Estimated lung cancer related live saved by Low dose CT of the chest.

Extrapolating from the NLST results (1), a screening method that reduces lung cancer specific mortality by 20% could save an estimated 11,074 lives annually in the U.S., which is far greater than 2,303, the number currently estimated to be saved with adjuvant chemotherapy. Samet et al. showed that 10% of nonsmokers develop lung cancer (2). Thus, if 156,940 people died from lung cancer in 2010 as predicted (3), and 90% were smokers, then 141,246 smokers were estimated to die from lung cancer in 2010. Review of the data from the SEER database shows that 52% of patients diagnosed with lung cancer are between the ages of 55 and 74. The tumor registry at our institution reported that of the 1475 patients diagnosed in the past 5 years with lung cancer, 1112 (75%) had greater than 30 pack-years of smoking, which fits the high-risk criteria set forth in the NLST trial (age 55-74 with greater than 30 pack-year smoking history). Thus, 39% of all patients diagnosed with lung cancer fit the high-risk population that would be screened according to the NLST criteria. Extrapolating from the NLST results which indicate a 20% mortality benefit from screening to the US population, an estimated 11,074 lives could be saved annually with CT screening. This benefit is far greater than that seen with adjuvant chemotherapy. Pignon et al. showed in the LACE trial that there is a 5% overall mortality benefit from adjuvant chemotherapy (4). We analyzed the tumor registry at our institution and found that over the past 5 years, we have had 1,475 patients newly diagnosed with lung cancer, and of those 29.8% were stage Ib-IIIa. Extrapolating these results to the US estimates that 65,787 patients are diagnosed with stage Ib-IIIa annually (29.8% of the 221,113 total new diagnoses) and thus are candidates for adjuvant chemotherapy. Local estimates are that approximately 70% of stage Ib-IIIa patients actually undergo surgical resection with subsequent chemotherapy, extrapolating to 46,051 annually in the United States. Based on the 5% mortality benefit, then 2,303 lives will be saved annually from adjuvant chemotherapy. Therefore early detection using low dose CT screening should result in a much greater number in lives saved that adjuvant chemotherapy in NSCLC.

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