Supplementary methods.

Definition of secondary outcomes

Hospital admissions due to heart failure was defined as hospital admissions requiring at least an overnight stay due to substantial worsening of heart failure symptoms or signs requiring the augmentation of oral drugs or the new administration of intravenous heart failure therapy, including diuretics, inotropes, or vasodilators.[1] Deep vein thrombosis was diagnosed when thrombi in deep veins of the lower extremity were found by imaging studies such as compression ultrasonography or computed tomography.[2] Pulmonary thromboembolism was defined as the appearance of a thrombus in the pulmonary arteries in a ventilation-perfusion lung scan, pulmonary angiography, or computed tomography.[2] Aortic intervention or surgery involved any endovascular procedure or surgery to treat aorta disease. End stage kidney disease was defined as stage 5 according to the National Kidney Foundation Kidney Disease Outcomes Quality Initiative classification of chronic kidney disease or disease requiring dialysis, irrespective of the glomerular filtration rate.[3] The composite of laboratory detected abnormalities considered increase in aminotransferase (>baseline level and >3 times the upper reference limit), creatine kinase (>baseline level and >5 times the upper reference limit), and creatinine levels (>50% increase from baseline level and greater than the upper reference limit).

References

1. Zannad F, Garcia AA, Anker SD, et al. Clinical outcome endpoints in heart failure trials: a European Society of Cardiology Heart Failure Association consensus document. Eur J Heart Fail 2013;15:1082-94.
2. Baglin T, Luddington R, Brown K, Baglin C. Incidence of recurrent venous thromboembolism in relation to clinical and thrombophilic risk factors: prospective cohort study. Lancet 2003;362:523-26.
3. Levin A, Stevens PE. Summary of KDIGO 2012 CKD guideline: behind the scenes, need for guidance, and a framework for moving forward. Kidney Int 2014;85:49-61.

Supplementary table S1. Inclusion and exclusion criteria

Inclusion Criteria

- Age ≥19 years
- Clinical diagnosis of coronary artery disease: stable angina, unstable angina, acute non-ST elevation myocardial infarction, or acute ST elevation myocardial infarction
- Provision of signed informed consent

Exclusion Criteria

- Pregnancy or potential pregnancy during the study period
- Severe adverse events or hypersensitivity to statin
- Receiving a drug that interacts with statin (strong inhibitor of cytochrome p-450 3A4 or 2C9)
- Risk factors for myopathy, hereditary muscle disorder, hypothyroidism, alcohol use disorder, severe hepatic dysfunction (3 times the normal reference values), or rhabdomyolysis
- Life expectancy <3 years
- Patients who could not be followed for more than 1 year
- Patients who could not understand the consent form

Supplementary table S2. Reasons for death and withdrawal of consent

	Rosuvastatin group	Atorvastatin group
Death	57	51
Myocardial infarction	1 (1.8)	2 (3.9)
Heart failure	2 (3.5)	1 (2.0)
Sudden cardiac death	9 (15.8)	9 (17.6)
Pneumonia	15 (26.3)	11 (21.6)
Urinary tract infection	1 (1.8)	3 (5.9)
Malignancy	23 (40.4)	18 (35.3)
Intracranial hemorrhage	3 (5.3)	1 (2.0)
Other (non-cardiovascular)	1 (1.8)	3 (5.9)
Unknown	2 (3.5)	3 (5.9)
Withdrawal of consent	16	14
Voluntary withdrawal by patients	13 (81.3)	12 (85.7)
Withdrawal by physicians' decision	3 (18.7)	2 (14.3)

Supplementary table S3. Lipid-lowering treatment

	0 – 6 weeks		6 weeks – 3 months		3 – 6 months		6 months – 1 year		1 – 2 years		2 – 3 years	
	Rosuva-statin	Atorva-statin	Rosuva-statin	Atorva-statin	Rosuva-statin	Atorva-statin	Rosuva-statin	Atorva-statin	Rosuva-statin	Atorva-statin	Rosuva-statin	Atorva-statin
Total number of patients	**2204**	**2196**	**2190**	**2184**	**2189**	**2177**	**2184**	**2175**	**2167**	**2163**	**2141**	**2134**
Statin therapy												
High intensity statin												
Number of patients	1602 (73)	1596 (73)	1599 (73)	1616 (74)	1587 (73)	1618 (74)	1569 (72)	1611 (74)	1557 (72)	1615 (75)	1517 (71)	1580 (74)
Atorvastatin 80 mg	0	7	1	14	1	14	1	14	7	52	10	55
Atorvastatin 40 mg	104	1507	92	1519	92	1518	90	1511	92	1468	91	1420
Rosuvastatin 20 mg	1498	82	1506	83	1494	86	1478	86	1458	95	1416	105
Moderate intensity statin												
Number of patients	600 (27)	597 (27)	569 (26)	548 (25)	565 (26)	530 (24)	569 (26)	519 (24)	555(26)	488 (23)	562 (26)	488 (23)
Atorvastatin 20 or 10 mg	28	543	43	474	40	459	42	449	52	402	65	376
Rosuvastatin 10 or 5 mg	571	53	520	69	520	67	522	66	489	70	483	104
Simvastatin 40 or 20 mg	0	1	2	1	2	0	3	1	4	2	0	0
Pravastatin 40 mg	0	0	0	1	0	1	0	1	0	0	0	0
Pitavastatin 4, 2 or 1 mg	1	0	4	1	3	1	2	0	8	4	12	8
Fluvastatin XL 80 mg	0	0	0	2	0	2	0	2	2	0	2	0
Low intensity statin												
Number of patients	2 (<1)	3 (<1)	5 (<1)	7 (<1)	6 (<1)	10 (<1)	5 (<1)	13 (<1)	7 (<1)	22 (1)	8 (<1)	21 (1)
Atorvastatin 5 mg	0	2	1	4	2	6	2	9	3	18	3	19
Rosuvastatin 2.5 mg	1	1	1	1	1	1	1	1	3	1	3	1
Simvastatin 10 mg	1	0	2	1	2	2	1	2	0	2	0	0
Pravastatin 20 or 10 mg			1	1	1	1	1	1	1	1	2	1
Discontinuation of statin												
Number of patients	0	0	17 (<1)	13 (<1)	31 (1)	19 (<1)	41 (2)	32 (2)	48 (2)	38 (2)	54 (3)	45 (2)
Ezetimibe												
Number of patients	18 (<1)	13 (<1)	97 (4)	137 (6)	110 (5)	148 (7)	150 (7)	215 (10)	200 (9)	294 (14)	252 (12)	402 (19)
With high-intensity statin	13	11	87	128	94	135	132	194	169	258	200	349
With moderate-intensity statin	4	2	8	8	13	11	16	17	30	33	51	51
With low-intensity statin	1	0	2	1	2	2	1	2	0	2	0	0
Ezetimibe only without statin	0	0	0	0	1	0	1	2	1	1	1	2
Fibrate												
Number of patients	18 (<1)	21 (1)	18 (<1)	21 (1)	17 (<1)	18 (<1)	16 (<1)	20 (<1)	19 (<1)	23 (1)	21 (1)	18 (<1)

Supplementary table S4. Use of high intensity statin

	Rosuvastatin group	Atorvastatin group	Absolute difference (95% CI)	P-value
0 – 6 weeks	1602 / 2204 (72.7)	1596 / 2196 (72.7)	0.0 (-2.6 to 2.6)	1.00
6 week – 3 months	1599 / 2190 (73.0)	1616 / 2184 (74.0)	-1.0 (-3.6 to 1.6)	0.48
3 months – 6 months	1587 / 2189 (72.5)	1618 / 2177 (74.3)	-1.8 (-4.4 to 0.8)	0.18
6 months – 1 year	1569 / 2184 (71.8)	1611 / 2175 (74.1)	-2.2 (-4.9 to 0.4)	0.11
1 year – 2 years	1557 / 2167 (71.9)	1615 / 2163 (74.7)	-2.8 (-5.4 to -0.2)	0.04
2 years – 3 years	1517 / 2141 (70.9)	1580 / 2134 (74.0)	-3.2 (-5.9 to -0.5)	0.02

Data are number of patients / total number of patients (%). CI=confidence interval.

Supplementary table S5. Use of ezetimibe

	Rosuvastatin group	Atorvastatin group	Absolute difference (95% CI)	P-value
0 – 6 weeks	18 / 2204 (0.8)	13 / 2196 (0.6)	0.2 (-0.3 to 0.7)	0.48
6 week – 3 months	97 / 2190 (4.4)	137 / 2184 (6.3)	-1.8 (-3.2 to -0.5)	0.008
3 months – 6 months	110 / 2189 (5.0)	148 / 2177 (6.8)	-1.8 (-3.2 to -0.4)	0.02
6 months – 1 year	150 / 2184 (6.9)	215 / 2175 (9.9)	-3.0 (-4.7 to -1.4)	<0.001
1 year – 2 years	200 / 2167 (9.2)	295 / 2163 (13.6)	-4.4 (-6.3 to -2.5)	<0.001
2 years – 3 years	252 / 2141 (11.8)	402 / 2134 (18.8)	-7.1 (-9.2 to -4.9)	<0.001

Data are number of patients / total number of patients (%). CI=confidence interval.

Supplementary table S6. Cardiovascular medications

	0 – 6 weeks		6 weeks – 3 months		3 – 6 months		6 months – 1 year		1 – 2 years		2 – 3 years	
	Rosuva-statin	**Atorva-statin**	**Rosuva-statin**	**Atorva-statin**	**Rosuva-statin**	**Atorva-statin**	**Rosuva-statin**	**Atorva-statin**	**Rosuva-statin**	**Atorva-statin**	**Rosuva-statin**	**Atorva-statin**
Total number of patients	**2204**	**2196**	**2190**	**2184**	**2189**	**2177**	**2184**	**2175**	**2167**	**2163**	**2141**	**2134**
Aspirin	1616 (73)	1601 (73)	1565 (72)	1565 (72)	1539 (70)	1549 (71)	1504 (69)	1512 (70)	1343 (62)	1373 (64)	1237 (58)	1252 (59)
Clopidogrel	1060 (48)	1018 (46)	1039 (47)	1024 (47)	1041 (48)	1016 (47)	1029 (47)	993 (46)	1024 (47)	1077 (50)	1016 (48)	1071 (50)
Prasugrel or Ticagrelor	144 (7)	177 (8)	133 (6)	163 (7)	126 (6)	153 (7)	107 (5)	144 (7)	53 (2)	49 (2)	16 (<1)	17 (<1)
Beta-blocker	1196 (54)	1240 (57)	1190 (54)	1249 (57)	1195 (55)	1244 (57)	1191 (55)	1234 (57)	1157 (53)	1205 (56)	1129 (53)	1179 (55)
ACE inhibitor	318 (14)	265 (12)	291 (13)	250 (11)	276 (13)	246 (11)	262 (12)	239 (11)	229 (11)	223 (10)	216 (10)	220 (9)
ARB	958 (44)	905 (41)	968 (44)	931 (43)	987 (45)	935 (43)	990 (45)	930 (43)	998 (46)	943 (44)	1001 (47)	977 (46)
Calcium channel blocker	951 (43)	933 (43)	948 (43)	936 (43)	952 (44)	934 (43)	964 (44)	939 (43)	973 (45)	936 (43)	959 (45)	949 (45)
Loop diuretics	119 (5)	138 (6)	113 (5)	132 (6)	114 (5)	130 (6)	108 (5)	124 (6)	102 (5)	120 (6)	103 (5)	115 (5)
Spironolactone	51 (2)	67 (3)	49 (2)	61 (3)	48 (2)	60 (3)	43 (2)	58 (3)	43 (2)	50 (2)	42 (2)	55 (3)

ACE=angiotensin-converting enzyme; ARB=Angiotensin II receptor blocker.

Supplementary table S7. Primary and secondary outcomes in the per-protocol population.* Values are number (percentage) unless stated otherwise

Outcome	Rosuvastatin group (n=1996)	Atorvastatin group (n=1965)	Absolute difference (95% CI)	Hazard ratio (95% CI)	P-value†
Primary outcome					
Death, myocardial infarction, stroke, or any coronary revascularization	159 (8.0)	141 (7.2)	0.8 (-0.9 to 2.5)	1.11 (0.89 to1.40)	0.35
Components of primary outcome					
Death:	47 (2.4)	46 (2.4)	0.0 (-0.9 to 1.0)	1.01 (0.67 to 1.51)	0.98
Cardiac death (No)	10	15			
Myocardial infarction	31 (1.5)	21 (1.1)	0.5 (-0.3 to 1.2)	1.41 (0.81 to 2.50)	0.23
Stroke:	17 (0.9)	18 (0.9)	-0.1 (-0.7 to 0.5)	0.93 (0.48 to 1.80)	0.83
Ischemic (No)	11	14			
Hemorrhagic (No)	6	4			
Coronary revascularization‡	97 (5.0)	82 (4.3)	0.7 (-0.6 to 2.0)	1.17 (0.87 to 1.57)	0.30
Secondary outcomes					
New-onset diabetes mellitus	139 (7.1)	107 (5.6)	1.6 (0.0 to 3.1)	1.29 (1.00 to 1.66)	0.05
New-onset diabetes mellitus among patients without diabetes mellitus at baseline §	139/1348 (10.5)	107/1300 (8.4)		1.26 (0.98 to 1.62)	0.07
Initiation of antidiabetics among patients without diabetes mellitus at baseline §	96/1348 (7.3)	67/1300 (5.3)		1.39 (1.02 to 1.89)	0.04
Hospital admission due to heart failure	8 (0.4)	7 (0.4)	0.0 (-0.3 to 0.4)	1.13 (0.41 to 3.10)	0.82
Deep vein thrombosis or pulmonary embolism:	6 (0.3)	2 (0.1)	0.2 (-0.1 to 0.5)	2.96 (0.60 to 14.66)	0.16
Deep vein thrombosis (No)	4	2			
Pulmonary embolism (No)	3	0			
Peripheral artery revascularization	10 (0.5)	15 (0.8)	-0.3 (-0.8 to 0.2)	0.59 (0.26-1.35)	0.21
Aortic intervention or surgery:	2 (0.1)	0	0.1 (-0.0 to 0.2)	-	-
Endovascular treatment (No)	2	0			

Surgical treatment (No)	0	0			
End stage kidney disease	8 (0.4)	3 (0.2)	0.3 (-0.1 to 0.6)	2.63 (0.70 to 9.90)	0.14
Discontinuation of statin treatment	35 (1.8)	34 (1.8)	0.0 (-0.8 to 0.9)	1.01 (0.63 to 1.63)	0.96
Cataract surgery	49 (2.5)	28 (1.5)	1.1 (0.2 to 1.9)	1.73 (1.09 to 2.76)	0.02
Composite of laboratory detected abnormalities¶:	23 (1.2)	16 (0.8)	0.3 (-0.3 to 1.0)	1.42 (0.75 to 2.69)	0.28
Increase in aminotransferase (No)	10	7			
Increase in creatine kinase (No)	3	3			
Increase in creatinine (No)	10	6			

CI=confidence interval.

*Primary and secondary outcomes were evaluated in the per-protocol population three years after randomisation. The listed percentages were estimated using the Kaplan-Meier method, so values might not calculate mathematically.

†Calculated using log rank test.

‡All coronary revascularisations were clinically indicated by a diameter stenosis ≥50% on invasive coronary angiography with ischaemic symptoms or signs or ≥70% even in the absence of symptoms or signs.

§Data are number of patients/total number of patients (%).

¶An increase in aminotransferase level was defined as more than baseline level and >3 times the upper reference limit; an increase in creatine kinase level was defined as more than baseline level and >5 times the upper reference limit; and an increase in creatinine level was defined as >50% increase from baseline and greater than the upper reference limit.

Supplementary table S8. Serial changes in lipid profiles

	Rosuvastatin group	Atorvastatin group	Absolute difference (95% CI)	P-value
Lipid profile, mean ± standard deviation, mmol/L				
At 6 weeks				
Number of patients	1570	1629		
LDL cholesterol	1.71±0.56	1.82±0.54	-0.11 (-0.15 to -0.08)	<0.001
Total cholesterol	3.52±0.70	3.51±0.71	0.00 (-0.04 to 0.05)	0.89
Triglyceride	1.45±0.72	1.42±0.77	0.03 (-0.02 to 0.08)	0.26
HDL cholesterol	1.23±0.30	1.22±0.29	0.01 (-0.01 to 0.03)	0.39
At 3 months				
Number of patients	447	391		
LDL cholesterol	1.65±0.57	1.79±0.59	-0.15 (-0.23 to -0.07)	<0.001
Total cholesterol	3.51±0.76	3.51±0.73	0.00 (-0.1 to 0.1)	0.99
Triglyceride	1.54±1.07	1.59±1.11	-0.05 (-0.20 to 0.10)	0.50
HDL cholesterol	1.20±0.33	1.18±0.29	0.02 (-0.02 to 0.06)	0.32
At 6 months				
Number of patients	1098	1068		
LDL cholesterol	1.70±0.57	1.83±0.54	-0.13 (-0.17 to -0.08)	<0.001
Total cholesterol	3.56±0.71	3.56±0.73	0.01 (-0.05 to 0.07)	0.81
Triglyceride	1.48±0.81	1.47±0.83	0.01 (-0.06 to 0.08)	0.78
HDL cholesterol	1.23±0.31	1.23±0.30	-0.00 (-0.03 to 0.03)	0.99
At 1 year				
Number of patients	1875	1841		
LDL cholesterol	1.74±0.57	1.83±0.55	-0.09 (-0.12 to -0.05)	<0.001
Total cholesterol	3.55±0.71	3.53±0.71	0.01 (-0.03 to 0.06)	0.56
Triglyceride	1.51±0.92	1.45±0.82	0.06 (0.00 to 0.11)	0.04
HDL cholesterol	1.23±0.31	1.23±0.30	0.00 (-0.02 to 0.02)	0.79

At 2 years				
Number of patients	1673	1660		
LDL cholesterol	1.70±0.57	1.77±0.51	-0.07 (-0.11 to -0.03)	<0.001
Total cholesterol	3.54±0.69	3.50±0.68	0.04 (-0.01 to 0.08)	0.11
Triglyceride	1.45±0.83	1.42±0.79	0.02 (-0.03 to 0.08)	0.44
HDL cholesterol	1.23±0.31	1.22±0.30	0.01 (-0.01 to 0.03)	0.33
At 3 years				
Number of patients	1582	1532		
LDL cholesterol	1.71±0.59	1.79±0.56	-0.08 (-0.12 to -0.04)	<0.001
Total cholesterol	3.53±0.70	3.50±0.69	0.03 (-0.02 to 0.08)	0.23
Triglyceride	1.44±0.84	1.44±0.90	-0.01 (-0.07 to 0.06)	0.86
HDL cholesterol	1.21±0.30	1.20±0.29	0.01 (-0.01 to 0.03)	0.33

CI=confidence interval; HDL=high density lipoprotein; LDL=low density lipoprotein.

Supplementary table S9. Reasons for discontinuing statin treatment by adverse event

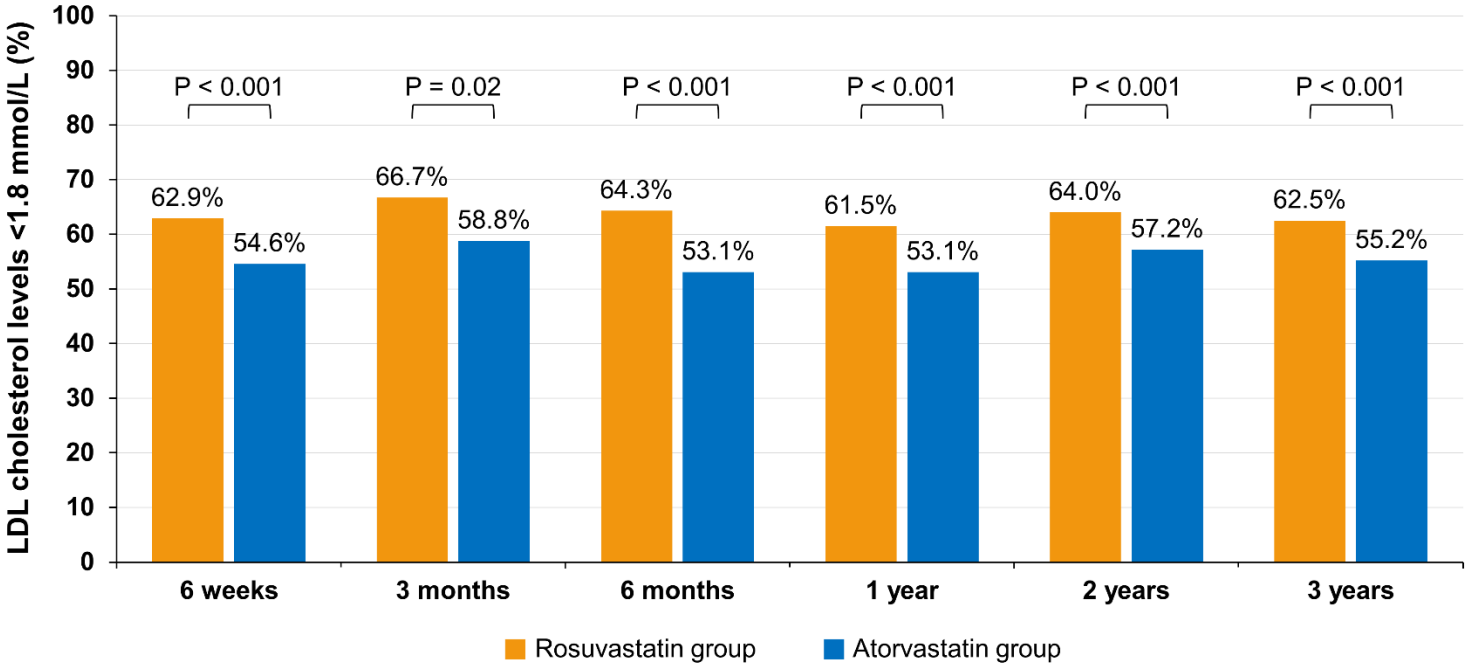
	Rosuvastatin group (n=40)	Atorvastatin group (n=37)
General weakness	13 (32.5)	13 (35.1)
Gastrointestinal symptoms	11 (27.5)	7 (18.9)
Muscle symptoms	10 (25.0)	4 (10.8)
Itching or urticaria	0	2 (5.4)
Dizziness or peripheral numbness	0	4 (10.8)
Creatine kinase elevation	3 (7.5)	3 (8.1)
Liver enzyme elevation	2 (5.0)	0
Other	1 (2.5)	4 (10.8)

Supplementary table S10. Primary outcome by statin intensity strategy and statin type

	Treat-to-target strategy (n=2200)				High intensity statin strategy (n=2200)				P-value for interaction
	Rosuvastatin group (n=1098)	Atorvastatin group (n=1102)	HR (95% CI)	P-value	Rosuvastatin group (n=1106)	Atorvastatin group (n=1094)	HR (95% CI)	P-value	
Primary outcome (death, myocardial infarction, stroke, or any coronary revascularization)	92 (8.5)	85 (7.8)	1.09 (0.82 to 1.47)	0.55	97 (8.8)	93 (8.6)	1.03 (0.77 to 1.37)	0.85	0.77

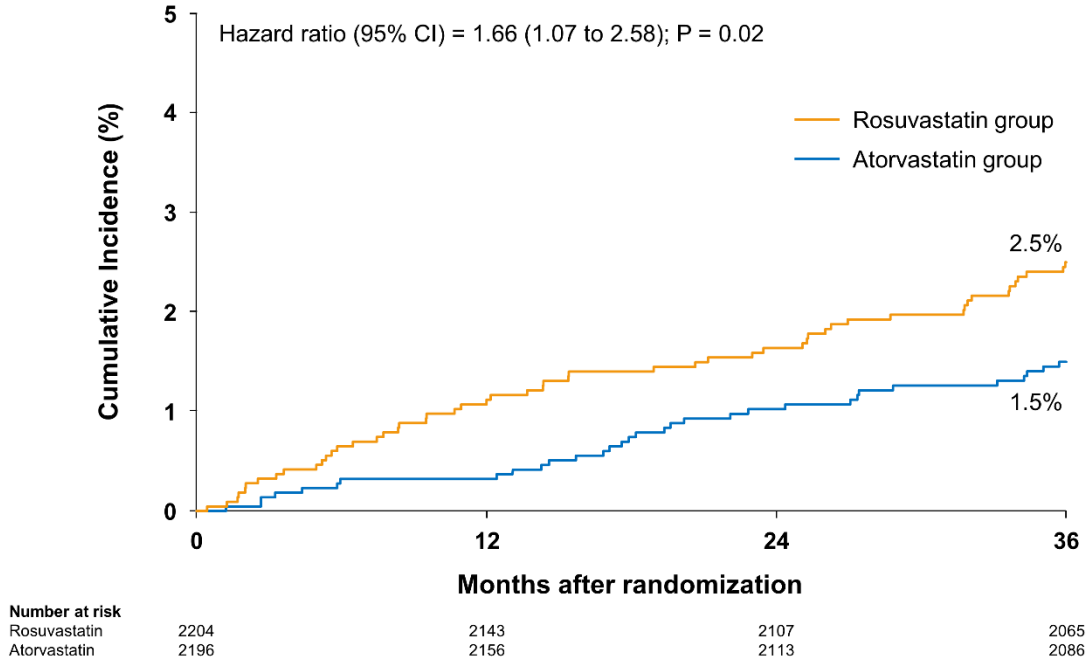
Data are number (% of the cumulative rates at 3 years according to Kaplan-Meier event rates). CI=confidence interval; HR=hazard ratio.

Supplementary fig S1. Proportion of participants with LDL cholesterol levels <1.8 mmol/L



Proportion of participants achieving LDL cholesterol levels <1.8 mmol/L over time in participants assigned to rosuvastatin or atorvastatin. LDL=low density lipoprotein.

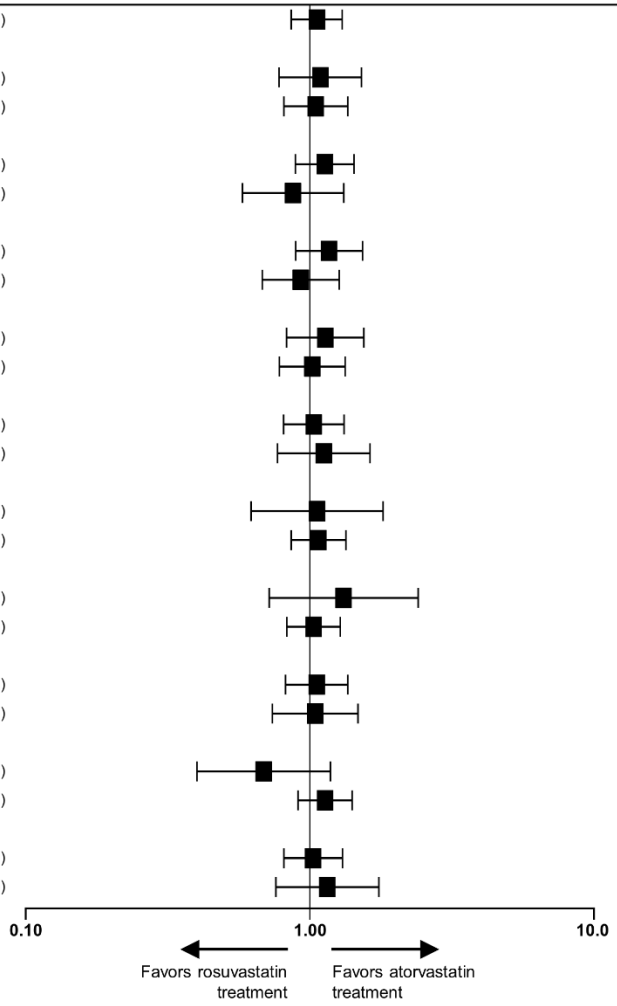
Supplementary fig S2. Time-to-event curves of the cataract surgery



Kaplan-Meier survival curves for the cataract surgery in participants assigned to rosuvastatin or atorvastatin. CI=confidence interval.

Supplementary fig S3. Subgroup analysis for the primary outcome

Subgroup	No. / Total (%) Rosuvastatin group	No. / Total (%) Atorvastatin group	HR (95% CI)	P-value for interaction
All patients	189/2204 (8.7)	178/2196 (8.2)	1.06 (0.86 to 1.30)	
Age, years				0.88
<65	73/1018 (7.2)	65/990 (6.6)	1.09 (0.78 to 1.52)	
≥65	116/1186 (9.9)	113/1206 (9.5)	1.05 (0.81 to 1.36)	
Sex				0.29
Men	148/1602 (9.3)	129/1570 (8.3)	1.13 (0.89 to 1.43)	
Women	41/602 (6.7)	49/626 (7.8)	0.87 (0.58 to 1.32)	
Body mass index				0.28
<25	112/1232 (9.2)	99/1266 (7.9)	1.17 (0.89 to 1.53)	
≥25	77/972 (8.0)	79/930 (8.6)	0.93 (0.68 to 1.27)	
Diabetes mellitus				0.61
Yes	82/725 (11.5)	75/743 (10.2)	1.13 (0.83 to 1.55)	
No	107/1479 (7.3)	103/1453 (7.2)	1.02 (0.78 to 1.33)	
Hypertension				0.71
Yes	133/1498 (9.0)	124/1439 (8.7)	1.03 (0.81 to 1.32)	
No	56/706 (8.0)	54/757 (7.2)	1.12 (0.77 to 1.63)	
Chronic kidney disease				0.97
Yes	26/149 (17.6)	28/170 (16.6)	1.06 (0.62 to 1.81)	
No	163/2055 (8.0)	150/2026 (7.5)	1.07 (0.86 to 1.34)	
AMI <1 year at randomization				0.45
Yes	25/175 (14.6)	18/163 (11.2)	1.31 (0.72 to 2.41)	
No	164/2029 (8.2)	160/2033 (7.9)	1.03 (0.83 to 1.28)	
Previous PCI				0.95
Yes	125/1258 (10.0)	114/1199 (9.6)	1.06 (0.82 to 1.36)	
No	64/946 (6.8)	64/997 (6.5)	1.04 (0.74 to 1.48)	
Ezetimibe before randomization				0.10
Yes	24/259 (9.3)	29/220 (13.3)	0.69 (0.40 to 1.18)	
No	165/1945 (8.6)	149/1976 (7.6)	1.13 (0.91 to 1.41)	
Baseline LDL cholesterol, mmol/L				0.64
<2.6	144/1606 (9.0)	136/1555 (8.8)	1.03 (0.81 to 1.30)	
≥2.6	45/598 (7.7)	42/641 (6.7)	1.15 (0.76 to 1.75)	



AMI=acute myocardial infarction; CI=confidence interval; HR=hazard ratio; LDL=low density lipoprotein; PCI=percutaneous coronary intervention.