Response to “CT Screening for Lung Cancer: Update 2007”

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Disclosure: This article discusses the off-label use of computed tomography devices (manufactured by General Electric and others) for screening. No potential conflicts of interest were reported by the author.

I am writing about the article called “CT screening for lung cancer: Update 2007,” which appeared in the January 2008 issue of The Oncologist [1]. The article contains numerous problematic and unsubstantiated assertions, in many cases inappropriately coupled to references that are either unrelated to, or contradictory to the point made by the authors.

UNDER “KEY CONCEPTS AND DEFINITIONS”

1. The authors tell readers that the staging system for lung cancer “is based on differences in lung cancer survival.” Their reference is to the update on lung cancer staging by Mountain, which states that the lung cancer staging system is based on identifying the intersection of similar treatment options and similar outcome expectations [2].

2. The authors present the term “curability rate,” although it has no concrete meaning in epidemiology. Their reference is to Martini and colleagues, where the concept of “curability rate” does not appear [3].

3. The authors present, in Figure 1, estimates of “cure rates,” a concept that is not found in conventional epidemiology. They cite as their source for the cure rate estimates the “American Cancer Society Facts and Figures: 2006.” Yet, no cure rates appear in that report.

4. The authors claim that there is a distinction between “baseline” and “subsequent” rounds of screening. They cite Morrison [4]. In that article, no such distinction appears. In fact, Morrison focuses on a hypothetical scenario in which only a single round of screening (i.e., only the baseline round) has been performed.

5. The authors assert that “length bias” only affects the first round of screening, again referencing Morrison [4]. Morrison’s article explicitly contradicts the authors on this point, noting that length bias cannot be sequestered to certain patients in a single-arm noncomparative design (such as Early Lung Cancer Action Project [ELCAP]). The Morrison article more generally critiques the type of design pursued by ELCAP, while implicitly endorsing randomized trials such as the National Lung Screening Trial (NLST). He states that “the observed case-fatality (the ELCAP endpoint) is not an appropriate measure of the beneficial effect of screening. Outcome evaluation of a screening programme is best carried out by comparison of mortality rates in the screened population with those in another otherwise comparable unscreened population (i.e., the NLST design).”

UNDER “THE EARLY LUNG CANCER ACTION PROJECT APPROACH”

1. The authors assert that for “curability determination, a comparison group may be formed by randomly assigning people with screen-diagnosed lung cancer to immediate or delayed treatment, as was done for prostate cancer” [5]. Yet, the study they reference did not randomize individuals after screening detection, but instead randomized patients found to have prostate cancer by a variety of means [6].

UNDER “ELCAP TO NEW YORK ELCAP TO INTERNATIONAL ELCAP”

1. The authors state that “follow-up only extends to year 4 in the National Lung Screening Trial (NLST).” The reference they provide, to the NLST website, contradicts them: the follow-up is listed as 8 years, not 4 years.
2. They state that the “median follow-up time [in the NLST] will be 4 years in 2009.” The NLST website lists enrollment dates ranging from 2002 to 2004. Thus, follow-up by 2009 will range from 5 years (i.e., 2004–2009) to 7 years (i.e., 2002–2009), and the median will lie somewhere between 5 and 7 years.

3. The authors claim that the cumulative mortality rate declined in years 5 and 6 of a study examining computed tomography screening [7]. The study referenced contains no such finding. In that study, the cumulative number of events over time (i.e., deaths from lung cancer), not the cumulative mortality rate, was examined.

UNDER “CONCERNS ABOUT THE I-ELCAP APPROACH”

1. The authors assert that lead time and length time biases affect both the EL CAP and randomized trials of screening, providing four references. Two references are to letters the authors have written, and are thus circular. The other two are to Morrison [4] and Hanley [8]; this assertion appears nowhere in either. In fact, in Hanley [8], neither the term “lead time” nor the term “length time” is even discussed—that article focuses on a subtle point regarding the analysis of comparative screening studies where the endpoint is the mortality rate (as in the NLST) [8].

REFERENCES