**Table 1:** Baseline participant characteristics variables by access site for CTO-PCI

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| --- | --- | --- | --- |
| **Variable** | **Femoral** **(n=3732)** | **Radial****(n=2748)** | **p-value** |
| Age (years) ±SD | 64.0±10.8 | 63.8±10.8 | 0.329 |
| Female gender, no. (%) | 710 (19.0) | 474 (17.3) | 0.074 |
| Smoking status, no. (%)Never smokedEx-smokerCurrent smoker | 1,129 (33.0)1,799(52.5)498 (14.5) | 911 (36.6)1,238 (49.7)343(13.7) | 0.0040.0330.407 |
| BMI (kg/m2) ±SD | 29.6±6.1 | 29.6±6.6 | 0.462 |
| Hypertension, no. (%) | 2,444 (69.2) | 1,745 (66.3) | 0.014 |
| Diabetes, no. (%) | 956 (27.0) | 614 (23.4) | 0.001 |
| Previous MI, no. (%) | 1,535 (43.4) | 1,057 (40.2) | 0.013 |
| Q wave on ECG, no. (%) | 326 (9.7) | 260 (10.5) | 0.333 |
| Previous stroke, no. (%) | 131 (3.7) | 108 (4.1) | 0.463 |
| Peripheral vascular disease, no. (%) | 248 (7.0) | 177 (6.7) | 0.648 |
| Valvular heart disease, no. (%) | 61 (1.7) | 49 (1.9) | 0.699 |
| Renal disease, no. (%) | 95 (2.7) | 61 (2.3) | 0.368 |
| Creatinine (µmol/L) ±SD | 93.5±43.1 | 92.8±44.4 | 0.322 |
| Previous PCI, no. (%) | 1,589 (43.5) | 952 (35.1) | <0.001 |
| Previous CABG, no. (%) | 660 (18.0) | 282 (10.4) | <0.001 |
| Ejection fraction (%)±SD | 52.4±13.3 | 52.2±11.5 | 0.462 |
| CCS class ≥3, no. (%) | 1659 (46.9) | 1140 (44.0) | 0.029 |
| NYHA class ≥3, no. (%) | 844 (24.5) | 543 (21.6) | 0.010 |
| Antiplatelet therapy, no. (%)ClopidogrelPrasugrel Ticagrelor | 3,002 (83.3)54 (1.5)47 (1.3) | 2,242 (85.6)49 (1.9)40 (1.5) | 0.0120.2690.522 |
| Warfarin, no. (%) | 50 (1.4) | 42 (1.6) | 0.524 |

**Table 2:** Procedural variables by femoral vs. radial access site for CTO-PCI

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Femoral** **(n=3732)** | **Radial****(n=2748)** | **p-value** |
| Off-site surgical cover | 1,367 (38.5) | 1,099 (42.5) | 0.002 |
| Single arterial access, no. (%) | 2,168 (58.1) | 2,636 (95.9) | <0.001 |
| Dual arterial access, no. (%) Dual radial, no. (%) Dual femoral, no. (%) Radial/femoral | 1,564 (41.9)-713 (19.1)851 (22.8) | 112 (4.1)112 (4.1)-- | <0.001 |
| No. CTO attempted ±SD | 1.05±0.26 | 1.06±0.29 | 0.061 |
| Vessel attempted, no. (%)GraftLeft mainLeft anterior descendingCircumflexRight coronary | 86 (2.3)157 (4.3)1,251 (33.9)693 (18.8)2,079 (56.4) | 72 (2.6)72 (2.6)1,082 (39.6)752 (27.5)1,316 (48.2) | 0.549<0.001<0.001<0.001<0.001 |
| Trainee first operator, no. (%) | 415 (11.7) | 514 (19.6) | <0.001 |
| Intra-vascular ultrasound use, no. (%) | 384 (11.5) | 180 (7.4) | <0.001 |
| Rotational atherectomy, no. (%) | 141 (3.9) | 64 (2.4) | 0.002 |
| Penetration catheter, no. (%) | 109 (3.0) | 50 (1.9) | 0.007 |
| Micro-catheter, no. (%) | 790 (21.8) | 360 (13.8) | <0.001 |
| CrossBoss/Stingray, no. (%) | 140 (3.9) | 15 (0.6) | <0.001 |
| Glycoprotein inhibitor, no. (%) | 144 (4.1) | 152 (6.0) | 0.001 |
| No. DES used ±SD | 1.72±1.51 | 1.64±1.43 | 0.023 |
| Procedural success, no. (%)  | 2,770 (75.0) | 2,146 (79.1) | 0.002 |
| No. successful lesions ±SD | 1.09±0.92 | 1.22±0.99 | <0.001 |
| Final TIMI flow, no. (%)0123 | 269 (19.0)46 (3.3)49 (3.5)1,042 (74.1) | 136 (14.9)50 (5.5)39 (4.3)682 (75.2) | 0.0120.0100.3190.591 |

**Table 3:** Significant associations between covariates and femoral access for CTO-PCI

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Odds ratio** |  **[95% CI]** | **p-value** |
| Dual arterial access | 3.89  | [3.45-4.32] | <0.001 |
| CrossBoss/Stingray use | 1.87 | [1.43-2.12] | <0.001 |
| Intra-vascular ultrasound use | 1.32 | [1.21-1.53] | <0.001 |
| Female gender | 1.21 | [1.10-1.32] | 0.007 |
| Micro-catheter use | 1.18  | [1.03-1.39] | <0.001 |
| Previous CABG history | 1.12 | [1.04-1.29] | <0.001 |
| Previous PCI | 1.08 | [1.02-1.14] | 0.023 |
| Circumflex CTO  | 0.94 | [0.89-1.00] | 0.050 |

**Table 4:** Outcomes by access site after CTO-PCI

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Femoral** **(n=3732)** | **Radial****(n=2748)** | **p-value** |
| **Immediate procedural outcomes** |
| Tamponade, no. (%) | 15 (0.4) | 5 (0.2) | 0.172 |
| Emergency surgery, no. (%) | 7 (0.2) | 4 (0.2) | 1.000 |
| Coronary dissection, no. (%) | 138 (3.9) | 88 (3.4) | 0.373 |
| Major side-branch loss, no. (%) | 27 (0.8) | 17 (0.7) | 0.760 |
| Slow flow, no. (%) | 11 (0.3) | 10 (0.4) | 0.660 |
| Access site complication, no. (%) | 56 (1.5) | 14 (0.5) | <0.001 |
| **Clinical outcomes** |
| Transfusion, no. (%) | 15 (0.4) | 0 (0) | <0.001 |
| Peri-procedural MI, no. (%) | 19 (0.5) | 5 (0.2) | 0.037 |
| In-hospital major bleed, no. (%) | 29 (0.8) | 5 (0.2) | <0.001 |
| In-hospital death, no. (%) | 8 (0.2) | 2 (0.1) | 0.027 |
| Mortality at 30 days, no. (%) | 22 (0.6) | 3 (0.1) | 0.002 |
| Mortality at 1 year, no. (%) | 85 (3.0) | 55 (2.6) | 0.388 |

**Table 5:** Outcomes by access site complication after CTO-PCI

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable**  | **Access site complication (n=255)**  | **No access site complication (n=25,574)** | **p-value** |
| Transfusion, no. (%) | 20 (8.0) | 28 (0.1) | <0.001 |
| Peri-procedural MI, no. (%) | 4 (1.6) | 125 (0.5) | 0.051 |
| Procedural complication no. (%) | 42 (17.3) | 1372 (5.8) | <0.001 |
| In-hospital major bleed, no. (%) | 21 (8.4) | 78 (0.3) | <0.001 |
| In-hospital stroke, no. (%) | 1 (0.4) | 6 (0.02) | 0.103 |
| In-hospital death, no. (%) | 5 (2.0) | 29 (0.1) | <0.001 |
| Mortality at 7-days, no. (%) | 4 (1.6) | 65 (0.3) | <0.001 |
| Mortality at 30 days, no. (%) | 6 (2.4) | 103 (0.4) | <0.001 |
| Mortality at 1 year, no. (%) | 11 (4.7) | 543 (2.3) | 0.001 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Variable** | **Multiple logistic regression adjusted odds** |  **[95% CI]** | **p-value** |
| Transfusion | 76.5  | [42.5-137.7] | <0.0001 |
| In-hospital major bleed | 28.9 | [17.5-47.6] | <0.0001 |
| 30-day death | 17.3 | [6.7-45.1] | <0.0001 |
| Post-procedural CVA | 16.5 | [2.0-137.5] | <0.0001 |
| Procedural complication | 3.4  | [2.4-4.8] | <0.0001 |
| Peri-procedural MI | 3.2 | [1.2-8.7] | 0.002 |

 **Table 6:** Adjusted odds of adverse outcomes after access site complication during CTO-PCI