

# Supplementary

## Supplementary results

**Table S1:** Presentation and adverse in-hospital events of hospitalized patients with pulmonary embolism (PE) in Germany in stratified for the year of hospitalization and the COVID-19 infection status.

<b>Parameters</b>	<b>Hospitalized patients with PE 2019  (n=98,485)</b>	<b>Hospitalized patients with PE 2020 without COVID-19  (n=94,356)</b>	<b>Hospitalized patients with PE 2020 with COVID-19  (n=3,362)</b>
<b>Case-fatality rate</b>	12,470 (12.7%)	11,795 (12.5%)	964 (28.7%)
<b>Resuscitation</b>	5,564 (5.6%)	5,115 (5.4%)	275 (8.2%)
<b>Shock</b>	5,214 (5.3%)	5,115 (5.4%)	453 (13.5%)
<b>Systemic thrombolysis</b>	3,917 (4.0%)	3,810 (3.9%)	173 (5.1%)
<b>RV-dysfunction</b>	23,205 (23.6%)	21,947 (23.1%)	706 (21.0%)
<b>Treatment on ICU</b>	18,241 (18.5%)	17,527 (18.6%)	1,325 (39.4%)
<b>Mechanical ventilation</b>	4,569 (4.6%)	4,532 (4.8%)	638 (19.0%)
<b>ARDS</b>	786 (0.8%)	747 (0.8%)	760 (22.6%)
<b>Pneumonia</b>	26,115 (26.5%)	25,664 (27.2%)	2,835 (84.3%)
<b>ECMO</b>	551 (0.6%)	429 (0.5%)	153 (4.6%)
<b>CT-Angiography</b>	64,503 (65.5%)	64,021 (67.9%)	2,517 (74.9%)
<b>Renal insufficiency</b>	12,413 (12.6%)	11,589 (12.3%)	344 (10.2%)

Abbreviations: ARDS, Acute respiratory distress syndrome; CT= Computed tomography; ECMO, extracorporeal membrane oxygenation; ICU, intensive care unit;

**Table S2:** Associations of patients' characteristics, comorbidities and adverse events with pulmonary embolism in patients with confirmed COVID-19 infection (univariable and multivariable logistic regression models).

<b>All in-hospital patients with COVID-19 infection</b>				
<b>(n=176,137; 3362 patients had diagnosis of PE [1.9%])</b>				
	<b>Univariate</b>		<b>Multivariate</b>	
			(adjusted for age, sex, cancer, coronary artery disease, heart failure, COPD, arterial hypertension, renal insufficiency, diabetes mellitus, atrial fibrillation, pAVK and hyperlipidemia)	
<b>Parameters</b>	<b>OR (95% CI)</b>	<b>P-value</b>	<b>OR (95% CI)</b>	<b>P-value</b>
<b>Age ≥ 70</b>	<b>0.903 (0.844-0.967)</b>	<b>0.004</b>	1.029 (0.952-1.112)	0.468
<b>Male Sex</b>	<b>1.208 (1.115-1.376)</b>	<b>&lt;0.001</b>	<b>1.349 (1.205-1.497)</b>	<b>&lt;0.001</b>
<b>Obesity</b>	<b>1.759 (1.559-1.985)</b>	<b>&lt;0.001</b>	<b>1.875 (1.657-2.121)</b>	<b>&lt;0.001</b>
<b>Comorbidities</b>				
<b>Coronary artery disease</b>	<b>0.735 (0.660-0.819)</b>	<b>&lt;0.001</b>	<b>0.683 (0.608-0.767)</b>	<b>&lt;0.001</b>
<b>Cancer</b>	<b>1.288 (1.121-1.481)</b>	<b>&lt;0.001</b>	<b>1.254 (1.090-1.442)</b>	<b>0.002</b>
<b>PAD</b>	<b>0.790 (0.637-0.981)</b>	<b>0.033</b>	0.838 (0.672-1.044)	0.116
<b>COPD</b>	<b>0.856 (0.741-0.988)</b>	<b>0.033</b>	0.815 (0.704-0.944)	0.006
<b>Arterial hypertension</b>	<b>1.000 (0.934-1.070)</b>	<b>0.991</b>	0.997 (0.926-1.073)	0.997
<b>Renal insufficiency</b>	<b>0.615 (0.549-0.688)</b>	<b>&lt;0.001</b>	<b>0.553 (0.491-0.623)</b>	<b>&lt;0.001</b>
<b>Diabetes mellitus</b>	0.996 (0.921-1.077)	0.925	0.989 (0.910-1.074)	0.790
<b>Atrial fibrillation</b>	<b>0.837 (0.764-0.917)</b>	<b>&lt;0.001</b>	<b>0.736 (0.666-0.812)</b>	<b>&lt;0.001</b>
<b>Charlson Index</b>	<b>1.042 (1.030-1.054)</b>	<b>&lt;0.001</b>	<b>1.095 (1.041-1.104)</b>	<b>&lt;0.001</b>

Abbreviations: CI= Confidence interval; COPD= Chronic obstructive pulmonary disease; OR= Odds ratio; PAD= peripheral artery disease

Values in bold indicate that the difference is statistically significance at least in the multivariate regression model ( $p < 0.05$ ).

**Table S3:** Associations of COVID-19 with in-hospital mortality in patients with pulmonary embolism in 2020 (univariable and multivariable logistic regression models).

<b>All in-hospital patients with pulmonary embolism in 2020</b>				
<b>(n=97,718; 12,759 patients died [13.1%])</b>				
	<b>Univariate</b>		<b>Multivariate</b>	
			(adjusted for age, sex, cancer, coronary artery disease, heart failure, COPD, arterial hypertension, renal insufficiency, diabetes mellitus, atrial fibrillation, pAVK and Hyperlipidemia)	
<b>Parameters</b>	<b>OR (95% CI)</b>	<b>P-value</b>	<b>OR (95% CI)</b>	<b>P-value</b>
<b>COVID-19</b>	<b>2.814 (2.605-3.040)</b>	<b>&lt;0.001</b>	<b>3.155 (2.910-3.420)</b>	<b>&lt;0.001</b>

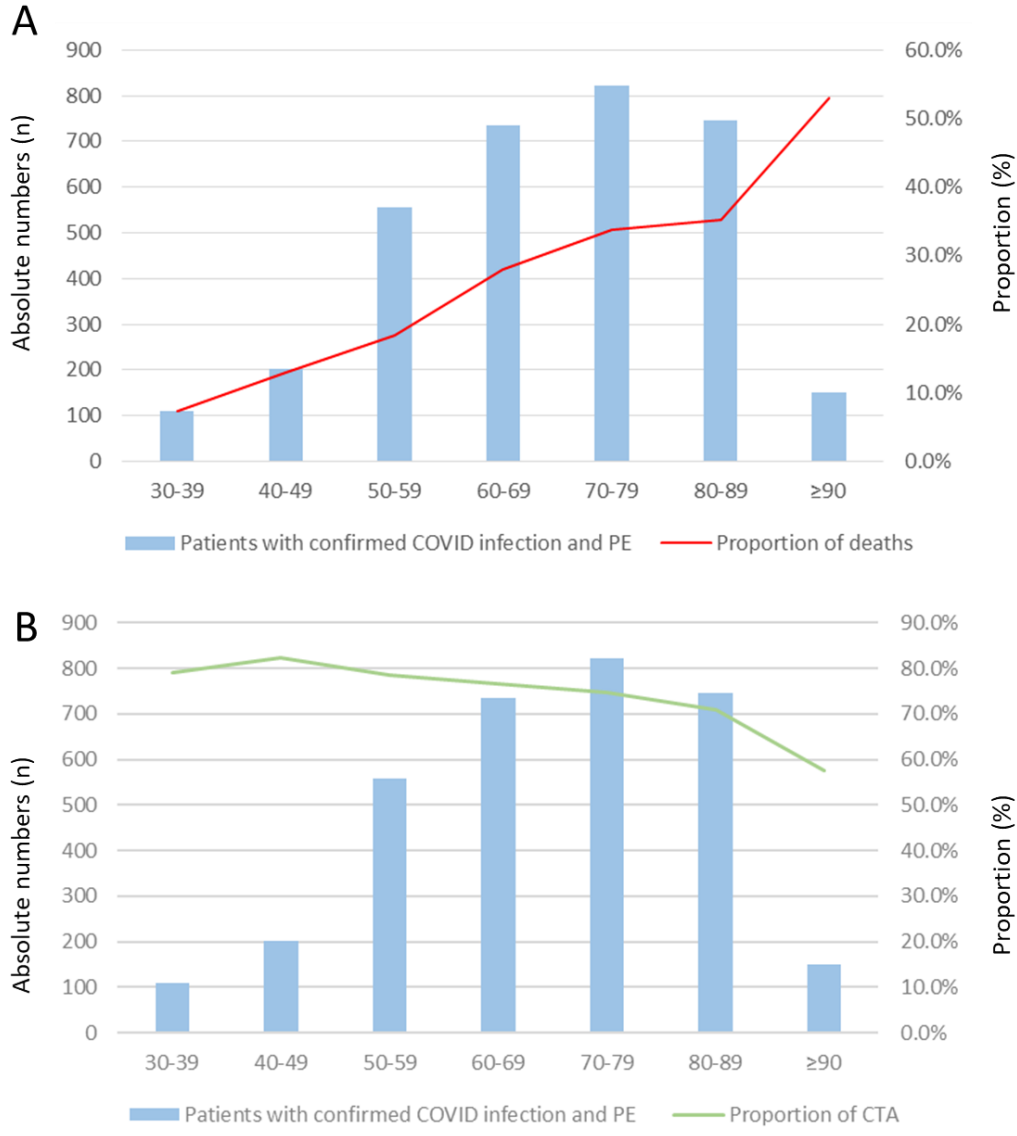
Abbreviations: CI= Confidence interval, OR= Odds ratio;

Values in bold indicate that the difference is statistically significance at least in the multivariate regression model (p<0.05).

**Figure S1:**

**Panel A** - Proportion of deaths (red line) in COVID-19 patients with PE (blue bars) stratified for age-decades of life

**Panel B** - Proportion of computed tomography pulmonary angiography (green line) in COVID-19 patients with PE (blue bars) stratified for age-decades of life



**Figure S2:** Proportion of PE (blue line) in COVID-19 patients undergoing surgeries (orange bars) stratified for different kind of surgeries.

