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Is lung cancer screening associated with a negative psychological impact?

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Background

Lung cancer screening can reduce lung cancer mortality by 20%. It is currently recommended in the USA, but not in the UK and ensuring any potential psychological harm is minimised is important. Current evidence is limited to the psychological impact of CT lung cancer screening. This study assesses psychological responses in the Early Cancer Detection Test - Lung Cancer Scotland Study (ECLS Study), whose participants have a tumour antibody blood test (Early CDT[®]-Lung test) and CT scans only for those with positive blood tests.

Methods

ECLS study participants were randomised to an Early CDT[®]-Lung test group or a control group. A sample (n=1032) participated in a nested psychological outcomes study. Questionnaires measured psychological responses (positive and negative affect scale (PANAS), lung cancer worry scale (LCWS) and impact of events scale (IES)) at baseline and 1, 3, 6 and 12 months post-trial recruitment. Psychological responses over time were assessed using multilevel modelling and compared between those in the control group, the test-positive group and the test-negative group.

Results

In total, 350, 361 and 321 participants were in the control, test-negative and test-positive groups respectively. Follow-up questionnaire completion rates were $\geq 90\%$ at all time-points. Baseline psychological measures did not differ significantly between groups. Significant differences were found between PANAS scores, but absolute differences between the groups were very small and unlikely to be clinically significant. The IES avoidance and intrusion scores were significantly higher in the positive than the negative group at all time-points and at 1, 3 and 6 months respectively. However, median scores for both subscales at all the time-points were in the subclinical range. Anxiety about future tests and treatment at 1 month was significantly higher in the test-positive group than the control (OR (95%CI) 3.55 (1.70, 7.41) or the negative group (OR (95%CI) 5.74 (2.69, 12.2)). Worry about getting lung cancer in the future was significantly higher in the test-positive than the test-negative group at 1 month (OR (95%CI) 2.61 (1.35, 5.02), 3 months (OR (95%CI) 2.52 (1.30, 4.87) and 6 months (OR (95%CI) 2.98 (1.53, 5.82)).

Conclusion

Lung cancer screening using a blood test followed by CT scanning for test-positive individuals does not appear to impact on affect, intrusive thoughts or avoidant behaviour to a clinically important degree.

However, anxiety about future tests and treatment and future worry about lung cancer needs to be addressed if lung cancer screening is implemented in the UK.