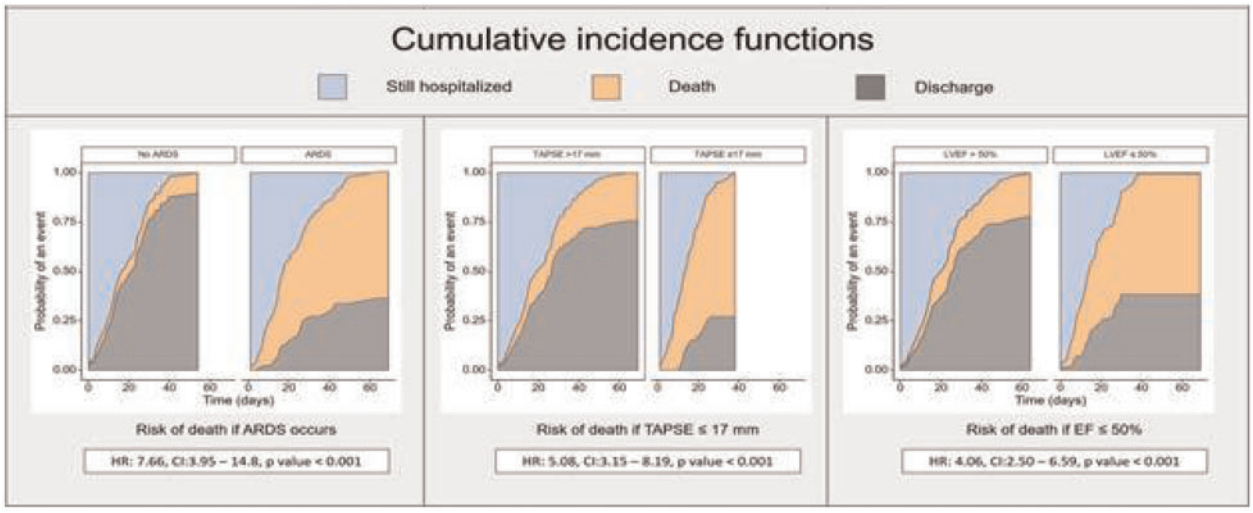
### 618 Clinical conditions and echocariographic parameters associated with mortality in COVID-19

Angelo Silverio[1], Marco Di Maio[1], Fernando Scudiero[2], Vincenzo Russo[3], Luca Esposito[1], Antonella Rispoli[1], Angelo Giano[1], Michele Bellino[1], Antonia Alfano[4], Rodolfo Citro[4], Carmine Vecchione[1], and Gennaro Galasso[1]
[1]Department of Medicine, Surgery and Dentistry, 'Scuola Medica Salernitana', University of Salerno, Baronissi, Salerno, Italy, [2]Division of Cardiology, 'Bologini' Hospital, ASST Bergamo EST, Seriate, Italy, [3]Chair of Cardiology, Department of Translational Medical Sciences, University of Campania 'Luigi Vanvitelli'—Monaldi and Cotugno Hospital, Naples, Italy, and [4]Division of Cardiology, Cardiovascular and Thoracic Department, University Hospital 'San Giovanni di Dio e Ruggi D'Aragona', Salerno, Italy

**Aims:** Coronavirus disease 2019 (COVID-19) is a recently recognized viral infective disease which can be complicated by acute respiratory stress syndrome (ARDS) and cardiovascular complications including severe arrhythmias, acute coronary syndromes, myocarditis, and pulmonary embolism. The aim of the present study was to identify the clinical conditions and echocardiographic parameters associated with in-hospital mortality in COVID-19.
**Methods and results:** This is a multicentre retrospective observational study including seven Italian centres. Patients hospitalized with COVID-19 from 1 March to 22 April 2020, were included into the study population. The association between baseline variables and the risk of in-hospital mortality was assessed through multivariable logistic regression and competing risk analyses. Out of 1401 patients admitted at the participating centres with confirmed diagnosis of COVID-19, 226 (16.1%) underwent transthoracic echocardiography (TTE) and were included in the present analysis. The mean age was 68.9 $\pm$ 13.9 years and male sex was reported in 141 patients (62.4%). Admission in intensive care unit was required for 72 patients (31.9%); in-hospital death occurred in 68 patients (30.1%). At multivariable analysis, left ventricular ejection fraction (LVEF, $P < 0.001$), tricuspid annular plane systolic excursion (TAPSE, $P < 0.001$), and ARDS ($P < 0.001$) were independently associated with in-hospital mortality. At competing risk analysis, we found a significantly higher risk of mortality in patients with ARDS vs. those without ARDS (HR: 7.66; CI: 3.95–14.8), in patients with TAPSE $\leq$ 17 mm vs. those with TAPSE $>$ 17 mm (HR: 5.08; CI: 3.15–8.19), and in patients with LVEF $\leq$ 50% vs. those with LVEF $>$ 50% (HR: 4.06; CI: 2.50–6.59) (Figure).
**Conclusions:** TTE might be a useful tool in risk stratification of patients with COVID-19. In particular, reduced LVEF as well as reduced TAPSE may help to identify patients at higher risk of death during hospitalization. Our preliminary findings need to be confirmed in larger, prospective studies.




618 Figure 1