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Incidence and Significance of Pericardial Effusion in Patients with Pulmonary Arterial Hypertension

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Background: The incidence of new pericardial effusion (PEF) during long-term follow-up among patients with pulmonary arterial hypertension (PAH) is unknown. We aimed to determine this incidence and the prognostic significance of developing a new PEF among PAH patients.
Methods: We reviewed records of consecutive patients diagnosed with PAH at a university-based pulmonary vascular disease referral center between January 1990 and May 2010. Patients had systematically undergone right heart catheterization, trans-thoracic echocardiography, and coronary angiography during their diagnostic work-up. PEF was identified and quantified at successive echocardiography studies during follow-up. Effusions were graded as small (echo-free space in diastole <10 mm), moderate (10-20 mm), or large (>20 mm). Mortality predictors were identified by Cox proportional hazard models.
Results: The entire cohort consisted of 154 patients. The prevalence of identified PEF during initial assessment was 28.6%. During a median follow-up of 44 months the incidence of PEF among 102 patients who had no PEF at baseline was 44.1%. Patients who developed PEF during follow-up had no differences with respect to baseline characteristics, associated etiologies, right heart catheterization parameters, and extent of coronary disease. Among these 102 patients, survival estimates were 94.9%, 75.0% and 62.4% at 1, 3 and 5 years, respectively. Development of a PEF that was at least moderate-sized at its first appearance was a predictor of mortality in univariate (HR 6.9; 95% CI 2.6 - 18.1) as well as multivariate analysis (HR 4.0; 95% CI 1.3 - 12.4).
Conclusions: PEF occurs frequently in PAH patients. In patients with no PEF at baseline, the development of a new moderate-size or greater PEF is associated with increased mortality, whereas no significantly increased mortality was observed when a small PEF develops.