

# **Supplemental Material**

**Table S1. Estimated yearly risk of specific types of cardiovascular events at various ages (supplemental to Figure 1B).**

Age (y)	Arrhythmia		CV death		Stroke/TIA		Aortic complication		HF hospitalization		CAD		Endocarditis	
	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)	No. at risk	Yearly risk, % (95% CI)
<b>20</b>	242	0.25 (0.16-0.40)	243	0.03 (0.01-0.09)	243	0.07 (0.03-0.15)	228	0.49 (0.32-0.74)	243	0.02 (0.01-0.07)	243	0.02 (0.005-0.06)	243	0.07 (0.03-0.17)
<b>30</b>	287	0.48 (0.36-0.66)	297	0.08 (0.04-0.17)	295	0.15 (0.09-0.25)	284	0.81 (0.62-1.06)	296	0.05 (0.02-0.13)	297	0.04 (0.02-0.11)	295	0.11 (0.06-0.21)
<b>40</b>	184	0.89 (0.69-1.15)	197	0.20 (0.12-0.34)	195	0.30 (0.20-0.46)	187	1.17 (0.90-1.52)	197	0.13 (0.07-0.24)	197	0.10 (0.05-0.21)	193	0.17 (0.10-0.29)
<b>50</b>	104	1.57 (1.20-2.05)	110	0.48 (0.32-0.75)	107	0.61 (0.41-0.91)	103	1.40 (1.02-1.91)	111	0.30 (0.18-0.51)	108	0.25 (0.14-0.44)	109	0.26 (0.15-0.48)
<b>60</b>	41	2.60 (1.87-3.62)	46	1.11 (0.70-1.76)	45	1.21 (0.75-1.94)	44	1.50 (0.97-2.33)	46	0.70 (0.39-1.24)	44	0.58 (0.30-1.09)	46	0.39 (0.18-0.88)
<b>70</b>	14	4.22 (2.64-6.76)	17	2.51 (1.37-4.58)	13	2.27 (1.18-4.34)	16	1.57 (0.79-3.13)	17	1.56 (0.73- 3.36)	16	1.29 (0.55-3.01)	17	0.57 (0.19-1.70)

CAD, coronary artery disease; CV, cardiovascular; HF, heart failure; TIA, transient ischemic attack; y, years.

**Table S2. Overview of cardiovascular events in CoA patients with and without a left-sided MHV.**

	Left-sided MHV (n = 60)		No left-sided MHV (n = 860)	
	No. of cases	Incidence / 1,000 patient- years	No. of cases	Incidence / 1,000 patient- years
<b>Coronary artery disease</b>	<b>2</b>	<b>3.4</b>	<b>12</b>	<b>1.5</b>
Myocardial infarction	1	1.7	5	0.6
Coronary revascularization	1	1.7	5	0.6
Stable angina, medically treated	0	0	2	0.3
<b>Stroke/TIA</b>	<b>11</b>	<b>18.4</b>	<b>23</b>	<b>2.9</b>
Ischemic stroke	4	6.7	14	1.8
Hemorrhagic stroke, intracerebral	0	0	1	0.1
Hemorrhagic stroke, subarachnoidal	0	0	1	0.1
TIA	7	11.7	7	0.9
<b>Aortic complication</b>	<b>5</b>	<b>8.4</b>	<b>79</b>	<b>10.0</b>
Aneurysm	4	6.7	73	9.2
Dissection	1	1.7	6	0.8
<b>Arrhythmia</b>	<b>24</b>	<b>40.2</b>	<b>60</b>	<b>7.6</b>
Supraventricular arrhythmia	16	26.8	42	5.3
Ventricular arrhythmia	7	11.7	11	1.4
Conduction disturbance	1	1.7	7	0.9
<b>Heart failure hospitalization</b>	<b>6</b>	<b>10.1</b>	<b>9</b>	<b>1.1</b>
<b>Endocarditis</b>	<b>4</b>	<b>6.7</b>	<b>11</b>	<b>1.4</b>
<b>CV death</b>	<b>7</b>	<b>11.7</b>	<b>17</b>	<b>2.1</b>
<b>Total CV events</b>	<b>59</b>	<b>98.9</b>	<b>211</b>	<b>26.6</b>
<b>No. of individual patients with CV event</b>	<b>36</b>	<b>NA</b>	<b>155</b>	<b>NA</b>

CV, cardiovascular; MHV, mechanical heart valve; NA, not applicable; TIA, transient ischemic attack.

**Table S3. Addition of age at baseline to the multivariable Cox proportional-hazards regression to identify factors associated with the risk of cardiovascular events.**

	Cardiovascular event	
	HR (95% CI)	<i>p</i> -value
Female sex	0.82 (0.59-1.15)	0.25
Age at baseline (y)	0.95 (0.92-0.99)	<b>0.01</b>
Age at initial CoA repair (y)	1.021 (1.004-1.039)	<b>0.01</b>
Bicuspid aortic valve	1.31 (0.95-1.80)	0.09
Ventricular septal defect	1.03 (0.70-1.52)	0.88
Prior CAD	2.30 (0.86-6.18)	0.10
Prior stroke/TIA	1.91 (0.93-3.92)	0.08
Prior arrhythmia	1.61 (0.95-2.71)	0.08
Systolic BP (mmHg)	1.004 (0.995-1.013)	0.37
Diastolic BP (mmHg)	1.012 (0.997-1.028)	0.12
BMI (kg/m <sup>2</sup> )	1.03 (1.00-1.06)	0.05
Hypercholesterolemia	1.50 (1.00-2.26)	0.05
Diabetes mellitus	0.50 (0.20-1.24)	0.13
Cigarette smoking	1.15 (0.81-1.62)	0.43
Family history of premature CVD	1.24 (0.71-2.16)	0.44
LV mass index (g/m <sup>2</sup> )	1.009 (1.005-1.013)	<b>&lt;0.001</b>

A total of 920 patients were included in the analysis, of whom 191 patients developed a cardiovascular event.

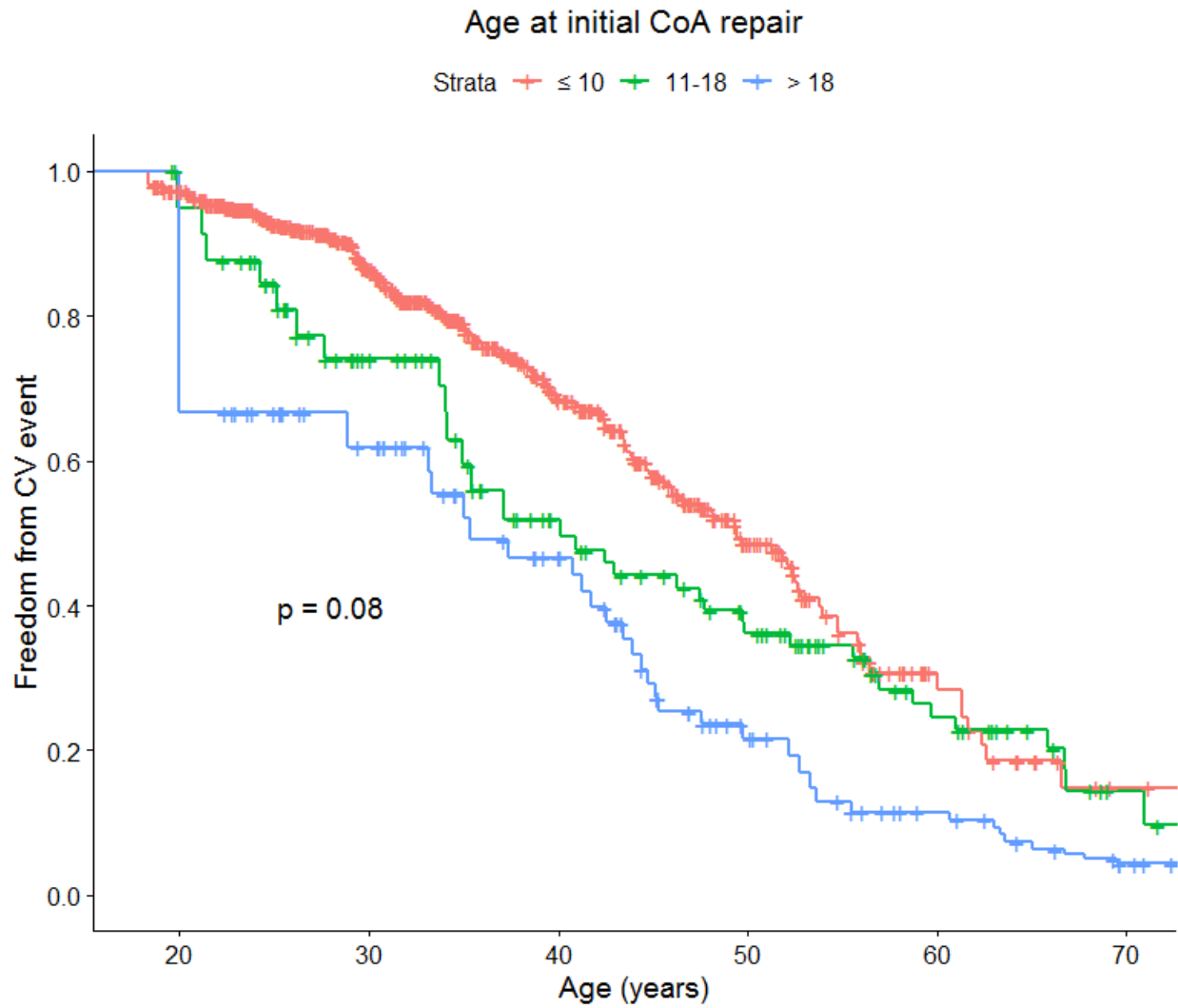
BMI, body mass index; BP, blood pressure; CAD, coronary artery disease; CV, cardiovascular; CVD, cardiovascular disease; HR, hazard ratio; LV, left ventricular; TIA, transient ischemic attack; y, years.

**Table S4. Overview of causes of mortality.**

<b>Cause of mortality</b>	<b>Total n = 42</b>	<b>Age at death (y) median (range)</b>
<b>Cardiovascular</b>	<b>24</b>	<b>48 (25-79)</b>
Sudden cardiac death	10	49 (25-77)
Heart failure	8	54 (35-79)
Spontaneous thoracic aortic dissection	2	62 (57-67)
Iatrogenic thoracic aortic dissection	1	42
Myocardial infarction	1	40
Endocarditis	1	44
Ischemic stroke	1	45
<b>Non-cardiovascular</b>	<b>17</b>	<b>49 (30-84)</b>
Malignancy	6	35 (30-49)
Sepsis	3	50 (33-65)
Gastrointestinal hemorrhage	2	72 (59-84)
Renal hemorrhage	1	51
Other	5	58 (30-75)
Unknown	1	72

y, years.

**Figure S1. Freedom from a cardiovascular event in subgroups based on age at initial CoA repair.**



Kaplan-Meier graph showing the freedom from a cardiovascular event in three subgroups based on the age at initial CoA repair ( $\leq 10$  years, 11-18 years, and  $> 18$  years). CV, cardiovascular.