Reviewer's report

Title: The performance of NLST screening criteria in Asian-American lung cancer patients

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Reviewer: David Midthun

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The article by Kumar et al., “The performance of NLST screening criteria in Asian-American lung cancer patients” is a retrospective study of patients of Asian descent presenting with lung cancer to a single institution who are analyzed according to meeting NLST criteria for screening. The main result is that a similar percentage of the Asian-American cohort with lung cancer (27.8%) met criteria for screening compared to that estimated for the US population using SEER criteria (27%). The authors conclude that screening Asian-American patients is therefore valid using these criteria, and that further strategies for screening on non-tobacco factors are needed.

Major concerns:

1. The NLST results proved that screening with CT reduced mortality in the mixed-race (albeit 91% Caucasian) population. Pinsky estimated that 27% of the patients with lung cancer in the SEER data base (article ref 11) would have been screenable by the NLST criteria. Does finding a similar percentage of patients with cancer who meet criteria among Asian Americans prove that screening will save lives in Asian-Americans? The suggested answer is yes, but it would take a randomized trial in just Asian-Americans to prove it. Curiously there are no published Asian randomized trials of CT screening.

2. Statistical validity is the degree to which an observed result can be relied upon and not attributed to random error in sampling or in measurement. I am not a statistician, but I doubt that a population of 116 can establish validity in such a comparison. To suggest the data presented support screening Asian Americans using NLST criteria is appropriate. The data presented do not support that screening on non-tobacco factors is needed - only that the majority of the Asian America patients with lung cancer would not fit current criteria – proving benefit from screening based on other factors is a different matter.

3. Methodologic concerns include how the population was identified. Line 108 describes the identification of Asian ethnicity on the basis of last names; this is problematic as many with Asian last names (i.e. spouses) are not of Asian descent. Later, in line 130, it is described that all patients immigrated to the US in their adult ages – this is a much more robust clarification of Asian ethnicity, but is in contrast to line 108, and I'm not sure if this information was clarified in chart review.

Whether these are native or US born Asians is an important point as foreign-born
Asians have a higher rate of NSCLC than U.S.-born Asians (Raz et al., J Thor Oncol 2008; 3:1391-7). The authors blur the distinction between Asians and Asian Americans with lung cancer by repeatedly referencing data from Asians which may not always be appropriate. The SEER data is the US population and not just ‘Caucasians’ as the authors suggest in the text and in the table (3).

Minor concerns:

1. The NLST and USPSTF criteria de facto define heavy smoking as > 30 pack years. The authors use the Mok article (ref 19) to define ‘heavy smokers’ and to my read this article only defines non-smokers, former light smokers and former non-light smokers. The authors use of heavy smoking as > 10 pack years vs >30 pack years is confusing in table 2.

2. The data on EGFR available for those patients in the cohort supports differences in the epidemiology of lung cancer in Asian Americans. The discussion of EGFR detection in sputum, lines 214-222, seems out of place.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests