

Supplementary Table 6. Clinical outcomes across CKM stages 0–3

Stage	Participants	Events	Person-year	IR	Model1			Model2			Model3		
					HR	95% CI	p value	HR	95% CI	p value	HR	95% CI	p value
Composite primary outcome													
0	260,534	6,846	3,310,952	2.07	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	9,253	2,975,684	3.11	1.05	1.02–1.08	0.004	1.04	1.01–1.07	0.017	1.08	1.05–1.12	< 0.001
2	862,009	89,902	10,654,273	8.44	1.55	1.51–1.59	< 0.001	1.51	1.47–1.55	< 0.001	1.35	1.31–1.38	< 0.001
3	94,864	44,661	978,254	45.65	2.31	2.25–2.38	< 0.001	2.12	2.06–2.19	< 0.001	1.69	1.64–1.75	< 0.001
All-cause death													
0	260,534	3,432	3,326,568	1.03	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	4,198	2,999,458	1.40	0.88	0.84–0.92	< 0.001	1.02	0.97–1.07	0.426	1.05	1.00–1.10	0.042
2	862,009	39,732	10,930,393	3.64	1.11	1.07–1.15	< 0.001	1.26	1.21–1.31	< 0.001	1.15	1.11–1.20	< 0.001
3	94,864	32,275	1,078,123	29.94	1.95	1.87–2.03	< 0.001	2.05	1.97–2.14	< 0.001	1.66	1.59–1.73	< 0.001
Hospitalization for HF													
0	260,534	2,110	3,319,879	0.64	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	2,926	2,989,614	0.98	1.11	1.05–1.17	< 0.001	0.98	0.92–1.04	0.443	1.04	0.99–1.10	0.152
2	862,009	33,632	10,805,046	3.11	1.89	1.81–1.98	< 0.001	1.63	1.55–1.70	< 0.001	1.31	1.25–1.38	< 0.001
3	94,864	16,584	1,025,928	16.16	2.81	2.67–2.95	< 0.001	2.35	2.23–2.47	< 0.001	1.66	1.57–1.75	< 0.001
Stroke (ischemic or hemorrhagic)													
0	260,534	1,876	3,318,315	0.57	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	2,747	2,987,002	0.92	1.17	1.10–1.24	< 0.001	1.10	1.03–1.17	0.002	1.14	1.08–1.21	< 0.001
2	862,009	28,307	10,794,339	2.62	1.85	1.76–1.94	< 0.001	1.70	1.62–1.78	< 0.001	1.52	1.45–1.60	< 0.001
3	94,864	12,102	1,028,164	11.77	2.38	2.25–2.52	< 0.001	2.08	1.97–2.20	< 0.001	1.64	1.55–1.74	< 0.001
Ischemic stroke													
0	260,534	1,274	3,321,116	0.38	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	1,987	2,990,495	0.66	1.21	1.13–1.30	< 0.001	1.12	1.04–1.20	0.002	1.17	1.09–1.26	< 0.001
2	862,009	22,775	10,820,320	2.10	2.04	1.93–2.17	< 0.001	1.84	1.73–1.95	< 0.001	1.62	1.53–1.72	< 0.001
3	94,864	10,634	1,033,067	10.29	2.62	2.46–2.79	< 0.001	2.23	2.09–2.38	< 0.001	1.71	1.60–1.83	< 0.001
Hemorrhagic stroke													
0	260,534	683	3,323,443	0.21	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	901	2,995,496	0.30	1.15	1.04–1.27	0.008	1.16	1.04–1.28	0.006	1.18	1.07–1.31	< 0.001
2	862,009	6,910	10,899,256	0.63	1.53	1.41–1.66	< 0.001	1.52	1.40–1.66	< 0.001	1.41	1.29–1.53	< 0.001
3	94,864	2,078	1,071,665	1.94	1.81	1.64–2.01	< 0.001	1.72	1.55–1.91	< 0.001	1.46	1.31–1.62	< 0.001

Supplementary Table 6. Continued

Stage	Participants	Events	Person-year	IR	Model1			Model2			Model3		
					HR	95% CI	p value	HR	95% CI	p value	HR	95% CI	p value
Myocardial infarction													
0	260,534	392	3,324,858	0.12	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	717	2,996,247	0.24	1.41	1.25–1.60	< 0.001	1.20	1.05–1.35	0.005	1.25	1.11–1.42	< 0.001
2	862,009	8,250	10,888,489	0.76	3.06	2.76–3.39	< 0.001	2.48	2.23–2.76	< 0.001	2.27	2.04–2.52	< 0.001
3	94,864	2,580	1,066,451	2.42	4.02	3.58–4.51	< 0.001	2.90	2.58–3.27	< 0.001	2.35	2.08–2.65	< 0.001
Coronary artery disease													
0	260,534	777	3,323,022	0.23	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	1,538	2,992,145	0.51	1.52	1.40–1.66	< 0.001	1.25	1.14–1.36	< 0.001	1.36	1.25–1.49	< 0.001
2	862,009	21,370	10,813,943	1.98	3.75	3.49–4.03	< 0.001	2.96	2.75–3.19	< 0.001	2.43	2.25–2.62	< 0.001
3	94,864	5,967	1,046,548	5.70	3.83	3.54–4.15	< 0.001	2.85	2.62–3.09	< 0.001	2.00	1.83–2.17	< 0.001
Peripheral artery disease													
0	260,534	64	3,326,251	0.02	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	67	2,999,165	0.02	0.75	0.53–1.05	0.097	0.91	0.64–1.28	0.576	1.06	0.75–1.49	0.753
2	862,009	1,488	10,923,842	0.14	2.78	2.16–3.58	< 0.001	3.24	2.50–4.19	< 0.001	2.05	1.58–2.67	< 0.001
3	94,864	1,061	1,073,873	0.99	6.32	4.82–8.29	< 0.001	6.04	4.59–7.94	< 0.001	2.57	1.93–3.42	< 0.001
Atrial fibrillation													
0	260,534	2,763	3,312,879	0.83	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	3,935	2,979,859	1.32	1.16	1.11–1.22	< 0.001	0.99	0.95–1.04	0.794	1.04	0.99–1.10	0.102
2	862,009	33,954	10,759,410	3.16	1.63	1.56–1.69	< 0.001	1.37	1.31–1.43	< 0.001	1.14	1.09–1.19	< 0.001
3	94,864	11,142	1,032,469	10.79	1.79	1.71–1.88	< 0.001	1.52	1.45–1.60	< 0.001	1.17	1.12–1.24	< 0.001
Hospitalization for AF													
0	260,534	1,127	3,321,714	0.34	1 (Ref.)			1 (Ref.)			1 (Ref.)		
1	234,727	1,789	2,991,693	0.60	1.22	1.13–1.31	< 0.001	1.03	0.95–1.11	0.523	1.07	0.99–1.16	0.074
2	862,009	16,861	10,859,230	1.55	1.66	1.56–1.77	< 0.001	1.37	1.28–1.46	< 0.001	1.15	1.08–1.23	< 0.001
3	94,864	7,526	1,054,038	7.14	1.98	1.85–2.13	< 0.001	1.62	1.51–1.74	< 0.001	1.25	1.16–1.35	< 0.001

AF, atrial fibrillation; CI, confidence interval; CKM, cardiovascular-kidney-metabolic; HF, heart failure; HR, hazard ratio; IR, incidence rate; Ref., reference.

Model 1 was adjusted for age and sex. Model 2 was adjusted for age, sex, smoking status, alcohol consumption, physical activity, and household income. Model 3 was adjusted for age, sex, smoking status, alcohol consumption, physical activity, household income, use of antihypertensive drugs, glucose-lowering drugs, lipid-lowering drugs, and antiplatelet agents.