recommends against screening in women who have never smoked and have no family history of AAA (D recommendation). The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for AAA in women 65 to 75 years of age who have ever smoked or have a family history of AAA (I statement). The USPSTF also recommends that any patient who smokes should be provided with tobacco cessation interventions (A recommendation).[2] Epidemiologic literature commonly defines an "ever smoker" as someone who has smoked 100 or more cigarettes.

2. The correct answer is B. Surgical repair is standard practice for an AAA of 5.5 cm or larger in diameter or an AAA larger than 4.0 cm in diameter that has rapidly increased in size (defined as an increase of 1.0 cm in diameter over a one-year period). Pharmacotherapy trials showed no significant effect on AAA growth compared with placebo.[3] Open surgical repair is an effective treatment for AAA; however, endovascular aneurysm repair has become the most common approach for elective AAA repair. Operative mortality associated with AAA is higher in women than in men. Women also experience higher rates of other harms, such as major surgical complications and hospital readmission after elective open surgical repair or endovascular aneurysm repair.

3. The correct answer is C. The USPSTF recommends one-time screening with conventional abdominal duplex ultrasonography.[1] Benefits of abdominal ultrasonography include its ease of use, noninvasive nature, high sensitivity (94% to 100%) and specificity (98% to 100%), and lack of radiation exposure. The best evidence for the benefit of screening came from trials demonstrating statistically significant reductions in rates of AAA-related mortality using conventional abdominal duplex ultrasonography.[3] Computed tomography is an accurate tool for identifying AAA; however, it is not recommended as a screening method because of the potential for harms from radiation exposure. Physical examination has low sensitivity (39% to 68%) and specificity (75%) and is not recommended for screening for AAA.

The views expressed in this work are those of the authors and do not reflect the official policy or position of Loma Linda University, the U.S. Department of Health and Human Services, or the U.S. government.

References

1. Owens DK, Davidson KW, Barry MJ, et al. Screening for abdominal aortic aneurysm: US Preventive Services Task Force recommendation statement. *JAMA*. 2019;322(22):2211-2218.
2. Siu AL. Behavioral and pharmacotherapy interventions for tobacco smoking cessation in adults, including pregnant women: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*. 2015;163(8):622-634.
3. Guirguis-Blake JM, Beil TL, Senger CA, et al. Primary care screening for abdominal aortic aneurysm: updated evidence report and systematic review for the US Preventive Services Task Force. *JAMA*. 2019;322(22):2219-2238. ■