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Title: Echocardiographic parameters that predict poor outcomes in acute pulmonary embolism

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Body: Introduction: Limited information exists on the utility of modern echocardiographic measurements in predicting need for ICU care, hospital mortality and length of stay in acute pulmonary embolism (PE). Methods: We confirmed diagnosis of PE by reviewing CT angiogram. The patients were admitted between March 2010 and December 2012. We included 56 patients with acute PE in the present study. Patients with poor echocardiographic window were excluded. A large number of traditional and modern echocardiographic variables were measured. Binary logistic regression was used to identify echocardiographic predictors of hospital mortality. Results are given as hazard ratio (HR) and 95% confidence interval. Results: Age (mean (SD)) was 61 (15). A total of 52 (93 %) patients were admitted to the medical ICU and the rest to regular nursing floor. On admission HR was 99 (18) bpm, hemodynamic instability on admission was observed in 8 (14 %) patients, FIO2 was 51 (35) %. Thrombolytic therapy was given to 13 (23 %) of individuals. Only 7 (13%) patients died during hospitalization. Right ventricular diastolic diameter at mid-cavity (HR: 3.2 (1.2-8.7)), tricuspid annular plane systolic excursion (TAPSE) (HR: 0.8 (0.5-1)) and paradoxical interventricular septal motion (HR: 0.09 (0.02-0.54)) predicted hospital mortality. Of the patients that did not die during the hospitalization, echocardiographic parameters obtained on admission could not adequately predict the length of hospital stay. Conclusions: Right ventricular diameter, TAPSE and paradoxical septal motion predicted hospital mortality. In those patients that survived the hospitalization, echocardiographic parameters did not predict length of hospital stay.