

Specialists Reject CT for Lung Cancer Screening

BY ROBERT FINN
San Francisco Bureau

In a controversial move, the American College of Chest Physicians has formally recommended against the use of low-dose helical CT scanning for general lung cancer screening, even in high-risk populations, except in the context of clinical trials.

The ACCP also recommended against the use of serial chest radiographs and sputum cytologic evaluation to screen for the presence of lung cancer.

"The evidence isn't available to show that low-dose CT screening provides a mortality benefit," Dr. W. Michael Alberts said in an interview. Dr. Alberts, the chief medical officer of the H. Lee Moffitt Cancer Center and Research Institute in Tampa, Fla., chaired the ACCP committee that developed the guidelines. "Because there's a very real potential for harm, it's going to be important to prove or show a mortality benefit prior to recommending screening with a low-dose CT scan."

The second edition of the college's

"Diagnosis and Management of Lung Cancer" includes 260 guidelines, three of which involve lung cancer screening. It was published as a supplement to the September 2007 issue of the journal *Chest* (2007;132[suppl.]:1S-422S). This edition updates the original version of the guidelines, published in January 2003.

The screening guidelines were developed by a subcommittee headed by Dr. Peter B. Bach of the Memorial Sloan-Kettering Cancer Center, New York. Although acknowledging that low-dose CT scanning remains the most promising of the lung cancer screening techniques, the guideline authors maintain that—even though the existing data do suggest that low-dose CT increases the rate of detection of early-stage lung cancers—such CT screening fails to reduce the number of late-stage lung cancers or the risk of dying from lung cancer. They suggest that this may be because many of the additional cancers detected are small, indolent cancers, which leads to unnecessary invasive procedures that carry a cost in morbidity and mortality.

The subcommittee's analysis includes a theoretical model of the time it takes for a given nodule to double in size. They estimated that the doubling time of lung tumors resulting in deaths is approximately 40-70 days, whereas research shows that the doubling time of early cancers identified by CT screening ranges from 149 to 813 days.

"As best I know, this is the first time that anyone has tried to make a public health policy statement against screening based upon theoretical considerations of nodule doubling time," said Dr. James L. Mulshine of Rush University Medical Center, Chicago, in an interview. "This is a totally unvalidated tool, and really not the grist for evidence-based analysis of the screening service."

"The recommendations weren't based

on that at all," Dr. Bach responded in an interview. Instead, he said, the model was intended to provide one possible explanation for the fact that studies have so far failed to demonstrate that screening results in demonstrable improvements in mortality.

Dr. Mulshine said that some studies were omitted from the analysis unfairly, and that the guideline authors interpreted other studies selectively. He is on the board of directors of the Lung Cancer Alliance (www.lungcanceralliance.org), which is spearheading opposition to the new screening guidelines. Since 2006, the nonprofit alliance has received \$160,000 in funding from General Electric Co., which makes CT scanners, and grants from other sources. Dr. Mulshine, who has published extensively on his lung cancer screening research, was coauthor of an influential 2005 review article (*N. Engl. J. Med.* 2005;352:2714-20).

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DR. ALBERTS

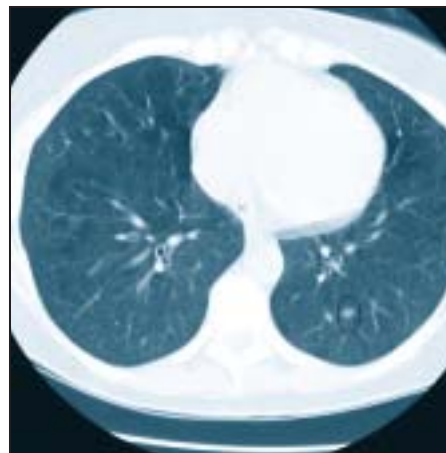
mortality related to lung cancer screening. One such study may be completed as early as 2009, but possibly not until 2011. Data from another study won't be available for another 2 years or so after that.

"We all hope that the randomized, controlled trials will show a mortality benefit," Dr. Alberts said. "We'd like to have that outcome, at which time maybe low-dose CT scanning should be recommended. But at this time, the evidence is not available, and there is potential evidence that it may be harmful. As a result, we can't in all good conscience recommend CT scanning at this point."

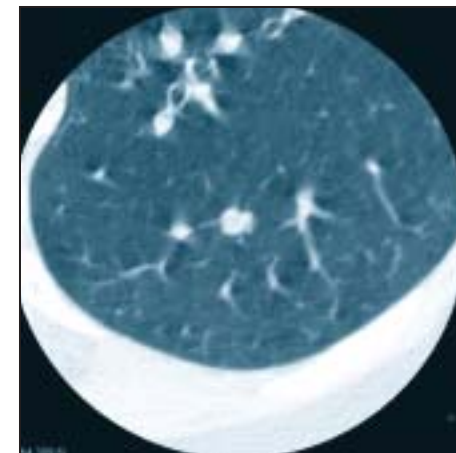
But Dr. Mulshine noted that while waiting for the results of those randomized trials, 160,000 Americans die every year from lung cancer, in part because most lung cancer is not diagnosed until it's stage III or IV. And he pointed to data showing that morbidity and mortality from diagnostic procedures conducted as a result of screening are extraordinarily low in "centers of excellence." Furthermore, the last 5 years have seen a significant improvement in noninvasive procedures, improvements that are likely to continue if more research is done in this area.

But for Dr. Len Lichtenfeld, deputy chief medical officer of the American Cancer Society, "the issue isn't diagnostic procedures. It's the morbidity and mortality from subsequent surgery that concerns me." ACS does not recommend routine CT screening for lung cancer at this time. "However, understanding that some people will nonetheless want to proceed with screening, they should have a careful discussion with their doctor regarding the potential risks that could result."

The U.S. Preventive Services Task Force states that there is insufficient evidence to recommend for or against lung cancer screening. ■



A helical CT reveals a lesion that was later identified as an adenocarcinoma.



Here, the helical CT offers a closer view of the adenocarcinoma seen on the left.

PHOTOS COURTESY INTERNATIONAL EARLY LUNG CANCER ACTION PROGRAM

Other Points Covered by the Guidelines

In addition to the three recommendations on lung cancer screening, the ACCP has issued 257 recommendations on the prevention, diagnosis, and treatment of lung cancer.

The ACCP classifies its evidence-based guidelines as strong (grade 1) or weak (grade 2) based on a balance of risks, benefits, burdens, and costs. The college also classifies the quality of evidence as high (grade A), moderate (grade B), or low (grade C) based on study design, consistency of results, and directness of the evidence.

The following are among the most notable of the other recommendations:

- ▶ Fifteen of the guidelines deal with complementary therapies and integrative oncology. The guidelines recommend mind-body modalities to reduce anxiety, mood disturbances, or chronic pain (grade 1B); massage therapy for anxiety or pain (grade 1C), as long as it does not involve deep or intense pressure near cancer lesions or anatomical distortions (grade 2C); and acupuncture for poorly controlled pain or for side effects such as neuropathy or xerostomia (grade 1A) and for nausea and vomiting (grade 1B).

However, the guidelines recommend against the therapy based on putative manipulation of bioenergy fields (grade 1C); electrostimulation wristbands for nausea and vomiting (grade 1B); and botanical agents in patients who either fail or decline antitumor therapies except in the context of clinical trials (grade 1C).

In addition, physicians should specifically ask all patients with lung cancer about their use of complementary and alternative therapies (grade 1C).

- ▶ In terms of lung cancer chemoprevention, the guidelines recommend against supplementation with β -carotene, vitamin D, retinoids, *N*-acetylcysteine, and aspirin (grade 1A). The guidelines further state that even for individuals at risk of lung cancer or with a history of lung cancer, there are insufficient data to recommend any agent—either alone or in combination—for chemoprevention, except in the context

of a clinical trial (grade 1B).

- ▶ Solitary pulmonary nodules are addressed in 29 guidelines. The guidelines direct physicians to estimate the pretest probability of malignancy (grade 1C), and to perform specific imaging and diagnostic tests based on that probability and other characteristics of the nodule (various grades). They also recommend a number of surgical approaches, including thorascopic wedge resection and lobectomy, depending on the results of these tests and patient preference (various grades).

- ▶ For the first time, the guidelines address bronchioloalveolar carcinoma. They recommend surgical biopsy for establishing a diagnosis (grade 1C); follow-up diagnostic testing after a negative PET scan (grade 1C); and sublobar resection for patients who are good surgical candidates, provided the CT scan shows a pure ground-glass appearance and there's no evidence of invasive disease (grade 1B).

- ▶ Palliative care is addressed in 35 guidelines. Patients should be reassured that pain can be treated safely and effectively, and all patients should be questioned regularly about their pain (grade 1A). Patients with mild to moderate pain should be managed first with acetaminophen or an NSAID, and then with an opioid when pain becomes more severe (grade 1B). Those with pain unresponsive to standard methods should be referred to a specialized pain clinic or a palliative care consultant (grade 1C).

External radiation therapy and bisphosphonates are recommended for patients who have pain from bone metastases (grade 1A). Patients with malignant tracheoesophageal or bronchoesophageal fistula should be considered for stenting of the esophagus, airway, or both for symptomatic relief, but attempts at curative resection or esophageal bypass are not recommended (grade 1C).

- ▶ All patients with lung cancer should be evaluated for the presence of depression and treated appropriately (grade 1C).