

Supplemental Materials

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1 **Definitions of the secondary endpoints**

2 Death was regarded as cardiac in origin unless obvious noncardiac causes
3 could be identified. Cardiovascular death included cardiac death, and other vascular
4 death related to stroke, renal disease, and vascular disease. Vascular disease included
5 aortic disease and peripheral artery disease. Index hospitalization was defined as the
6 initial hospitalization for COVID-19 treatment. Death of unknown cause during the
7 index hospitalization were regarded as respiratory failure death. Sudden cardiac death
8 was defined as unexplained death in previously stable patients. Stent thrombosis was
9 adjudicated according to the academic research consortium (ARC) definition (Table
10 S1).¹ Major stroke was defined as modified Rankin scale ≥ 2 (Table S2).² Heart failure
11 was defined as hospitalization due to worsening heart failure requiring intravenous drug
12 therapy. Myocarditis was diagnosed using the 2013 European Society of Cardiology
13 position statement criteria (Table S3).³ Pericarditis was specified with the 2015 ESC
14 Guidelines for the diagnosis and management of pericardial diseases. Takotsubo
15 syndrome was differentiated using the 2018 European Society of Cardiology consensus
16 paper.⁴ Tachyarrhythmias were those lasting for >30 seconds or requiring catheter
17 ablation, or usage of antiarrhythmic drugs. Venous thromboembolism (VTE) was
18 defined as objectively confirmed by imaging examination (ultrasound, contrast-
19 enhanced computed tomography, ventilation-perfusion lung scintigraphy, pulmonary
20 angiography, or contrast venography).⁵ Bleeding was defined according to the Bleeding
21 ARC (BARC) classification (Table S4).⁶ Any coronary revascularization was defined as
22 either PCI or CABG for any reason.

Supplemental Tables

Table S1. Definition of stent thrombosis

| Classification | Definition |
|-----------------------|--|
| Definite | Acute coronary syndrome with angiographic or pathological confirmation of thrombus |
| Probable | Any unexplained death within the first 30 days |
| Possible | <ul style="list-style-type: none"> ▪ Any unexplained death from 30 days after intracoronary stenting ▪ Any MI that is related to documented acute ischemia in the territory of the implanted stent without angiographic confirmation of stent thrombosis and in the absence of any other obvious cause |
| | |
| Timing | |
| Acute | 0 to 24 hours after stent implantation |
| Subacute | >24 hours to 30 days after stent implantation |
| Late | >30 days to 1 year after stent implantation |
| Very late | >1 year after stent implantation |

Table S2. Definition of modified Rankin scale

| Grade | Definition |
|--------------|--|
| 0 | No symptoms at all |
| 1 | No significant disability despite symptoms: able to carry out all usual duties and activities |
| 2 | Slight disability: unable to carry out all previous activities but able to look after own affairs without assistance |
| 3 | Moderate disability: requiring some help, but able to walk without assistance |
| 4 | Moderately severe disability: unable to walk without assistance, and unable to attend to own bodily needs without assistance |
| 5 | Severe disability: bedridden, incontinent, and requiring constant nursing care and attention |

Table S3. Definition of myocarditis

| | |
|---|---|
| Clinical presentations | |
| <ul style="list-style-type: none"> • Acute chest pain, pericarditic, or pseudo-ischaemic • New-onset (days up to 3 months) or worsening of: dyspnoea at rest or exercise, and/or fatigue, with or without left and/or right heart failure signs • Subacute/chronic (>3 months) or worsening of: dyspnoea at rest or exercise, and/or fatigue, with or without left and/or right heart failure signs • Palpitation, and/or unexplained arrhythmia symptoms and/or syncope, and/or aborted sudden cardiac death • Unexplained cardiogenic shock | |
| Diagnostic criteria | |
| I | ECG/Holter/stress test features: Newly abnormal 12 lead ECG and/or Holter and/or stress testing, any of the following: I to III degree atrioventricular block, or bundle branch block, ST/T wave change (ST elevation or non ST elevation, T wave inversion), sinus arrest, ventricular tachycardia or fibrillation and asystole, atrial fibrillation, reduced R wave height, intraventricular conduction delay (widened QRS complex), abnormal Q waves, low voltage, frequent premature beats, supraventricular tachycardia |
| II | Myocardial injury markers: Elevated TnT/TnI |
| III | Functional and structural abnormalities on cardiac imaging (echo/angio/CMR): New, otherwise unexplained LV and/or RV structure and function abnormality (including incidental finding in apparently asymptomatic subjects): regional wall motion or global systolic or diastolic function abnormality, with or without ventricular dilatation, with or without increased wall thickness, with or without pericardial effusion, with or without endocavitary thrombi |
| IV | Tissue characterization by CMR: Oedema and/or LGE of classical myocarditic pattern (see text) |
| Clinically suspected myocarditis if ≥ 1 clinical presentation and ≥ 1 diagnostic criteria from different categories, in the absence of: (1) angiographically detectable coronary artery disease (coronary stenosis $\geq 50\%$); (2) known pre-existing cardiovascular disease or extra-cardiac causes that could explain the syndrome. | |

If the patient is asymptomatic ≥ 2 diagnostic criteria should be met.

Table S4. Definition of Bleeding Academic Research Consortium

| Grade | Definition |
|---------|--|
| Type 0 | no bleeding |
| Type 1 | bleeding that is not actionable and does not cause the patient to seek unscheduled performance of studies, hospitalization, or treatment by a healthcare professional; may include episodes leading to self-discontinuation of medical therapy by the patient without consulting a healthcare professional |
| Type 2 | any overt, actionable sign of hemorrhage (eg, more bleeding than would be expected for a clinical circumstance, including bleeding found by imaging alone) that does not fit the criteria for type 3, 4, or 5 but does meet at least one of the following criteria: (1) requiring nonsurgical, medical intervention by a healthcare professional, (2) leading to hospitalization or increased level of care, or (3) prompting evaluation |
| Type 3a | Overt bleeding plus hemoglobin drop of 3 to <5 g/dL* (provided hemoglobin drop is related to bleed) Any transfusion with overt bleeding |
| Type 3b | Overt bleeding plus hemoglobin drop ≥ 5 g/dL* (provided hemoglobin drop is related to bleed) Cardiac tamponade Bleeding requiring surgical intervention for control (excluding dental/nasal/skin/hemorrhoid) Bleeding requiring intravenous vasoactive agents |
| Type 3c | Intracranial hemorrhage (does not include microbleeds or hemorrhagic transformation, does include intraspinal) Subcategories confirmed by autopsy or imaging or lumbar puncture Intraocular bleed compromising vision |
| Type 4 | CABG-related bleeding Perioperative intracranial bleeding within 48 h Reoperation after closure of sternotomy for the purpose of controlling bleeding |

| | |
|---------|--|
| | Transfusion of ≥ 5 U whole blood or packed red blood cells within a 48-h period† Chest tube output ≥ 2 L within a 24-h period |
| Type 5a | Probable fatal bleeding; no autopsy or imaging confirmation but clinically suspicious |
| Type 5b | Definite fatal bleeding; overt bleeding or autopsy or imaging confirmation |

Table S5: Patient characteristics

| | Overall (N=917) | TnI < 5 ng/L (N=179) | TnI 5 ng/L to 99th%tile (N=231) | TnI ≥ 99th%tile (N=134) | P value | NT-proBNP < 125 pg/mL (N=251) | NT-proBNP 125 to 900 pg/mL (N=202) | NT-proBNP ≥ 900 pg/mL (N=93) | P value |
|--------------------------------|----------------------------|--|--|--|----------------|---|---|---|----------------|
| Age, years | 60.8 ± 19.1 | 45.1 ± 14.6 | 64.5 ± 13.8 | 73.2 ± 14.9 | <0.001 | 48.8 ± 15.2 | 67.5 ± 14.6 | 74.3 ± 14.5 | <0.001 |
| Age ≥ 75 years | 227 (24.8%) | 3 (1.7%) | 57 (24.7%) | 71 (53.0%) | <0.001 | 4 (1.6%) | 73 (36.1%) | 54 (58.1%) | <0.001 |
| Male | 591 (64.4%) | 106 (59.2%) | 169 (73.2%) | 56 (41.8%) | <0.001 | 169 (67.3%) | 114 (56.4%) | 49 (52.7%) | 0.013 |
| Body mass index | 24.1 ± 5.1 | 24.4 ± 4.7 | 24.7 ± 5.1 | 22.9 ± 5.2 | 0.001 | 25.4 ± 4.6 | 23.8 ± 5.3 | 21.3 ± 4.4 | <0.001 |
| BMI ≥ 25 | 284 (36.0%) | 58 (35.8%) | 91 (44.6%) | 30 (27.5%) | 0.009 | 113 (48.9%) | 55 (31.6%) | 10 (13.5%) | <0.001 |
| *Cardiovascular disease | 130 (14.2%) | 4 (2.2%) | 28 (12.1%) | 45 (33.6%) | <0.001 | 12 (4.8%) | 25 (12.4%) | 37 (39.8%) | <0.001 |
| Prior angina pectoris | 36 (3.9%) | 0 (0.0%) | 10 (4.3%) | 11 (8.2%) | 0.001 | 3 (1.2%) | 6 (3.0%) | 13 (14.0%) | <0.001 |
| Prior myocardial infarction | 13 (1.4%) | 0 (0.0%) | 5 (2.2%) | 3 (2.2%) | 0.040 | 2 (0.8%) | 2 (1.0%) | 4 (4.3%) | 0.095 |
| Heart failure | 35 (3.8%) | 1 (0.1%) | 5 (2.2%) | 19 (14.2%) | <0.001 | 3 (1.2%) | 7 (3.5%) | 14 (15.1%) | <0.001 |
| Atrial fibrillation | 54 (5.9%) | 2 (1.1%) | 9 (3.9%) | 22 (16.4%) | <0.001 | 3 (1.2%) | 9 (4.5%) | 20 (21.5%) | <0.001 |
| Ventricular arrhythmia | 3 (0.3%) | 1 (0.6%) | 1 (0.4%) | 1 (0.8%) | 0.93 | 1 (0.4%) | 1 (0.5%) | 1 (1.1%) | 0.78 |

| | | | | | | | | | |
|--|-------------|------------|-------------|------------|--------|-------------|-------------|------------|--------|
| †Vascular disease | 23 (2.5%) | 1 (0.6%) | 4 (1.7%) | 6 (4.5%) | 0.054 | 1 (0.4%) | 5 (2.5%) | 4 (4.3%) | 0.032 |
| Hypertension | 395 (43%) | 28 (15.6%) | 114 (49.4%) | 81 (60.5%) | <0.001 | 69 (27.5%) | 100 (49.5%) | 52 (55.9%) | <0.001 |
| Dyslipidemia | 226 (24.6%) | 24 (13.4%) | 66 (28.6%) | 37 (27.6%) | 0.001 | 49 (19.5%) | 56 (27.7%) | 24 (25.8%) | 0.11 |
| Chronic kidney disease | 97 (10.6%) | 2 (1.1%) | 17 (7.4%) | 35 (26.1%) | <0.001 | 5 (2.0%) | 18 (8.9%) | 32 (34.4%) | <0.001 |
| Diabetes mellitus | 229 (24.9%) | 23 (12.9%) | 70 (30.3%) | 39 (29.1%) | <0.001 | 45 (17.9%) | 60 (29.7%) | 27 (20.5%) | 0.007 |
| Current smoker (N=880) | 132 (15.0%) | 31 (17.9%) | 36 (16.4%) | 15 (12.2%) | 0.40 | 40 (16.3%) | 35 (18.3%) | 6 (7.4%) | 0.071 |
| Former smoker (N=880) | 332 (37.7%) | 45 (26.0%) | 99 (45.0%) | 35 (28.5%) | <0.001 | 81 (33.1%) | 68 (35.6%) | 31 (38.3%) | 0.67 |
| Chronic obstructive pulmonary disease | 74 (8.1%) | 9 (5.0%) | 18 (7.8%) | 12 (9.0%) | 0.37 | 11 (4.4%) | 17 (8.4%) | 10 (10.8%) | 0.071 |
| Chronic liver disease | 36 (3.9%) | 3 (1.7%) | 12 (5.2%) | 12 (9.0%) | 0.013 | 6 (2.4%) | 14 (6.9%) | 5 (5.4%) | 0.066 |
| Malignancy | 45 (4.9%) | 7 (3.9%) | 15 (6.5%) | 8 (6.0%) | 0.51 | 9 (3.6%) | 15 (7.4%) | 6 (6.5%) | 0.18 |
| Immunosuppressive status | 28 (3.1%) | 4 (2.2%) | 9 (3.9%) | 5 (3.7%) | 0.62 | 4 (1.6%) | 10 (5.0%) | 5 (5.4%) | 0.084 |
| Pregnancy | 31 (3.4%) | 21 (11.7%) | 2 (0.9%) | 0 (0.0%) | <0.001 | 19 (7.6%) | 4 (2.0%) | 0 (0.0%) | 0.001 |
| COVID-19 Vaccination | 19 (2.1%) | 3 (1.7%) | 5 (2.2%) | 6 (4.5%) | 0.26 | 3 (1.2%) | 5 (2.5%) | 5 (5.4%) | 0.078 |
| Severity on admission | | | | | | | | | |
| Mild | 237 (25.8%) | 81 (46.0%) | 48 (20.8%) | 30 (22.6%) | <0.001 | 100 (40.2%) | 34 (16.9%) | 24 (25.8%) | <0.001 |

| | | | | | | | | | |
|--|-------------|------------|-------------|------------|--------|-------------|-------------|------------|--------|
| Moderate | 80 (8.7%) | 19 (10.8%) | 24 (10.4%) | 12 (9.0%) | 0.87 | 32 (12.9%) | 19 (9.5%) | 4 (4.3%) | 0.042 |
| Severe (needs oxygenation) | 515 (56.2%) | 65 (36.9%) | 131 (56.7%) | 73 (4.8%) | <0.001 | 107 (43.0%) | 117 (58.2%) | 51 (54.8%) | 0.004 |
| Critical (ventilator assisted) | 85 (8.7%) | 11 (6.3%) | 28 (12.1%) | 18 (13.5%) | 0.057 | 10 (4.0%) | 31 (15.4%) | 14 (15.1%) | <0.001 |
| Systolic blood pressure <100 mmHg on admission | 47 (5.3%) | 9 (5.1%) | 8 (3.5%) | 16 (11.9%) | 0.004 | 10 (4.1%) | 12 (5.9%) | 11 (11.8%) | 0.029 |
| WBC \geq 9,000/ μ L On admission | 227 (25.6%) | 29 (16.3%) | 58 (25.2%) | 48 (35.8%) | <0.001 | 40 (16.0%) | 60 (29.9%) | 37 (39.8%) | <0.001 |
| C-reactive protein \geq 5 mg/dL on admission | 521 (59%) | 60 (34.1%) | 144 (62.9%) | 79 (59.0%) | <0.001 | 113 (45.6%) | 114 (56.7%) | 60 (64.5%) | 0.003 |

Table S5: Patient characteristics (Cont')

| | Overall (N=917) | CK < UNL (N=657) | CK UNLto 3 times of UNL (N= 171) | CK ≥ 3 times of UNL (N= 59) | P value | CK-MB < UNL (N=427) | CK-MB UNL to 3 times of UNL (N= 39) | CK-MB ≥ 3 times of UNL (N= 18) | P value |
|-----------------------------|----------------------------|------------------------------------|---|--|----------------|---------------------------------------|--|---|----------------|
| Age, years | 60.8 ± 19.1 | 61.2 ± 17.3 | 65.0 ± 18.2 | 63.8 ± 16.8 | 0.007 | 57.7 ± 17.8 | 63.4 ± 20.5 | 67.7 ± 12.3 | 0.005 |
| Age ≥ 75 years | 227 (24.8%) | 149 (22.7%) | 58 (33.9%) | 18 (30.5%) | 0.008 | 79 (18.5%) | 12 (30.8%) | 6 (33.3%) | 0.087 |
| Male | 591 (64.4%) | 434 (66.1%) | 99 (57.9%) | 42 (71.2%) | 0.08 | 266 (62.3%) | 22 (56.4%) | 9 (50.0%) | 0.46 |
| Body mass index | 24.1 ± 5.1 | 24.0 ± 4.7 | 24.7 ± 6.2 | 25.5 ± 6.3 | 0.15 | 24.5 ± 5.0 | 23.9 ± 4.8 | 23.9 ± 8.0 | 0.76 |
| BMI ≥ 25 | 284 (36.0%) | 207 (35.8%) | 52 (38.0%) | 23 (50.0%) | 0.004 | 150 (39.7%) | 12 (37.5%) | 6 (40.0%) | <0.001 |
| *Cardiovascular disease | 130 (14.2%) | 96 (14.6%) | 24 (14.0%) | 8 (13.6%) | 0.96 | 49 (11.5%) | 4 (10.3%) | 6 (33.3%) | 0.02 |
| Prior angina pectoris | 36 (3.9%) | 26 (4.0%) | 7 (4.1%) | 2 (3.4%) | 0.97 | 12 (2.8%) | 3 (7.7%) | 1 (5.6%) | 0.32 |
| Prior myocardial infarction | 13 (1.4%) | 11 (1.7%) | 1 (1.6%) | 1 (1.7%) | 0.57 | 5 (1.2%) | 0 (0.0%) | 1 (5.6%) | 0.20 |
| Heart failure | 35 (3.8%) | 25 (3.8%) | 8 (4.7%) | 2 (3.4%) | 0.85 | 13 (3.0%) | 1 (2.6%) | 3 (16.7%) | 0.07 |
| Atrial fibrillation | 54 (5.9%) | 41 (6.2%) | 9 (5.3%) | 3 (5.1%) | 0.85 | 24 (5.6%) | 0 (0.0%) | 4 (22.2%) | 0.007 |
| Ventricular arrhythmia | 3 (0.3%) | 3 (0.5%) | 0 (0.0%) | 0 (0.0%) | 0.41 | 3 (0.7%) | 0 (0.0%) | 0 (0.0%) | 0.69 |
| †Vascular disease | 23 (2.5%) | 16 (2.4%) | 4 (2.3%) | 2 (3.4%) | 0.90 | 6 (1.4%) | 0 (0.0%) | 1 (5.6%) | 0.30 |

| | | | | | | | | | |
|--|-------------|-------------|------------|------------|--------|-------------|------------|------------|-------|
| Hypertension | 395 (43%) | 274 (41.7%) | 88 (51.5%) | 31 (52.5%) | 0.03 | 155 (36.3%) | 22 (56.4%) | 11 (61.1%) | 0.007 |
| Dyslipidemia | 226 (24.6%) | 169 (25.7%) | 44 (25.7%) | 11 (18.6%) | 0.46 | 97 (22.7%) | 5 (12.8%) | 4 (22.2%) | 0.36 |
| Chronic kidney disease | 97 (10.6%) | 70 (10.7%) | 9 (5.3%) | 10 (17.0%) | 0.02 | 32 (7.5%) | 6 (15.4%) | 2 (11.1%) | 0.27 |
| Diabetes mellitus | 229 (24.9%) | 161 (24.5%) | 47 (27.5%) | 19 (32.2%) | 0.35 | 96 (22.5%) | 9 (23.1%) | 6 (33.3%) | 0.56 |
| Current smoker (N=880) | 132 (15.0%) | 97 (15.4%) | 21 (13.0%) | 13 (22.4%) | 0.24 | 64 (15.8%) | 5 (13.2%) | 5 (33.3%) | 0.23 |
| Former smoker (N=880) | 332 (37.7%) | 258 (40.8%) | 49 (30.4%) | 23 (39.7%) | 0.05 | 139 (34.4%) | 16 (42.1%) | 2 (13.3%) | 0.13 |
| Chronic obstructive pulmonary disease | 74 (8.1%) | 56 (8.5%) | 12 (7.0%) | 6 (10.2%) | 0.71 | 29 (6.8%) | 3 (7.7%) | 1 (5.6%) | 0.95 |
| Chronic liver disease | 36 (3.9%) | 27 (4.1%) | 7 (4.1%) | 2 (3.4%) | 0.96 | 19 (4.5%) | 2 (5.1%) | 2 (11.1%) | 0.53 |
| Malignancy | 45 (4.9%) | 37 (5.6%) | 7 (4.1%) | 0 (0.0%) | 0.14 | 23 (5.4%) | 3 (7.7%) | 0 (0.0%) | 0.31 |
| Immunosuppressive status | 28 (3.1%) | 24 (3.7%) | 3 (1.8%) | 1 (1.7%) | 0.36 | 14 (3.3%) | 2 (5.1%) | 1 (5.6%) | 0.77 |
| Pregnancy | 31 (3.4%) | 20 (3.0%) | 8 (4.7%) | 0 (0.0%) | 0.20 | 21 (4.9%) | 2 (5.1%) | 0 (0.0%) | 0.41 |
| COVID-19 Vaccination | 19 (2.1%) | 14 (2.1%) | 3 (1.8%) | 2 (3.4%) | 0.78 | 9 (2.1%) | 1 (2.6%) | 2 (11.1%) | 0.19 |
| Severity on admission | | | | | | | | | |
| Mild | 237 (25.8%) | 175 (26.7%) | 27 (15.9%) | 3 (5.2%) | <0.001 | 139 (32.8%) | 9 (23.1%) | 2 (11.7%) | 0.07 |
| Moderate | 80 (8.7%) | 60 (9.2%) | 13 (7.7%) | 6 (10.3%) | 0.76 | 51 (12.0%) | 1 (2.6%) | 1 (5.9%) | 0.08 |

| | | | | | | | | | |
|--|-------------|-------------|-------------|------------|--------|-------------|------------|------------|--------|
| Severe (needs oxygenation) | 515 (56.2%) | 369 (56.3%) | 102 (60.0%) | 43 (74.1%) | 0.02 | 199 (46.9%) | 21 (53.9%) | 8 (47.1%) | 0.71 |
| Critical (ventilator assisted) | 85 (8.7%) | 51 (7.8%) | 28 (16.5%) | 6 (10.3%) | 0.005 | 35 (8.3%) | 8 (20.5%) | 6 (35.3%) | 0.001 |
| Systolic blood pressure <100 mmHg on admission | 47 (5.3%) | 26 (4.0%) | 12 (7.1%) | 5 (8.5%) | 0.10 | 20 (4.7%) | 4 (10.5%) | 4 (22.2%) | 0.02 |
| WBC \geq 9,000/ μ L On admission | 227 (25.6%) | 163 (24.9%) | 46 (27.1%) | 17 (28.8%) | 0.71 | 89 (20.9%) | 16 (42.1%) | 12 (66.7%) | <0.001 |
| C-reactive protein \geq 5 mg/dL on admission | 521 (59%) | 357 (54.6%) | 111 (65.7%) | 51 (86.4%) | <0.001 | 211 (49.9%) | 22 (57.9%) | 13 (72.2%) | 0.11 |

Continuous variables are shown as mean \pm standard deviation.

* Cardiovascular disease included coronary artery disease, heart failure, atrial fibrillation, ventricular arrhythmia, and vascular disease (aortic and peripheral artery disease).

† Vascular disease included aortic disease and peripheral artery disease.

Table S6: Clinical outcomes at 30 days: Stratified by Cardiac Biomarkers

| Events | Total Cohort (N=917) | HsTnI < 5 ng/L (N=179) | HsTnI 5 ng/L to 99 th %tile (N=231) | HsTnI ≥ 99 th %tile (N=134) | P value | NT-proBNP < 125 pg/mL (N=251) | NT-proBNP 125 to 900 pg/mL (N=202) | NT-proBNP ≥ 900 pg/mL (N=93) | P value |
|-------------------------------------|-------------------------|------------------------------|---|--|---------|-------------------------------------|---|------------------------------------|---------|
| All-cause Death | 88 (12.7%) | 5 (4.3%) | 16 (8.8%) | 31 (25.2%) | <0.001 | 9 (5.3%) | 18 (10.5%) | 26 (31.9%) | <0.001 |
| Respiratory failure death | 82 (11.8%) | 5 (4.3%) | 15 (8.1%) | 30 (24.7%) | <0.001 | 9 (5.3%) | 17 (9.9%) | 25 (31.1%) | <0.001 |
| Cardiovascular death | 3 (0.5%) | 0 (0.0%) | 0 (0.0%) | 1 (0.8%) | 0.22 | 0 (0.0%) | 1 (0.5%) | 0 (0.0%) | 0.43 |
| Advanced respiratory support | 344 (39.7%) | 43 (25.4%) | 98 (44.9%) | 58 (45.7%) | <0.001 | 72 (30.2%) | 92 (48.8%) | 38 (43.8%) | <0.001 |
| Endotracheal Intubation | 206 (23.6%) | 15 (8.6%) | 64 (28.7%) | 36 (28.1%) | <0.001 | 36 (28.1%) | 55 (28.0%) | 26 (30.3%) | <0.001 |
| HFNC | 298 (36.2%) | 40 (26.7%) | 93 (42.7%) | 47 (39.5%) | 0.004 | 70 (32.2%) | 84 (43.4%) | 30 (37.4%) | 0.48 |
| Myocardial Infarction | 4 (0.5%) | 0 (0.0%) | 0 (0.0%) | 3 (2.2%) | 0.01 | 0 (0.0%) | 1 (0.5%) | 2 (2.2%) | 0.56 |
| Heart Failure | 12 (1.4%) | 0 (0.0%) | 2 (1.1%) | 6 (4.5%) | 0.003 | 0 (0.0%) | 1 (0.7%) | 6 (6.5%) | <0.001 |
| Takotsubo Syndrome | 5 (0.6%) | 0 (0.0%) | 1 (0.6%) | 1 (0.8%) | 0.58 | 1 (0.6%) | 1 (0.6%) | 1 (1.1%) | 0.74 |
| Acute myocarditis | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | |
| Acute Pericarditis | 1 (0.1%) | 1 (0.6%) | 0 (0.0%) | 0 (0.0%) | 0.36 | 1 (0.4%) | 0 (0.0%) | 0 (0.0%) | 0.56 |

| | | | | | | | | | |
|---|-----------|----------|-----------|------------|--------|----------|-----------|------------|--------|
| Stroke | 9 (1.1%) | 0 (0.0%) | 5 (2.3%) | 2 (1.5%) | 0.16 | 1 (0.5%) | 2 (1.0%) | 4 (4.4%) | 0.016 |
| Cerebral Infarction | 8 (0.9%) | 0 (0.0%) | 5 (2.2%) | 2 (1.5%) | 0.16 | 0 (0.0%) | 3 (1.5%) | 4 (4.4%) | 0.01 |
| Cerebral Bleeding | 2 (0.3%) | 0 (0.0%) | 1 (0.5%) | 0 (0.0%) | 0.54 | 1 (0.5%) | 0 (0.0%) | 0 (0.0%) | 0.50 |
| VTE | 20 (3.0%) | 2 (1.1%) | 5 (2.6%) | 4 (3.5%) | 0.34 | 3 (1.6%) | 6 (3.5%) | 2 (2.2%) | 0.39 |
| MACCE | 49 (6.5%) | 3 (1.7%) | 13 (6.6%) | 12 (9.4%) | 0.01 | 6 (3.1%) | 11 (6.3%) | 11 (12%) | <0.001 |
| Atrial Tachyarrhythmia | 47 (5.8%) | 0 (0.0%) | 10 (4.9%) | 17 (13.2%) | <0.001 | 2 (0.9%) | 11 (5.9%) | 14 (15.5%) | <0.001 |
| Bleeding (GUSTO moderate-severe) | 15 (2.0%) | 1 (0.6%) | 2 (1.0%) | 6 (5.3%) | 0.03 | 3 (1.5%) | 1 (0.5%) | 5 (7.1%) | 0.01 |

HFNC= high-flow nasal cannula oxygen therapy; MACCE=major adverse cerebrocardiovascular event; VTE=venous thromboembolism.

Number of patients with event and cumulative incidence (parenthesis). MACCE was comprised of a composite of cardiovascular death, myocardial infarction, stroke, heart failure, takotsubo syndrome, myocarditis, pericarditis, or VTE. Advanced respiratory support was defined as a composite of invasive endotracheal intubation use or high-flow nasal cannula oxygen therapy (HFNC).

Table S6. Clinical outcomes at 30 days: Stratified by Cardiac Biomarkers (Cont')

| Events | Total Cohort (N=917) | CK < UNL (N=657) | CK UNL to 3UNL (N=171) | CK ≥ 3UNL (N=59) | P value | CK-MB < UNL (N=427) | CK-MB UNL to 3UNL (N=39) | CK-MB ≥ 3UNL (N=18) | P value |
|-------------------------------------|-------------------------|------------------------|---------------------------------|------------------------|---------|---------------------------|-----------------------------------|---------------------------|---------|
| All-cause Death | 88 (12.7%) | 51 (10.6%) | 24 (16.4%) | 12 (23.5%) | <0.001 | 25 (7.8%) | 7 (20.4%) | 7 (38.9%) | <0.001 |
| Respiratory failure death | 82 (11.8%) | 47 (9.6%) | 23 (15.9%) | 11 (22.1%) | <0.001 | 24 (7.4%) | 7 (20.4%) | 6 (35.1%) | <0.001 |
| Cardiovascular death | 3 (0.5%) | 2 (0.5%) | 1 (0.7%) | 0 (0.0%) | 0.88 | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | |
| Advanced respiratory support | 344 (39.7%) | 231 (37.0%) | 82 (50.7%) | 31 (54.1%) | <0.001 | 143 (35.5%) | 20 (54.2%) | 9 (56.3%) | 0.003 |
| Endotracheal Intubation | 206 (23.6%) | 132 (20.9%) | 56 (34.4%) | 18 (31.6%) | <0.001 | 75 (18.2%) | 16 (41.3%) | 9 (53.7%) | <0.001 |
| HFNC | 298 (36.2%) | 189 (30.1%) | 68 (41.5%) | 28 (47.9%) | 0.001 | 124 (30.7%) | 15 (40.7%) | 7 (42.5%) | 0.18 |
| Myocardial Infarction | 4 (0.5%) | 2 (0.3%) | 1 (0.6%) | 1 (1.7%) | 0.31 | 0 (0.0%) | 0 (0.0%) | 1 (5.6%) | <0.001 |
| Heart Failure | 12 (1.4%) | 8 (1.3%) | 3 (1.8%) | 1 (1.7%) | 0.84 | 5 (1.3%) | 0 (0.0%) | 1 (5.6%) | 0.16 |
| Takotsubo Syndrome | 5 (0.6%) | 3 (0.5%) | 2 (1.3%) | 0 (0.0%) | 0.49 | 2 (0.6%) | 0 (0.0%) | 0 (0.0%) | 0.87 |
| Acute myocarditis | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | |
| Acute Pericarditis | 1 (0.1%) | 1 (0.2%) | 0 (0.0%) | 0 (0.0%) | 0.84 | 1 (0.2%) | 0 (0.0%) | 0 (0.0%) | 0.94 |
| Stroke | 9 (1.1%) | 7 (1.3%) | 2 (1.2%) | 0 (0.0%) | 0.72 | 5 (1.3%) | 0 (0.0%) | 1 (5.6%) | 0.20 |
| Cerebral Infarction | 8 (0.9%) | 7 (1.2%) | 1 (0.6%) | 0 (0.0%) | 0.62 | 5 (1.2%) | 0 (0.0%) | 1 (5.6%) | 0.19 |
| Cerebral Bleeding | 2 (0.3%) | 1 (0.2%) | 1 (0.7%) | 0 (0.0%) | 0.58 | 1 (0.3%) | 0 (0.0%) | 0 (0.0%) | 0.93 |
| VTE | 20 (3.0%) | 10 (1.8%) | 9 (6.9%) | 2 (4.2%) | 0.005 | 7 (1.9%) | 1 (2.9%) | 1 (5.6%) | 0.58 |
| MACCE | 49 (6.5%) | 31 (5.6%) | 15 (11%) | 3 (5.9%) | 0.05 | 19 (5.0%) | 1 (2.9%) | 2 (11.1%) | 0.32 |

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|---|-----------|-----------|-----------|-----------|-------|-----------|----------|-----------|---------|
| Atrial Tachyarrhythmia | 47 (5.8%) | 27 (4.6%) | 12 (8.0%) | 8 (13.9%) | 0.001 | 14 (3.7%) | 1 (2.6%) | 6 (33.8%) | <0.0001 |
| Bleeding (GUSTO moderate-severe) | 15 (2.0%) | 9 (1.8%) | 5 (3.3%) | 1 (1.8%) | 0.29 | 5 (1.4%) | 0 (0.0%) | 1 (6.3%) | 0.21 |

HFNC= high-flow nasal cannula oxygen therapy; MACCE=major adverse cerebrocardiovascular event; VTE=venous thromboembolism.

Number of patients with event and cumulative incidence (parenthesis). MACCE was comprised of a composite of cardiovascular death, myocardial infarction, stroke, heart failure, takotsubo syndrome, myocarditis, pericarditis, or VTE. Advanced respiratory support was defined as a composite of invasive endotracheal intubation use or high-flow nasal cannula oxygen therapy (HFNC).

Supplemental references

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