**Supplementary material**

**Table S1** Demographic characteristics of MABG vs SABG groups before PSM

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Characteristic | Overall(n=1641) | MABG(n=247) | SABG(n=1394) | P-value | SMD |
| Age (years) | 64.6 ± 8.9 | 63.3 ± 9.5 | 64.8 ± 8.8 | 0.012 | 0.17 |
| BMI (kg/m2) | 25.6 ± 3.2 | 25.7 ± 2.8 | 25.6 ± 3.2 | 0.364 | 0.06 |
| eGFR (ml/min/1.73m2) | 90.3 ± 27.0 | 93.4 ± 24.5 | 89.7 ± 27.4 | 0.024 | 0.15 |
| LVEF (%) | 46.0 (41.0, 49.0) | 46.0 (42.0, 50.0) | 47.0 (41.0, 49.0) | 0.341 | 0.13 |
| LVEF |  |  |  | 0.137 | 0.11 |
| 30%-40% | 351 (21.4) | 44 (17.8) | 307 (22.0) |  |  |
| 41%-52% | 1290 (78.6) | 203 (82.2) | 1087 (78.0) |  |  |
| LVEDV (mm) | 53.5 ± 6.8 | 53.4 ± 6.6 | 53.5 ± 6.9 | 0.717 | 0.02 |
| Male | 1287 (78.4) | 202 (81.8) | 1085 (77.8) | 0.164 | 0.09 |
| Smoker | 492 (30.0) | 77 (31.2) | 415 (29.8) | 0.657 | 0.03 |
| DM |  |  |  | 0.015 | 0.21 |
| No history | 978 (59.6) | 167 (67.6) | 811 (58.2) |  |  |
|  NIDDM | 452 (27.5) | 58 (23.5) | 394 (28.3) |  |  |
|  IDDM | 211 (12.9) | 22 (8.9) | 189 (13.6) |  |  |
| Hypertension | 1035 (63.1) | 140 (56.7) | 895 (64.2) | 0.024 | 0.15 |
| Carotid stenosis >50% |  |  |  | 0.586 | 0.07 |
|  None | 1350 (82.3) | 203 (82.2) | 1147 (82.3) |  |  |
|  Unilateral | 112 (6.8) | 20 (8.1) | 92 (6.6) |  |  |
|  Bilateral | 179 (10.9) | 24 (9.7) | 155 (11.1) |  |  |
| COPD | 55 (3.4) | 10 (4.0) | 45 (3.2) | 0.509 | 0.04 |
| PVD | 115 (7.0) | 19 (7.7) | 96 (6.9) | 0.648 | 0.03 |
| CVA | 120 (7.3) | 14 (5.7) | 106 (7.6) | 0.281 | 0.08 |
| Dialysis | 9 (0.5) | 1 (0.4) | 8 (0.6) | 0.74 | 0.02 |
| Prior MI | 614 (37.4) | 76 (30.8) | 538 (38.6) | 0.019 | 0.17 |
| NYHA ≥3 | 1067 (65.0) | 153 (61.9) | 914 (65.6) | 0.271 | 0.08 |
| Previous PCI | 200 (12.2) | 26 (10.5) | 174 (12.5) | 0.387 | 0.06 |
| Mitral regurgitation |  |  |  | 0.82 | 0.07 |
| None | 1222 (74.5) | 186 (75.3) | 1036 (74.3) |  |  |
|  Mild | 343 (20.9) | 52 (21.1) | 291 (20.9) |  |  |
|  Moderate | 71 (4.3) | 8 (3.2) | 63 (4.5) |  |  |
| Severe | 5 (0.3) | 1 (0.4) | 4 (0.3) |  |  |
| No. vessel disease |  |  |  | 0.667 | 0.03 |
| 2 | 179 (10.9) | 25 (10.1) | 154 (11.0) |  |  |
| 3 | 1462 (89.1) | 222 (89.9) | 1240 (89.0) |  |  |
| Left main disease | 500 (30.5) | 62 (25.1) | 421 (30.2) | 0.105 | 0.11 |
| Off-pump CABG | 672 (41.0) | 91 (36.8) | 581 (41.7) | 0.154 | 0.09 |

The variables are presented as mean ± standard deviation or median (interquartile range) or number (%). MABG, multiple arterial bypass graft; SABG, single arterial bypass graft; PSM, propensity score matching; SMD, standardized mean differences; BMI, body mass index; eGFR, estimated glomerular filtration (calculated by modification of diet in renal disease [MDRD]); LVEF, left ventricular ejection fraction; LVEDV, left ventricular end-diastolic volume; DM, diabetes mellitus; NIDDM, non-insulin-dependent diabetes mellitus; IDDM, insulin-dependent diabetes mellitus; COPD, chronic obstructive pulmonary disease; PVD, peripheral vascular disease; CVA, cerebrovascular accident; MI, myocardial infarction; NYHA, New York Heart Association; PCI, percutaneous coronary intervention; CABG, coronary artery bypass grafting.

**Table S2** Operative and Postoperative In-hospital Outcomes of the Before-PSM MABG versus SABG Cohorts.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcome | Overall(n=1641) | MABG(n=247) | SABG(n=1394) | P-value |
| No. of grafts | 3.4 ± 0.8 | 3.5 ± 0.9 | 3.4 ± 0.8 | 0.112 |
| RA | 193 (11.8) | 193 (78.1) | - | NA |
| RITA | 118 (7.2) | 118 (47.8) | - | NA |
| In-hospital death | 31 (1.9) | 4 (1.6) | 27 (1.9) | 0.736 |
| PMV | 346 (21.1) | 47 (19.0) | 299 (21.4) | 0.39 |
| PICUS | 652 (39.7) | 87 (35.2) | 565 (40.5) | 0.116 |
| IABP | 90 (5.5) | 11 (4.5) | 79 (5.7) | 0.44 |
| Stroke | 8 (0.5) | 2 (0.8) | 6 (0.4) | 0.43 |
| Acute MI | 10 (0.6) | 2 (0.8) | 8 (0.6) | 0.661 |
| Dialysis | 23 (1.4) | 3 (1.2) | 20 (1.4) | 0.786 |
| RBC transfusion | 710 (43.3) | 91 (36.8) | 619 (44.4) | 0.027 |
| Sternal wound infection | 17 (1.0) | 4 (1.6) | 13 (0.9) | 0.326 |
| Reoperation for bleeding | 21 (1.3) | 2 (0.8) | 19 (1.4) | 0.476 |
| LVEF (%) | 47.5 (43.0, 50.0) | 47.0 (44.0, 51.0) | 48.0 (42.0, 50.0) | 0.581 |
| Length of stay (days) | 20.0 (16.0, 24.0) | 20.0 (16.0, 23.0) | 20.0 (16.0, 25.0) | 0.64 |

The variables are presented as mean ± standard deviation or median (interquartile range) or number (%). MABG, multiple arterial bypass graft; SABG, single arterial bypass graft; PSM, propensity score matching; RA, radial artery; RITA, right internal thoracic artery; PMV, prolonged mechanical ventilation; PICUS, prolonged intensive care unit stay; IABP, intra-aortic balloon pump; MI, myocardial infarction; RBC, red blood cell; NA, not applicable.

**Table S3** Sensitive Analysis

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcome | MABG(n=203) | SABG(n=566) | HR (95% CI) | P-value |
| Death from all causes | 11.2 (5.0-17.0) | 15.7 (13.3-23.3) | 0.79 (0.46-1.36) | 0.39 |
| Death from cardiovascular causes | 9.3 (5.0-15.1) | 15.5 (11.1-20.6) | 0.69 (0.39-1.21) | 0.19 |
| MAEs† | 17.5 (10.1-24.3) | 28.0 (22.5-33.1) | 0.64 (0.42-0.98) | 0.04 |
| Stroke | 4.9 (2.0-9.9) | 5.8 (3.5-9.1) | 0.89 (0.38-2.09) | 0.79 |
| MI | 2.9 (0.9-7.5) | 8.0 (5.1-11.8) | 0.41 (0.14-1.16) | 0.08 |
| Repeat revascularization | 3.5 (1.2-7.6) | 9.6 (6.6-13.4) | 0.39 (0.15-0.99) | 0.05 |
| Sternal wound infection‡ | 2.5 (0.3-4.7) | 1.4 (0.4-2.4) | 0.50 (0.19-1.75) | 0.33 |

†MAEs: major adverse events, defined as the composite of death from all causes, stroke, MI or repeat revascularization; ‡The event related to the period from surgical procedure to 6-month of follow-up; MABG, multiple arterial bypass graft; SABG, single arterial bypass graft; MI, myocardial infarction; HR, hazard ratio; CI, confidence interval.