

Screening trial of blood test for lung cancer is set to start in Scotland

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A major screening trial is to be conducted among high risk smokers in Scotland to find out if a simple blood test can help to detect lung cancer at an early stage.

The test was developed at the University of Nottingham and has been used in the United States for the past two years. It works by identifying antibodies produced by the immune system when lung cancer is present. This might pick up cancer many years before symptoms appear.

Ten thousand people who have smoked 20 cigarettes a day for 20 years will be entered into the trial with half being screened and the remainder getting standard care. The first results are expected by the end of 2014 and will help to determine if the test is effective as a screening tool.

A similar test is expected to be developed for breast cancer within the next year with others to follow for prostate, colon, and ovarian cancer.

Scotland has one of the highest rates in the world for lung cancer and most patients present when the disease has already progressed to an advanced stage.

Scotland's chief medical officer, Harry Burns said: "The earlier a cancer is diagnosed the greater the chance it can be treated successfully. By testing those at greatest risk of developing lung cancer, and diagnosing it at its earliest possible stage, we stand a better chance of being able to treat the cancer successfully. This means patients can be treated when their general health is better and when less aggressive treatment may be required than if the cancer had spread."

A screening trial of 53 000 smokers in the US using computed tomography scanning has shown that lives can be saved by

detecting lung cancer early. However, computed tomography scanning is expensive, not always available, and produces a false positive rate of around 50%. Research has shown that the blood test can detect about half of cancers in those screened with a false positive rate of only 7% when confirmed by computed tomography (*N Engl J Med* 2011;365:395-409). This means that it should be much more cost effective to use the blood test as a pre screen for computed tomography.

Frank Detterbeck, professor and chief in thoracic surgery at Yale University School of Medicine, said, "This is a really important study. We know now that screening with CT [computed tomography] imaging can save a lot of lives by early detection of lung cancer, but broad implementation of CT screening is not so easy. The significance of this blood test is the extensive and careful study, validation and re-validation that has produced consistent robust results, and the ease of use."

The test was developed by John Robertson, director of the Centre of Excellence for Autoimmunity in Cancer at the University of Nottingham and founder and chief scientific officer of Oncimmune Ltd, which has made the test commercially available. He said: "After many years of developing and refining this autoantibody test I am very proud of what we have achieved. The test is highly reproducible and will I believe lead to significant improvement in prognosis for a substantial number of lung cancer sufferers. A randomised screening trial of this nature will help validate its use as a screening tool."

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