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# Abstract 13: Prognostic Role Of Coronary Artery Calcification In Lung Cancer Patients

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**Introduction:** Few studies have investigated the prognostic role of coronary artery calcification (CAC) detected in the pre-radiotherapy (RT) chest computed tomography (CT) of lung cancer patients. Our aim was to assess whether the burden of CAC identifies patients with higher cardiovascular risk and predicts all- cause mortality. We retrospectively analysed non-gated CT chest scans performed for RT planning in a population of patients with non-small cell lung cancer (NSCLC).

**Methods:** 105 patients diagnosed with NSCLC at our centre between January 2003 and July 2009 were included. A qualitative evaluation of CAC in the three main coronary arteries was performed with a visual scoring system of no, mild, moderate or severe calcification. Cox proportional-hazard models to compute hazard ratios adjusted for traditional cardiovascular (CV) risk factors (hypertension, hypercholesterolaemia, diabetes mellitus, smoking) and previous ischaemic heart disease or peripheral vascular events, were used to predict all-cause mortality.

**Results:** Mean age at cancer diagnosis was 68 ± 10 years. 19 (18%) had a previous history of ischaemic heart disease (myocardial infarction and/or surgical or percutaneous revascularisation), 4 (4%) of cerebrovascular accident (CVA) or peripheral vascular disease (PVD). 34 (32%) had hypertension, 17 (16%) hypercholesterolaemia, 13 (12%) diabetes, 25 (24%) were current smokers, 35 (33%) ex-smoker and 19 (18%) had never smoked (no data on CV risks factors available for 17 patients and no smoking history in a further 9 cases). CAC was identified in 71 (68%) cases with 13 (12%) having severe calcification in at least one vessel, 23 (22%) moderate CAC and 35 (33%) mild CAC. 34 (32%) had no CAC.Over a mean follow up of 2.8 ± 2.1 years, 83 (79%) patients had died and 10 were lost to follow up. After adjusting for CV risks factors and previous ischaemic heart disease or peripheral vascular events, multivariate-adjusted hazard ratios for all-cause mortality for mild, moderate and severe CAC were 1.05 (95% CI, 0.42-2.63), p = 0.920; 1.00 (95% CI, 0.37-2.69), p = 0.996; and 1.99 (95% CI, 0.83-4.75), p = 0.121, respectively.

**Conclusions:** In our retrospective cohort of lung cancer patients, CAC identified on RT-planning CT chest scans was not an independent predictor of all-cause mortality.

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