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Predicting survival in pulmonary hypertension with echocardiography: Insights from a French single centre cohort
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Background: Pulmonary hypertension (PH) is a severe condition with high morbidity and mortality despite improvement in the therapeutic management. Contemporary prognostic equations derived from large cohorts mainly include invasive measurements. We sought to assess the relationship between echocardiographic characteristics of patients with PH followed up in our center and mortality.
Methods and results: We prospectively recruited 120 consecutive patients with PH: 67 patients had PAH, 30 had PH associated with lung disease and 23 had chronic thrombo-embolic PH. Clinical assessment and echocardiographic data were collected as well as BNP and 6-minute walk distance. Patients' mean age was 66.9±15.7 y, 68.3% of them were in stage III or IV NYHA. Mean BNP was 408±2439 mg/l and mean 6MWD was 297.6±131.3 m. Over a median follow-up of 11.9 months [4–15.1], 23 patients (19.2%) died. Univariate survival analysis identified the following as significantly associated with survival: Age <79y, female gender, NYHA class III, greater 6MWD, lower BNP, greater RV fractional area change (FAC), TAPSE and RVOT TVI, prolonged ejection time and pulmonary acceleration time, lower Tei index, right atrial (RA) area, pressure and RA/LA area ratio. The strongest echocardiographic predictors of mortality on multivariate analysis were the indexed RA area ~13, RV FAC ~30%, TAPSE ~16mm, Ejection time~/RR ~300ms and RVOT TVI ~11cm, respectively AUC=0.75, p=0.79, 0.74, 0.71 and 0.72.
Conclusion: Echocardiographic evaluation of PH patients, without replacing right heart catheterization, provides useful information. Simple parameters such as...