Cancer prevention and screening

Screening is a method of secondary prevention, which is defined as the early detection and treatment of disease before signs or symptoms are apparent. In contrast, primary prevention is the prevention of disease through activities such as immunization, smoking cessation, use of sunscreen, diet, and exercise. Tertiary prevention is the management of disease to prevent progression, recurrence, or other complications. Although desirable, good screening tests are not available for every type of cancer. Several conditions must be met before cancer screening makes sense in asymptomatic populations.

First, diseases must have certain characteristics that make screening feasible. Specifically, diseases must have natural histories and biology that can be predicted, and preclinical phases must have high prevalence and incidence (see Table 1). Prevalence is defined as the number of cancers that exist in a defined population at any given point in time, and incidence is the number of cancers that develop in a population during a defined period of time. If such a preclinical phase exists, healthcare professionals have an opportunity to alter the disease course. This opportunity, though, must be accompanied by effective treatment for early-stage diseases after they are discovered. Detecting early-stage cancer but not being able to stop its progress does little good. Perfect screening...