

NATIONAL SCREENING COMMITTEE

SCREENING FOR LUNG CANCER

Background

Lung cancer remains a major public health problem, now increasing in women although decreasing in men. Late presentation and short survival are features of this disease.

There has been widespread interest in screening.

The issues

Three issues need to be considered. The first is the level of evidence needed and there is now universal agreement that the best level of evidence is a systematic review of randomised controlled trials, or even a single large randomised controlled trial. Randomised controlled trials are essential because of the problem of lead time bias.

With lung cancer, two other issues are of importance relating to the technology that could be used for screening.

There has been widespread interest in a breath test for lung cancer. For this reason the National Screening Committee, in partnership with the Medical Research Council, commissioned a review of the evidence about breath test screening for lung cancer. This was carried out by the University of Leeds and the summary of this review is set out below.

“Twelve studies reporting the use of tests for volatile organic compounds (VOCs) in exhaled breath as a diagnostic marker for lung cancer were obtained and reviewed.

No study reported data on the use of breath tests for VOCs in lung cancer in a screening setting, either alone or in combination with spiral CT, in the general population, or in sub-sets who may be at higher risk of cancer, e.g. by age or by smoking status. No data were obtained on costs or adverse effects.

Further studies are required to fully evaluate the use of this method in screening for lung cancer and any beneficial effect on morbidity and mortality rates.”

The Times of 22 February carried a report of another paper on lung cancer screening but this was simply an analysis of the accuracy of the test and not an evaluation of a screening programme. This recently published paper does not change the conclusion of the systematic review (1, 2).

The second method used to screen for lung cancer is computed tomography.

In December 2006 a report of the study organised by the International Early Lung Cancer Action Programme was published (3). The conclusion of this study was that: “annual spiral CT screening can detect lung cancer that is curable”.

A systematic review carried out by the Aberdeen Health Technology Assessment Group has now published the first systematic review of the literature on population screening for lung cancer. The conclusion of the systematic review, which identified twelve studies of computed tomography screening for lung cancer, including two randomised controlled trials and ten studies of screening without comparative groups, was that: “currently there is insufficient evidence that computed tomography screening is clinically effective in reducing mortality from lung cancer” (4). The accompanying Editorial reinforced this conclusion (5).

Recommendation

The National Screening Committee is asked to receive this report and it is recommended that the current policy, namely that screening for lung cancer should not be offered, should remain the NSC policy.

This is also the conclusion of an Editorial published in the *British Medical Journal* in February 2007 (6).

J A Muir Gray, Kt, CBE, DSc, MD, FRCPSGlas, FCLIP
Programmes Director, National Screening Committee

References

1. Mazzone PJ, Hammel J, Dweik R, Na J., Czich C et al. Diagnosis of lung cancer by the analysis of exhaled breath with a colorimetric sensor array. *Thorax*, 2007; 0: 1-5.
2. Bennett C, Dorward S, Forman D. Breath test screening for lung cancer. Report prepared for the National Screening Committee by the University of Leeds, January 2007.
3. International Early Lung Cancer Action Program Investigators. Survival of patients with Stage I lung cancer detected on CT screening. *New Eng. J. Med.*, 2006; 355: 1763-71.
4. Black C., de Verteuil R, Walker S, Ayres J. et al. Population screening for lung cancer using computed tomography, is there evidence of clinical effectiveness? A systematic review of the literature. *Thorax* 2007; 62: 131-8.
5. Spiro SG. Screening for lung cancer: yet another problem. Editorial. *Thorax*, 2007; 62: 105-6.
6. McMahon PM, Christiani DC. Computed tomography screening for lung cancer. Editorial. *BMJ*, 2007; 334: 271.