Whole Body Computed Tomography Scan as a Screening Test

Description

This policy addresses whole-body computed tomography (CT) scanning or whole-body CT screening as a potential preventive measure for individuals who have no signs or symptoms of disease.

Background

Whole-body computed tomography (CT) scans, which encompass the body from the neck to the pelvis, have been proposed as a general screening test for diseases of the thyroid (i.e., cancer), lungs (i.e., lung cancer), heart (i.e., cardiovascular disease [CVD]), and abdominal and pelvic organs (cancer, CVD). Often the test is marketed directly to the patient and is offered through mobile CT scanners that travel from community to community. Different aspects of whole-body CT scanning as a screening test have been addressed in individual policies, i.e., spiral CT scanning as a screening test for lung cancer (policy No. 6.01.30); CT colonography as a screening test for colon cancer (policy No. 6.01.32); and CT scanning to detect coronary calcium (policy No. 6.01.03).

Policy

Whole-body computed tomography scans as a screening test are considered investigational.
Policy Guidelines

There is no specific CPT code for whole body CT scanning. A series of CPT coding defining different aspects of whole body scanning might be submitted.

Rationale

Literature searches using the MEDLINE database through February 2012 have identified a single controlled trial on whole-body computed tomography (CT) scans. In 2007, Obuchowski et al. reported a small (50 subjects) randomized trial of whole-body screening (vs. no screening for 3 years) to determine the feasibility of a larger scale study. (1) Ninety percent of the subjects were reported to be compliant with follow-up at 2 years. Images were interpreted independently by 6 radiologists from 2 institutions. Based on one interpretation, 16 (64%) subjects in the screening group had abnormal findings, but no cancers were detected. A second interpretation showed a similar rate of abnormal findings, although abnormalities were not in the exact same group of 16 subjects. On average, medical costs were twice as high for screened subjects. The authors concluded that a full-scale randomized controlled trial (RCT) of whole-body screening will need to account for the large variability in interpretation of the images, the high rate of incidental findings, and the low prevalence of cancers.

Also identified were 2 retrospective reviews of findings/recommendations from 982 and 1,192 whole-body CT screenings. (2,3) Both studies observed a strong association between age of the patient and the number of findings and recommendations. Actionable findings ranged from 22.5% of subjects younger than 40 years of age to 80% of patients older than or equal to 80 years of age (2); follow-up imaging was the most common recommendation. (3)

Summary

Evidence has not changed substantially since a 2003 review that concluded “no published studies demonstrate that these procedures reduce morbidity or mortality when used to screen healthy, asymptomatic patients.” (4) Moreover, the radiation dose of the CT scan itself could lead to an excess lifetime risk of fatal cancer and that radiation dose and associated risk should be included as fundamental parameters for investigating the outcomes of a CT-based screening program. (5) Evidence reviewed in a 2010 report from the Canadian Health Services Research Foundation indicates that whole-body CT screening uses 500 to 1,000 times the radiation levels of a routine chest x-ray, without any demonstrated positive effects on life expectancy. (6) The current literature does not support an improvement in health outcomes with whole-body CT screening. Therefore, this procedure is considered investigational.

Practice Guidelines and Position Statements

The American College of Radiology has posted the following statement regarding whole-body computed tomography (CT) scanning (7):
"The American College of Radiology (ACR) recognizes that an increasing number of computed tomography (CT) screening examinations are being performed in the United States. Much CT screening is targeted at specific diseases, such as lung scanning for cancer in current and former smokers, coronary artery calcium scoring as a predictor of cardiac events, and CT colonography (virtual colonoscopy) for colon cancer. Early data suggest that these targeted examinations may be clinically valid. Large, prospective, multicenter trials are currently under way or in the planning phase to evaluate whether these screening exams reduce the rate of mortality. The ACR, at this time, does not believe there is sufficient evidence to justify recommending total body CT screening for patients with no symptoms or a family history suggesting disease. To date, there is no evidence that total body CT screening is cost efficient or effective in prolonging life. In addition, the ACR is concerned that this procedure will lead to the discovery of numerous findings that will not ultimately affect patients' health but will result in unnecessary follow-up examinations and treatments and significant wasted expense. The ACR will continue to monitor scientific studies concerning these procedures."

Information from the U.S. Food and Drug Administration (FDA) (8) indicates that recommendations from the U.S. Preventive Services Task Force (9) and the American Medical Association have been added to those of the American College of Radiology, the American College of Cardiology/American Heart Association, the American Association of Physicists in Medicine, and the Health Physics Society, all of whom do not recommend CT screening. The FDA has published the following information on whole-body CT scanning:

"At this time the Food and Drug Administration (FDA) knows of no scientific evidence demonstrating that whole-body scanning of individuals without symptoms provides more benefit than harm to people being screened."

- Whole-body CT screening has not been demonstrated to meet generally accepted criteria for an effective screening procedure.
- Medical professional societies have not endorsed whole-body CT scanning for individuals without symptoms.
- CT screening of high-risk individuals for specific diseases such as lung cancer or colon cancer is currently being studied.
- The radiation from a CT scan may be associated with a very small increase in the possibility of developing cancer later in a person's life.

References:


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