Clinical Outcomes of Rotational Atherectomy in Octogenarians: Insights from a ROCK Registry

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Background: Advanced age is a known high-risk factor in PCI. However, long term outcomes of rotational atherectomy (RA) in octogenarians remain unclear. We compared outcomes after RA in patients aged >80 vs. <80 years. Method : We analyzed 583 patients from the multicenter ROCK registry who underwent PCI with RA. Patients were divided by age (<80 vs. >80 years). The primary endpoint was 1 and 3 year MACCE (cardiac death, target-vessel MI, revascularization, and stroke). Outcomes were assessed using Kaplan Meier and Cox regression. Result : At 1 and 3 years, MACCE rates were comparable between groups (1y: 10.8% vs. 13.5%, p=0.418; 3y: 15.0% vs. 13.5%, p=0.942). Octogenarian status was not independently associated with MACCE. However, stroke was more frequent in the elderly (1y: 1.0% vs. 5.4%, p=0.005; HR 20.25, p=0.013). Conclusion : RA in octogenarians showed comparable long-term outcomes to younger patients. Octogenarian status alone should not preclude RA in selected high-risk patients.

	Age<80 (n=472)	Age≥80 (n=111)	p-value	Univariate HR (95% CI)	p-value	Multivariate HR (95% CI)	p-value
Endpoints at 1 year							
MACCE	51(10.8)	15(13.5)	0.418	1.43 (0.80 - 2.54)	0.226	1.61 (0.76 - 3.41)	0.217
TVF	49(10.4)	13(11.7)	0.683	1.29 (0.70 - 2.37)	0.417	1.62 (0.73 - 3.57)	0.234
All cause death	27(5.7)	12(10.8)	0.053	2.11 (1.08 - 4.16)	0.032	0.93 (0.35 - 2.51)	0.893
Cardiac death	19(4.0)	9(8.1)	0.070	2.24 (1.01 - 4.94)	0.047	1.52 (0.49 - 4.74)	0.468
Target-vessel MI	5(1.1)	2(1.8)	0.623	1.97 (0.38 - 10.16)	0.419	4.57 (0.37 - 55.65)	0.234
TVR	29(6.1)	4(3.6)	0.297	0.69 (0.24 - 1.97)	0.494	1.25 (0.36 - 4.37)	0.726
TLR	24(5.1)	3(2.7)	0.283	0.63 (0.19 - 2.10)	0.454	1.28 (0.31 - 5.26)	0.733
CVA	4(0.9)	6(5.4)	0.005	7.16 (2.02 - 25.40)	0.002	20.25 (1.89 - 216.29)	0.013
Stent thrombosis	5(1.1)	1(0.9)	>0.999	0.90 (0.11 - 7.75)	0.928	0.80 (0.06 - 11.54)	0.871
Total bleeding	22(4.7)	7(6.3)	0.473	1.58 (0.67 - 3.69)	0.295	0.30 (0.09 - 1.04)	0.057
Endpoints at 3 year							
MACCE	71(15.0)	17(13.5)	0.942	1.21 (0.71 - 2.05)	0.489	1.30 (0.66 - 2.56)	0.447
TVF	69(14.6)	14(12.6)	0.586	1.03 (0.58 - 1.82)	0.933	1.25 (0.61 - 2.58)	0.543
All cause death	35(7.4)	16(14.4)	0.019	2.30 (1.27 - 4.16)	0.006	1.12 (0.47 - 2.66)	0.795
Cardiac death	25(5.3)	10(9.0)	0.139	1.97 (0.95 - 4.11)	0.071	1.55 (0.55 - 4.37)	0.404
Target-vessel MI	8(1.7)	2(1.8)	>0.999	1.29 (0.27 - 6.09)	0.747	1.57 (0.22 - 11.45)	0.655
TVR	43(9.1)	5(4.5)	0.112	0.61 (0.24 - 1.54)	0.296	0.94 (0.32 - 2.78)	0.916
TLR	37(7.8)	4(3.6)	0.116	0.58 (0.21 - 2.10)	0.293	0.98 (0.30 - 3.20)	0.970
CVA	5(1.1)	6(5.4)	0.008	5.95 (1.81 - 19.53)	0.003	9.80 (1.24 - 77.76)	0.031
Stent thrombosis	6(1.3)	1(0.9)	>0.999	0.78 (0.09 - 6.50)	0.820	0.57 (0.04 - 7.49)	0.665
Total bleeding	27(5.7)	9(8.1)	0.347	1.76 (0.82 - 3.74)	0.145	0.43 (0.14 - 1.28)	0.130

Data are shown as mean ± SD or n (%).

HR, hazard ratio; CI, confidence interval; MACCE, major adverse cardiovascular and cerebrovascular event; TVF, target vessel failure; TVR, target vessel revascularization; TLR, target lesion revascularization; CVA, cerebrovascular accident.