# SUPPLEMENTAL MATERIAL

**Table S1. Preoperative variables entered into the logistic regression model for cardiogenic shock.**

**Preoperative variables**

| | | |
|---|---|---|
| *1)* | Female sex | (yes/no) |
| 2) | Age (years) | (metric) |
| 3) | Body mass index >30 kg/m$^2$ | (yes/no) |
| 4) | Coronary artery disease (3VD) | (yes/no) |
| 5) | Left main stem stenosis | (yes/no) |
| 6) | STEMI | (yes/no) |
| 7) | Previous MI | (yes/no) |
| 8) | Previous Stroke | (yes/no) |
| 9) | Diabetes | (yes/no) |
| 10) | Hypertension | (yes/no) |
| 11) | Hyperlipidemia | (yes/no) |
| 12) | COLD | (yes/no) |
| 13) | Smoker | (yes/no) |
| 14) | Peripheral vascular disease | (yes/no) |
| 15) | Atrial fibrillation | (yes/no) |
| 16) | Chronic kidney disease (EPI Stage III-IV) | (yes/no) |
| 17) | Left ventricular ejection fraction | (yes/no) |
| 18) | PCI 24 hrs before surgery | (yes/no) |
| 19) | Previous cardiac surgery | (yes/no) |
| 20) | Logistic EuroSCORE | (metric) |
| 21) | Troponin T or I levels >2 ULN | (yes/no) |
| 22) | Dual antiplatelet therapy | (yes/no) |

**Table S2. Pre- and intraoperative variables entered into the logistic regression model for in-hospital mortality and MACCE.**

**Preoperative variables**

| | | |
|---|---|---|
| 23) | Female sex | (yes/no) |
| 24) | Age (years) | (metric) |
| 25) | Body mass index | (metric) |
| 26) | Coronary artery disease | (1VD, 2VD, 3VD) |
| 27) | Left main stem stenosis | (yes/no) |
| 28) | Previous MI | (yes/no) |
| 29) | Previous Stroke | (yes/no) |
| 30) | Diabetes | (yes/no) |
| 31) | Hypertension | (yes/no) |
| 32) | Hyperlipidemia | (yes/no) |
| 33) | COLD | (yes/no) |
| 34) | Smoker | (yes/no) |
| 35) | Peripheral vascular disease | (yes/no) |
| 36) | Atrial fibrillation | (yes/no) |
| 37) | Chronic kidney disease (EPI Stage III-IV) | (yes/no) |
| 38) | Left ventricular ejection fraction | (yes/no) |
| 39) | PCI 24 hrs before surgery | (yes/no) |
| 40) | Previous cardiac surgery | (yes/no) |
| 41) | Logistic EuroSCORE | (metric) |
| 42) | Troponin T or I levels >2 ULN | (yes/no) |
| 43) | Dual antiplatelet therapy | (yes/no) |
| 44) | Cardiogenic shock* | (yes/no) |

*only used for the MVA model of IHM and MACCE in ACS subtypes

**Operative variables**

| | | |
|---|---|---|
| 1) | Off-pump surgery | (yes/no) |
| 2) | Cardioplegia | (1= HTK vs. 2=cold blood CP vs. 3=warm blood) |

3)       CPB time                                          (metric)

4)       Aortic cross-clamp time                    (metric)

5)       Multiple/Total arterial revascularization       (yes/no)

6)       Number of grafts                           (metric)

7)       Emergency CABG <24 hrs from onset of symptoms (yes/no)

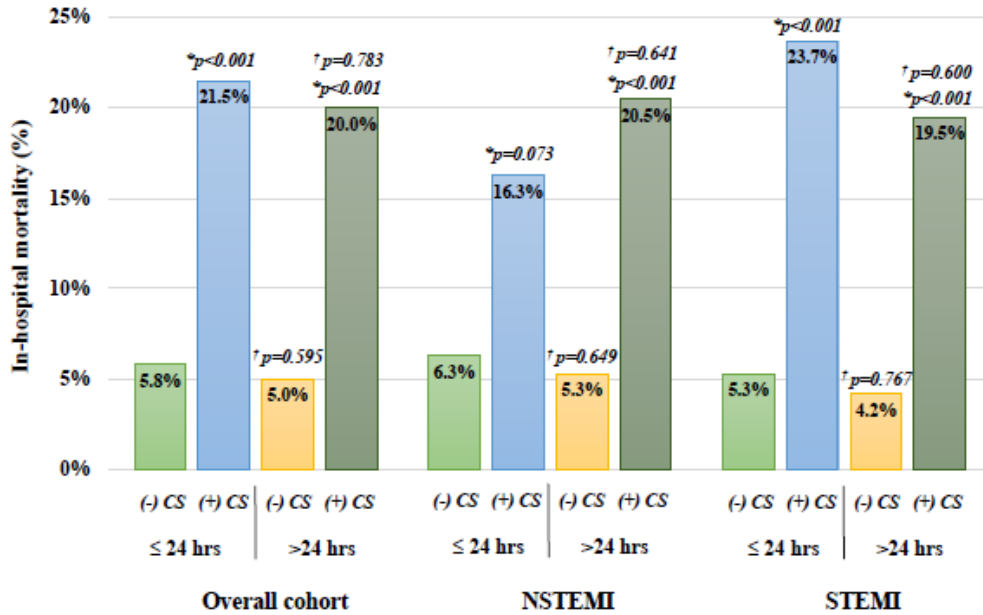**Table S3. Predictors of IHM and MACCE in ACS subgroups.**

| | Overall ACS cohort | | | NSTEMI | | | STEMI | | |
|---|---|---|---|---|---|---|---|---|---|
| **In-hospital Mortality** | **OR** | **95% CI** | *P-value* | **OR** | **95% CI** | *P-value* | **OR** | **95% CI** | *P-value* |
| Age (years) | 1.06 | 1.02 – 1.09 | *0.001* | | | | 1.04 | 1.00 – 1.09 | *0.065* |
| Female sex | 1.79 | 1.03 – 3.10 | *0.038* | | | | | | |
| Smoker | 1.87 | 1.09 – 3.21 | *0.022* | | | | | | |
| Prior MI | | | | 2.00 | 1.03 – 3.86 | *0.040* | | | |
| Cardiogenic shock | 2.88 | 1.63 – 5.09 | *<0.001* | | | | 2.90 | 1.26 – 6.65 | *0.012* |
| Left ventricular EF | 0.95 | 0.93 – 0.97 | *<0.001* | 0.96 | 0.94 – 0.98 | *<0.001* | 0.95 | 0.92 – 0.98 | *<0.001* |
| Logistic EuroSCORE | 1.02 | 1.01 – 1.03 | *0.010* | 1.04 | 1.02 – 1.05 | *<0.001* | 1.03 | 1.01 – 1.05 | *0.009* |
| CPB time (mins) | 1.03 | 1.02 – 1.04 | *<0.001* | 1.03 | 1.02 – 1.04 | *<0.001* | 1.03 | 1.02 – 1.04 | *<0.001* |
| Aortic clamp time (mins) | 0.97 | 0.96 - 0.98 | *<0.001* | 0.98 | 0.97 – 0.99 | *0.005* | 0.97 | 0.95 – 0.98 | *<0.001* |
| No. of Grafts | 0.66 | 0.54 – 0.82 | *<0.001* | 0.50 | 0.37 – 0.68 | *<0.001* | | | |
| **MACCE** | | | | | | | | | |
| Female sex | 1.66 | 1.10 – 2.51 | *0.015* | | | | 1.95 | 1.04 – 3.66 | *0.037* |
| Hypertension | 2.03 | 1.27 - 3.25 | *0.003* | | | | | | |
| Prior stroke | 1.94 | 1.14 – 3.31 | *0.015* | 1.95 | 1.04 – 3.68 | *0.039* | | | |
| CKD-EPI stage 3-4 | 1.64 | 1.12 – 2.40 | *0.011* | | | | 2.47 | 1.42 – 4.30 | *0.001* |
| Cardiogenic shock | 2.32 | 1.57 – 3.43 | *<0.001* | | | | 3.88 | 2.25 – 6.68 | *<0.001* |
| Dual antiplatelet therapy | | | | 1.73 | 1.11 – 2.71 | *0.016* | | | |

| | OR | 95% CI | p | OR | 95% CI | p | OR | 95% CI | p |
|---|---|---|---|---|---|---|---|---|---|
| Left ventricular EF | 0.95 | 0.94 – 0.97 | *<0.001* | 0.96 | 0.94 – 0.97 | *<0.001* | 0.94 | 0.93 – 0.96 | *<0.001* |
| Troponin >2x ULN | 2.38 | 1.26 – 4.48 | *0.008* | | | | 3.66 | 1.32 – 10.16 | *0.008* |
| Logistic EuroSCORE | 1.02 | 1.01 – 1.03 | *<0.001* | 1.03 | 1.01 – 1.04 | *<0.001* | | | |
| Emergent CABG < 24 hrs | 1.98 | 1.43 – 2.74 | *<0.001* | 1.83 | 1.15 – 2.91 | *0.011* | 1.97 | 1.20 – 3.21 | *0.007* |
| CPB time (mins) | 1.03 | 1.02 – 1.04 | *<0.001* | 1.03 | 1.02 – 1.03 | *<0.001* | 1.03 | 1.02 – 1.04 | *<0.001* |
| Aortic clamp time (mins) | 0.98 | 0.97 - 0.99 | *<0.001* | 0.98 | 0.97 - 1.00 | *0.031* | 0.97 | 0.95 - 0.98 | *<0.001* |
| No. of Grafts | 0.79 | 0.66 – 0.94 | *0.009* | 0.74 | 0.57 – 0.95 | *0.018* | | | |
| Warm vs. cold blood CP | 1.72 | 1.20 – 2.50 | *0.003* | | | | 2.02 | 1.21 – 3.40 | *0.008* |

CI, confidence interval; CKD-EPI, chronic kidney disease epidemiology collaboration; CP, cardioplegia; CPB, cardiopulmonary bypass;
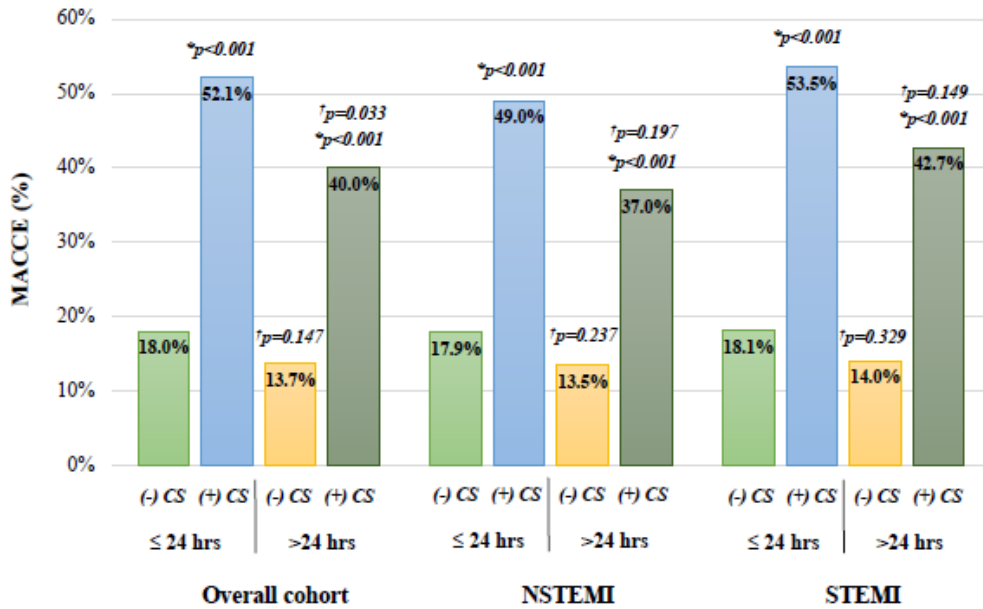
EF, ejection fraction; MI, myocardial infarction; OR, odds ratio; ULN, upper limit of normal.

**Figure S1. In-hospital mortality stratified by the timing of surgery from onset of symptoms.**



Asterisk (*) indicates p-values compared to the corresponding ACS group without CS; Cross (†) indicates p-values compared to the corresponding group of patients undergoing emergency CABG within 24 hrs from onset of symptoms. (+) or (-) CS, with or without cardiogenic shock; NSTEMI, non-ST-segment elevation myocardial infarction; STEMI, ST-segment elevation myocardial infarction.

**Figure S2. Major adverse cardio-cerebral events (MACCE) stratified by the timing of surgery from onset of symptoms.**



Asterisk (*) indicates p-values compared to the corresponding ACS group without CS; Cross (†) indicates p-values compared to the corresponding group of patients undergoing emergency CABG within 24 hrs from onset of symptoms. (+) or (-) CS, with or without cardiogenic shock; NSTEMI, non-ST-segment elevation myocardial infarction; STEMI, ST-segment elevation myocardial infarction.