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Title: Cardiac biomarkers and outcome in patients with acute exacerbation of chronic obstructive pulmonary disease

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Body: Purpose. Cardiac biomarkers are associated with prognosis in patients with chronic obstructive pulmonary disease (COPD). The optimal timepoint for biomarker analysis remains uncertain thus we compared prognostic implications of admission and discharge concentrations with outcome after acute exacerbation of COPD. Methods. This was a prospective study in patients hospitalized with acute exacerbation of COPD. We measured NT-proBNP and troponin T (TnT) concentrations at admission and discharge. Hospitalizations and deaths were recorded for 6 months after discharge. Results. We included 127 patients (70±10 years, 70% men, GOLD III/IV 87%). Left ventricular ejection fraction was <50% in 11 (9%) patients and 96 (76%) patients had signs of diastolic dysfunction. At admission, NT-proBNP and TnT were elevated in 76 (60%) and 35 (28%) of patients, respectively. By discharge, this decreased to 46 (36%) and 24 (19%) patients. During follow-up, 44 (35%) patients were rehospitalized and 10 (8%) died. Kaplan-Meier curves analysis showed association between TnT at discharge and rehospitalizations (log-rank test 5.74, p=0.017). In a Cox model of proportional hazards adjusted for age, gender, GOLD stage, and left ventricular function, only TnT at discharge remained associated with rehospitalizations (hazard ratio 2.89, 95% confidence interval 1.13-7.36). No associations between admission and discharge concentrations of NT-proBNP, TnT and death were found. Conclusions. Cardiac biomarkers are frequently elevated in patients hospitalized for acute exacerbation of COPD. Discharge TnT was predictive of rehospitalizations whilst none of the biomarkers predicted death during 6 months.