**Supplemental Table 1**. Annual rates of applied rotational atherectomy systems and burr sizes from 2015 to 2019

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year | 2015 | 2016 | 2017 | 2018 | 2019 |
| Total percentage (%) of Rotablation  | 1,60% | 1,97% | 3,27% | 4.71% | 6,92% |
| Numbers of Rota | 56 | 66 | 105 | 113 | 11 |
| Numbers of Rotapro | 0 | 0 | 0 | 30 | 216 |
| **Burr Size** |  |
| * 1.25mm
 | 30,3% | 30,3% | 31,4% | 25,0% | 8,3% |
| * 1.50mm
 | 46,4% | 24,2% | 32,6% | 45,8% | 49,7% |
| * 1.75mm
 | 10,7% | 27,2% | 29,2% | 25,0% | 34,7% |
| * 2.00mm
 | 12,5% | 18,2% | 6,7% | 4,2% | 6,2% |

|  |  |  |  |
| --- | --- | --- | --- |
| **Rotapro (n=246)** | **Fluoroscopy time <30min** | **Fluoroscopy time >30min** | **P value** |
| Age (years) | 74.6 ± 8.6 | 71.5 ± 8.9 | **0.0059**\* |
| ACS | (19) 7.7%  | (12) 4.9%  | 0.28 |
| LVEF <40% | (18) 7.3%  | (24) 9.8%  | 0.49 |
| History of CABG | (24) 9.8%  | (37) 14.9%  | 0.10 |
| CTO vessel | (18) 7.3%  | (78) 31.7%  | **0.0001\*** |
| Burr size used  |  |  | **0.0085\*** |
| * 1,25mm
 | (6) 2.4%  | (2) 8.1%  |  |
| * 1,50mm
 | (58) 23.6%  | (60) 24.4%  |  |
| * 1,75mm
 | (55) 22.4%  | (31) 12.6%  |  |
| * 2,00mm
 | (7) 2.8%  | (10) 4.1%  |  |
| Access site  |  |  | **0.0001\*** |
| * Single radial access
 | (66) 26.8%  | (34) 13.8%  |  |
| * Any femoral access
 | (58) 23.6%  | (88) 35.8%  |  |
|  |
| Values are given as percentages of patients and numbers or as median and interquartile range ACS= acute coronary syndrome, CABG = coronary artery bypass grafting, CTO = chronic total occlusion, LVEF = left ventricular ejection fraction.The cutoff of 30 min. accords to the median fluoroscopy time in the Rotapro group. |

**Supplemental Table 2.** Characteristics in the Rotapro group according to fluoroscopy time.

**Supplemental Table 3.** Characteristics in the ROTA group according to fluoroscopy time.

|  |  |  |  |
| --- | --- | --- | --- |
| **Rota (n=351)** | **Fluoroscopy time <38min** | **Fluoroscopy time >38min** | **P value** |
| Age (years) | 73.8 ± 9.8 | 71.7 ± 8.5 | **0.0327\*** |
| ACS | (30) 8.5%  | (14) 4.0%  | 0.88 |
| LVEF <40% | (35) 10.0%  | (25) 7.1%  | 0.34 |
| History of CABG | (39) 11.1%  | (81) 23.1%  | **0.001\*** |
| CTO vessel | (31) 8.9%  | (93) 26.5%  | **0.001\*** |
| Burr Size used  |  |  | **0.001\*** |
| * 1,25mm
 | (32) 9.1%  | (74) 21.1%  |  |
| * 1,50mm
 | (87) 24.7%  | (59) 16.8%  |  |
| * 1,75mm
 | (54) 15.4%  | (32) 9.1%  |  |
| * 2,00mm
 | (8) 2.3%  | ([17](#_ENREF_17)) 0.3%  |  |
| Access site  |  |  | **0.0093\*** |
| * Single Radial access
 | (62) 17.7%  | (39) 11.1%  |  |
| * Any Femoral access
 | (115) 32.7%  | (134) 38.2%  |  |
|  |
| Values are given as percentages of patients and numbers or as median and interquartile range ACS= acute coronary syndrome, CABG = coronary artery bypass grafting, CTO = chronic total occlusion, LVEF = left ventricular ejection fraction.The cutoff of 38 min. accords to the median fluoroscopy time in the ROTA group. |

**Supplemental Table 4A.** Multivariable logistic regression analysis in the Rotapro group to predict increased fluoroscopy time.

|  |  |  |
| --- | --- | --- |
| **Rotapro (n=246)****Fluoroscopy time >30min** | **Univariable** | **Multivariable** |
| **OR** | **CI 95%** | **P value** | **OR** | **CI 95%** | **P value** |
| Age (change per year) | 0.96 | 0.93 – 0.99 | **0.0057\*** | 0.99 | 0.95 – 1.03 | 0.66 |
| History of CABG | 1.70 | 0.91 – 3.24 | 0.10 | 1.06 | 0.44 – 2.47 | 0.90 |
| CTO vessel | 10.8 | 5.84 – 21.0 | **0.0001\*** | 10.5 | 4.88 – 23.9 | **0.0001**\* |
| Burr Size used  |  |  | **0.0072**\* |  |  | 0.16 |
| * 1,25mm vs. 1,5mm
 | 3.07 | 1.10 – 9.99 | **0.031\*** | 2.46 | 0.64 – 11.0 | 0.19 |
| * 1,25mm vs. 1,75mm
 | 5.76 | 2.00 – 19.3  | **0.0009\*** | 4.37 | 1.12 – 20.0 |  **0.03\*** |
| * 1,25mm vs. 2.00mm
 | 2.40 | 0.56 – 10.8 | 0.24 | 2.33 | 0.38 – 15.7 | 0.36 |
| Access site |  |  |  |  |  |  |
| * Any femoral vs. single radial access
 | 3.00 | 1.76 – 5.23 | **0.0001**\* | 2.73 | 1.24 – 6.14 | **0.0118\*** |
| CABG = coronary artery bypass grafting, CTO = chronic total occlusion, LVEF = left ventricular ejection fraction, CI = confidence interval. |

**Supplemental** Table 4B. Multivariable logistic regression analysis in the Rota group to predict increased fluoroscopy time.

|  |  |  |
| --- | --- | --- |
| **Rota (n=351)****Fluoroscopy time >38min** | **Univariable** | **Multivariable** |
| **OR** | **CI 95%** | **P value** | **OR** | **CI 95%** | **P value** |
| Age (change per year) | 0.95 | 0.92 – 0.98 | **0.0009\*** | 0.97 | 0.94 – 1.02 | 0.25 |
| History of CABG | 2.20 | 1.15 – 4.17 | **0.0154\*** | 1.42 | 0.63 – 3.18 | 0.38 |
| CTO vessel | 6.34 | 3.57 – 11.5 | **0.0001\*** | 5.22 | 2.52 – 11.11 | **0.0001\*** |
| Burr Size used  |  |  | **0.0027\*** |  |  | 0.10 |
| * 1,25mm vs. 1,5mm
 | 4.93 | 1.88 – 14.1 | **0.0011\*** | 4.07 | 1.26 – 14.5 | **0.0183\*** |
| * 1,25mm vs. 1,75mm
 | 6.20 | 2.27 – 18.5 | **0.0003\*** | 4.19 | 1.25 – 15.37 | **0.0201\*** |
| * 1,25mm vs. 2.00mm
 | 2.86 | 0.73 – 12.1 | 0.13 | 2.76 | 0.54 – 15.2 | 0.22 |
| Access site  |  |  |  |  |  |  |
| * Any femoral vs. single radial access
 | 3.02 | 1.70 – 5.56 | **0.001\*** | 2.68 | 1.21 – 6.22 | **0.0151\*** |
| CABG = coronary artery bypass grafting, CTO = chronic total occlusion, LVEF = left ventricular ejection fraction, CI = confidence interval. |