

S21. Early Detection of Lung Cancer by CT-Screening

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Lung cancer is the most common cause of cancer deaths in both men and women in the industrialized world, and the number of lung cancer deaths has not changed in the last thirty years, despite advances in treatment and prevention of this disease. It thus is a major public health problem. The disease-specific mortality is declining in most age groups. Without the development of efficacious primary prevention, the number of people diagnosed with lung cancer is expected to double in the next 50 years. Former smokers maintain lung cancer incidence rates that are greater than comparable never smokers, and these rates will increase substantially as they age. Lung cancer treatment and survival are functions of disease stage at presentation. As stage I and II tumors rarely cause symptoms, the disease is usually diagnosed in advanced stages when potentially curative therapy is often beyond the reach of physicians' present capabilities. It is accepted that the curability of stage I lung cancers is very high relative to the curability of late-stage cancers; and within stage I, cancers less than 3 cm in diameter (stage IA) are more often curable than those that are larger (stage IB). Prior studies on screening for lung cancer (NCI studies) with chest X-rays (CXR) were interpreted as not demonstrating benefit of screening, but it is generally agreed that there were shortcomings in the methodology of those studies. Computed tomography (CT) of the chest has been reported to be superior to CXR in detecting pulmonary nodules. Given its exquisite sensitivity in detecting radiographic pulmonary abnormalities, CT scanning is the best suited in popula-

tions with low probability of benign pulmonary nodules (eg, histoplasmosis, tuberculosis). Multiple studies on annual CT screening have established that the lung cancers are much more commonly diagnosed at stage I and at smaller sizes than those detected in previous screening studies. These studies showed a detection rate of non-calcified pulmonary nodules between 23 and 51%, the rate of cancers was between 1.1 and 2.7%. Furthermore it is knowable that annual CT screening for lung cancer provides for prevention of death from lung cancer by early intervention. Quantitative assessment of the actual magnitude of this benefit is being pursued by the international EARLY LUNG CANCER ACTION PROJECT - I-ELCAP (www.ielcap.org) institutions. Currently available results are encouraging for a possible future utility of this method in combating lung cancer mortality. Demonstrating a longer survival is a certainty for this emerging technology. Since longer survival could potentially be explained by lead-time bias a large prospective, unbiased, randomised trial was started in the US in order to either accept or reject the hypothesis that early detection of lung cancer by CT screening will reduce lung cancer mortality. At this moment a person at high-risk for lung cancer yet free of suspicion-raising symptoms, who is interested in potentially being screened, should be fully apprized of the implications of screening and of the treatment that may result. In light of this, it is my personal opinion that it is reasonable for the individual to choose to be screened by a suitable defined CT regimen.