

Predictors of near-term mortality in patients with peripheral arterial disease

Traditional atherosclerotic risk factors predict long-term cardiovascular disease events but are poor predictors of near-term events. The objective of this study was to determine whether elevated levels of D-dimer and biomarkers of inflammation were more closely associated with near-term than long-term mortality in patients with lower-extremity peripheral arterial disease (PAD) and whether greater increases in biomarker levels were associated with higher mortality rates during the first year than during later years.

A total of 377 men and women with peripheral arterial disease were included

in the study. Mortality was recorded at 1 year after biomarker measurement, 1–2 years after biomarker measurement and 2–3 years after biomarker measurement. Cox regression analyses were used to evaluate associations of biomarkers levels and changes in biomarkers with cardiovascular and all-cause mortality.

It was found that among persons with peripheral arterial disease, circulating levels of D-dimer and inflammatory markers were higher in the 1–2 years before death than in period more remote from death. Increasing levels of D-dimer and inflammatory biomarkers are independently associated with higher mortality in persons with peripheral arterial disease.

Vidua H, Tian L, Liu K et al (2008) Biomarkers of inflammation and thrombosis as predictors of near-term mortality in patients with peripheral arterial disease: a cohort study. *Ann Intern Med* **148**: 85–93

or ostial, bifurcated, or totally occluded lesions, as well as in patients with a reference-vessel diameter of less than 2.5 mm or greater than 3.75 mm or a lesion length of more than 30 mm.

The group reported that, among patients with off-label indications, the use of drug-eluting stents was not associated with an increased risk of death or myocardial infarction but was associated with a lower rate of repeat revascularization at 1 year, as compared with bare-metal stents. The findings supported the use of drug-eluting stents for off-label indications.

Marroquin O, Selzer F, Mulukutla S et al (2008) A comparison of bare-metal and drug-eluting stents for off-label indications. *N Engl J Med* **358**: 342–52

Enlarged right ventricle without shock in acute pulmonary embolism

The use of thrombolytic agents in patients with acute pulmonary embolism who are haemodynamically stable but have right ventricular enlargement has not been adequately measured. In this study, the team assessed the in-hospital mortality of haemodynamically stable patients with pulmonary embolism and right ventricular enlargement.

A total of 76 patients were enrolled in the Prospective Investigation of Pulmonary Embolism Diagnosis II study. Exclusions included shock, critical illness, ventilatory support, or myocardial infarction within 1 month, and ventricular tachycardia or ventricular fibrillation within 24 hours. The ratio of the right ventricular minor axis to the left ventricular axis measured on transverse images during computed tomographic angiography was evaluated.

The group concluded that in-hospital prognosis is good in patients with pulmonary embolism and right ventricular enlargement if they are not in shock, acutely ill, or on ventilatory support, or had a recent myocardial infarction or life-threatening arrhythmia. Right ventricular enlargement alone in patients with pulmonary embolism, therefore, does not seem to indicate a poor prognosis or the need for thrombolytic therapy.

Stein P, Beemath A, Matta F et al (2008) Enlarged right ventricle without shock in acute pulmonary embolism: prognosis. *Am J Med* **121**: 34–42

Interactions between secondhand smoke and genes that affect cystic fibrosis lung disease

Disease variation can be substantial even in conditions with a single gene aetiology such as cystic fibrosis. Simultaneously studying the effects of genes and environment may provide insight into the causes of this variation.

The aim of this investigation was to determine whether secondhand smoke exposure is associated with lung function and other outcomes in individuals with cystic fibrosis, whether socioeconomic status affects the relationship between secondhand smoke exposure and lung disease severity, and whether specific gene-environment interactions influence the effect of secondhand smoke exposure to lung function.

This study was a retrospective assessment of lung function, stratified by environmental and genetic factors. Data were collected by the US Cystic Fibrosis Twin and Sibling Study with missing data supplemented by the Cystic Fibrosis Foundation Data Registry. All participants were diagnosed with cystic fibrosis, were recruited between October 2000 and October 2006, and were primarily from the United States. The main outcome measures were disease-

specific cross-sectional and longitudinal measures of lung function.

It was concluded that any exposure to secondhand smoke adversely affects both cross-sectional and longitudinal measures of lung function in individuals with cystic fibrosis. Variations in the gene that causes cystic fibrosis (CFTR) and a cystic fibrosis-modifier gene (TGFB1) amplify the negative effects of secondhand smoke exposure.

Collaco M, Vanscoy L, Bremer L et al (2008) Interactions between secondhand smoke and genes that affect cystic fibrosis lung disease. *JAMA* **299**: 417–24

Comparing bare-metal and drug-eluting stents for off-label indications

Recent reports suggest that off-label use of drug-eluting stents is associated with an increased incidence of adverse events. It is not known whether the use of bare-metal stents would yield different results.

In this study, the team analysed data from 6551 patients in the National Heart, Lung and Blood Institute Dynamic Registry according to whether they were treated with drug-eluting stents or bare-metal stents and whether use was standard or off-label. Patients were followed for 1 year for the occurrence of cardiovascular events and death. Off-label use was defined as use in restenotic lesions, lesions in a bypass graft, left main coronary artery disease,