

Putting Prevention into Practice

An Evidence-Based Approach

Screening for Bladder Cancer

JENNIFER CROSWELL, MD, MPH, *Medical Officer, U.S. Preventive Services Task Force Program, Agency for Healthcare Research and Quality*

BINETOUL FALL, MD, *Family Medicine Resident, University of Maryland Medical Center*

► See related U.S. Preventive Services Task Force Recommendation Statement on page 397.



This clinical content conforms to AAFP criteria for evidence-based continuing medical education (EB CME). See CME Quiz on page 323.

The case study and answers to the following questions on screening for bladder cancer are based on the recommendations of the U.S. Preventive Services Task Force (USPSTF), an independent panel of experts in primary care and prevention that systematically reviews the evidence of effectiveness and develops recommendations for clinical preventive services. More detailed information on this subject is available in the USPSTF Recommendation Statement, the evidence synthesis, and the systematic evidence review on the USPSTF Web site (<http://www.uspreventiveservicestaskforce.org>). The practice recommendations in this activity are available at <http://www.uspreventiveservicestaskforce.org/uspstf/uspsblad.htm>.

A collection of Putting Prevention into Practice quizzes published in *AFP* is available at <http://www.aafp.org/afppip>.

Case Study

K.J., a 62-year-old white man, presents for a preventive visit. He has not seen a physician for three years because he is generally healthy. After his 65-year-old neighbor was diagnosed with bladder cancer, K.J.'s wife convinced him to be screened. K.J. says that he has had mild symptoms of urinary hesitancy and nocturia for about five years. He has smoked one pack of cigarettes per day for the past 20 years, and he drinks alcohol occasionally. He has been employed at a tire factory for the past 15 years.

Case Study Questions

1. Based on the recommendations of the U.S. Preventive Services Task Force (USPSTF), which one of the following is the most appropriate approach to use with this patient?

- A. Schedule a cystoscopy to screen for bladder cancer.
- B. Inform K.J. that he should not be screened for bladder cancer because there is convincing evidence that the harms of screening outweigh the benefits.
- C. Order urine cytology because it has been shown to have superior accuracy as a screening test for bladder cancer compared with urinalysis or tests for urine biomarkers.
- D. Explain to K.J. his risk factors for bladder cancer, and discuss the potential benefits and harms of screening.
- E. Inform K.J. that he should not be screened for bladder cancer because he does not have gross hematuria.

2. Which one of the following statements about bladder cancer is correct?

- A. In the United States, most cases of transitional cell carcinoma of the bladder have already invaded muscle tissue at the time of diagnosis.
- B. If not treated, all superficial tumors will progress to invasive cancer.
- C. Few superficial bladder tumors will recur after appropriate treatment.
- D. The principal treatment for superficial bladder cancer is cystectomy.
- E. A challenge of screening for bladder cancer is the ability to accurately identify early-stage lesions that have a high risk of progression.

3. Which of K.J.'s characteristics are considered risk factors for bladder cancer?

- A. His history of working at a tire factory.
- B. His history of urinary hesitancy and nocturia.
- C. His alcohol use.
- D. His history of smoking.

Answers appear on the following page.

Answers

1. The correct answer is D. Explain to K.J. his risk factors for bladder cancer, and discuss what is known about the potential benefits and harms of screening. The current evidence is insufficient to assess the balance of benefits and harms of screening for bladder cancer in the asymptomatic adult population because there is inadequate evidence that screening for bladder cancer or treatment of screen-detected bladder cancer leads to improved disease-specific outcomes or overall mortality. Evidence also is inadequate on the harms of screening or early treatment for bladder cancer. Screening tests for bladder cancer that are feasible for use in primary care include urine dipstick or microscopic urinalysis for hematuria, urine cytology, and tests for urine biomarkers; however, the USPSTF found inadequate evidence regarding the diagnostic accuracy of these tests. Patients with positive screening results are typically referred to a urologist for further evaluation, which may include cystoscopy. The USPSTF's recommendation for bladder cancer screening applies to asymptomatic adults; adults with gross hematuria and acute changes in lower urinary tract symptoms are not included. Evaluation of adults with gross hematuria would be considered diagnosis, not screening.

2. The correct answer is E. A challenge of screening for bladder cancer is accurately identifying cases of early-stage cancer (sub-epithelial and *in situ*) with a high risk of progression. Approximately 70 percent of all cases of newly diagnosed transitional cell carcinomas present as superficial tumors (*including in situ*); some of these tumors

may never progress to advanced disease. Many superficial tumors (50 to 70 percent) will recur after treatment, with a 10 to 20 percent risk of the tumor progressing to the invasive stage. The principal treatment for superficial bladder cancer is transurethral resection of the bladder tumor, which may be combined with adjuvant radiation therapy, chemotherapy, biologic therapies, or photodynamic therapies. Radical cystectomy, often with adjuvant chemotherapy, is used in cases of surgically resectable invasive bladder cancer.

3. The correct answers are A and D. K.J.'s risk factors for bladder cancer are his age, sex, history of working at a tire factory, and smoking history. Persons at increased risk of bladder cancer include those who work in the rubber, chemical, or leather industries, as well as those who smoke, are male, are older, or have a family or personal history of bladder cancer. Mild lower urinary tract symptoms (e.g., urinary frequency, hesitancy, urgency, dysuria, nocturia) are common, and are not believed to be associated with an increased risk of bladder cancer. Alcohol consumption is not considered a risk factor for bladder cancer.

Author disclosure: No relevant financial affiliations to disclose.

SOURCES

Moyer VA. Screening for bladder cancer: U.S. Preventive Services Task Force recommendation statement [published correction appears in *Ann Intern Med.* 2011;155(6):408]. *Ann Intern Med.* 2011;155(4):246-251.

Chou R, Dana T. Screening adults for bladder cancer: a review of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med.* 2010;153(7):461-468. ■