

## **Supplementary Material**

**Suppl. Table 1. Baseline characteristics of patients with or without YKL-40**

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**Suppl. Fig. 2. Subgroup analysis of MRS 3-6 at 12m by plasma YKL-40 quartile categories.**

**Suppl. Table 1. Baseline characteristics of patients with or without YKL-40**

	Total	With	Without	<i>P</i> value
<b>Age (yr) , n( mean±SD)</b>	8138(61.7±11.6)	8006(61.7±11.5)	132(61.8±12.1)	0.7932
<b>Female, n(%)</b>	2548(31.3%)	2506(31.3%)	42(31.8%)	0.9247
<b>Health Insurance, n(%)</b>	7560(92.9%)	7437(92.9%)	123(93.2%)	1.0000
<b>Smoking, n(%)</b>	2725(33.5%)	2682(33.5%)	43 (32.6%)	0.8531
<b>Alcohol, n(%)</b>	1245(15.3%)	1231(15.4%)	14(10.6%)	0.1440
<b>BMI (Kg/m<sup>2</sup>) , n( mean±SD)</b>	8138(24.7±3.3)	8006(24.7±3.3)	132(24.8±2.9)	0.7062
<b>Prior disease history, n(%)</b>				
<b>Hypertension</b>	4831(59.4%)	4737(59.2%)	94(71.2%)	0.0054
<b>Diabetes Mellitus</b>	1823(22.4%)	1798(22.5%)	25(18.9%)	0.3996
<b>Hyperlipidemia</b>	583(7.2%)	573(7.2%)	10(7.6%)	0.8641
<b>TIA</b>	189(2.3%)	183(2.3%)	6(4.6%)	0.1304
<b>Cardiovascular diseases</b>	1289(15.8%)	1267(15.8%)	22(16.7%)	0.8098
<b>Medication during hospital, n(%)</b>				

<b>Antithrombotics</b>	7965(98.7%)	7836(98.7%)	129 (98.5%)	0.6887
<b>Antihypertensive medicines</b>	3678(45.6%)	3621(45.6%)	57(43.5%)	0.6591
<b>Diabetes medicines</b>	2053(25.4%)	2018(25.4%)	35(26.7%)	0.7616
<b>Lipid-lowering medicines</b>	7831(97.0%)	7701(97.0%)	130(99.2%)	0.1892
<b>BWC (<math>\times 10^9/L</math>) *, n(median, IQR)</b>	8026(7.7, 5.7-8.5)	7894(6.9, 5.7-8.5)	132(7.1, 5.9-8.8)	0.2477
<b>Blood glucose, n( mean<math>\pm</math>SD)</b>	6448(5.6, 4.9-7.0)	6343(5.6, 4.9-7.0)	105(5.6, 5.0-7.2)	0.5837
<b>Blood lipid, n( mean<math>\pm</math>SD)</b>				
<b>TG</b>	8086(1.6 $\pm$ 1.0)	7959(1.6 $\pm$ 1.0)	127 (1.7 $\pm$ 0.9)	0.3171
<b>CHO</b>	8090(4.2 $\pm$ 1.2)	7963(4.2 $\pm$ 1.2)	127(4.4 $\pm$ 1.1)	0.0186
<b>HDL</b>	8083(1.1 $\pm$ 0.5)	7956(1.1 $\pm$ 0.5)	127(1.1 $\pm$ 0.3)	0.4966
<b>LDL</b>	8084(2.5 $\pm$ 1.1)	7957(2.5 $\pm$ 1.1)	127(2.6 $\pm$ 0.9)	0.0934
<b>APOA1</b>	4301(1.2 $\pm$ 0.4)	4234(1.2 $\pm$ 0.4)	67(1.3 $\pm$ 0.3)	0.1077
<b>APOB</b>	5025(1.0 $\pm$ 1.1)	4947(1.0 $\pm$ 1.1)	78(1.0 $\pm$ 0.2)	0.0160
<b>CRP, mg/L*, n(median, IQR)</b>	7857(1.8,0.8-4.6)	7755(1.8,0.8-4.6)	102 (2.1,0.7-4.8)	0.7989
<b>NIHSS at admission*, n(median, IQR)</b>	8138(3.0,2.0-6.0)	8006(3.0,2.0-6.0)	132(3.0,2.0-6.0)	0.6620
<b>In-hospital complications, n(%)</b>				

<b>Respiratory disease</b>	434(5.3%)	425(5.3%)	9(6.8%)	0.4312
<b>liver disease</b>	576(7.1%)	569(7.1%)	7(5.3%)	0.6055
<b>Urinary system diseases</b>	213 (2.6%)	208(2.6%)	5(3.8%)	0.3988
<b>bleeding</b>	130(1.6%)	128(1.6%)	2(1.5%)	1.0000

Abbreviation: APOA1, apolipoprotein A1; APOB, apolipoprotein B; BMI, body mass index; BWC, Blood white cell; CHO, cholesterol; CRP, C-reactive protein; HDL, high density lipoprotein; IQR, interquartile range; LDL, low density lipoprotein; SD, standard deviation; TG, triglyceride.

\* Non-normal distribution variables.

**Suppl. Table 2. 12-month death rates in patients with different types of ischemic stroke categorized by plasma YKL-40 percentiles**

subtype	N	Plasma YKL-40 Percentile Categories			
		0-33%	34-66%	67-90%	91-100%
All, n(%)	8006	23(0.9%)	59(2.2%)	84(4.4%)	75(9.4%)
large artery atherosclerosis, n(%)	1995	8(1.3%)	17(2.4%)	21(4.4%)	15(8.1%)
cardiogenic embolism, n(%)	519	0	6(4.0%)	14(8.4%)	14(14.9%)
small artery occlusion, n(%)	1803	1(0.2%)	6(1.0%)	4(1.1%)	5(3.6%)
another determined cause, n(%)	91	0	0	1(4.8%)	3(17.7%)
undetermined cause , n(%)	3598	14(1.2%)	30(2.6%)	44(4.9%)	38(10.4%)

**Suppl. Table 3. 12-month mRS 3-6 in patients with different types of ischemic stroke categorized by plasma YKL-40 percentiles**

subtype	N	Plasma YKL-40 Percentile Categories			
		0-33%	34-66%	67-90%	91-100%
All, n(%)	7807	174(6.8%)	271(10.5%)	293(15.7%)	187(24.0%)
large artery atherosclerosis, n(%)	1925	70(11.7%)	97(13.9%)	84(18.6%)	44(24.4%)
cardiogenic embolism, n(%)	503	9(8.9%)	19(12.8%)	32(20.1%)	31(33.0%)
small artery occlusion, n(%)	1771	13(1.9%)	31(5.1%)	24(6.7%)	13(9.9%)
another determined cause, n(%)	90	1(3.1%)	2(10.0%)	4(19.1%)	6(35.3%)
undetermined cause , n(%)	3518	81(6.9%)	122(10.9%)	149(17.0%)	93(26.2%)

**Suppl. Table 4. Unadjusted and adjusted hazard ratios of death in patients categorized by plasma YKL-40 quartile**

	3m			6m			12m		
	No. of patients (%)	HR (unadjusted)	HR (Adjusted*)	No. of patients (%)	HR (unadjusted)	HR (Adjusted*)	No. of patients (%)	HR (unadjusted)	HR (Adjusted*)
0-25%	10 (0.5)	Reference		11 (0.5)	Reference		19(1.0)	Reference	
26-50%	19 (1.0)	1.91 (0.89-4.10)	1.28 (0.56-2.94)	30 (1.5)	2.74 (1.31-5.46)	1.95(0.94-4.06)	36(1.8)	1.90(1.09-3.31)	1.31(0.73-2.34)
51-75%	21 (1.1)	2.10 (0.99-4.47)	1.03 (0.45-2.34)	33 (1.7)	3.01 (1.52-5.95)	1.46(0.70-3.04)	52(2.6)	2.75(1.63-4.66)	1.35(0.78-2.36)
76-100%	67 (3.4)	6.82 (3.51-13.25)	1.78 (0.82-3.86)	94 (4.7)	8.75 (4.68-16.3)	2.40(1.19-4.85)	134(6.7)	7.28(4.50-11.77)	2.15(1.27-3.66)

Abbreviation: HR, hazard ratios.

\*adjusted for: age, sex, smoking, drinking, hypertension, diabetes mellitus, low density lipoprotein, C-reactive protein, national institutes of health stroke scale, medicine at discharge (antiplatelet, Anticoagulant, lipid-lowering, hypoglycemic, antihypertensive medicines), complications (respiratory, liver, urinary and bleeding diseases)

**Suppl. Table 5. Unadjusted and adjusted odds ratios of mRS 3-6 in patients categorized by plasma YKL-40 quartile**

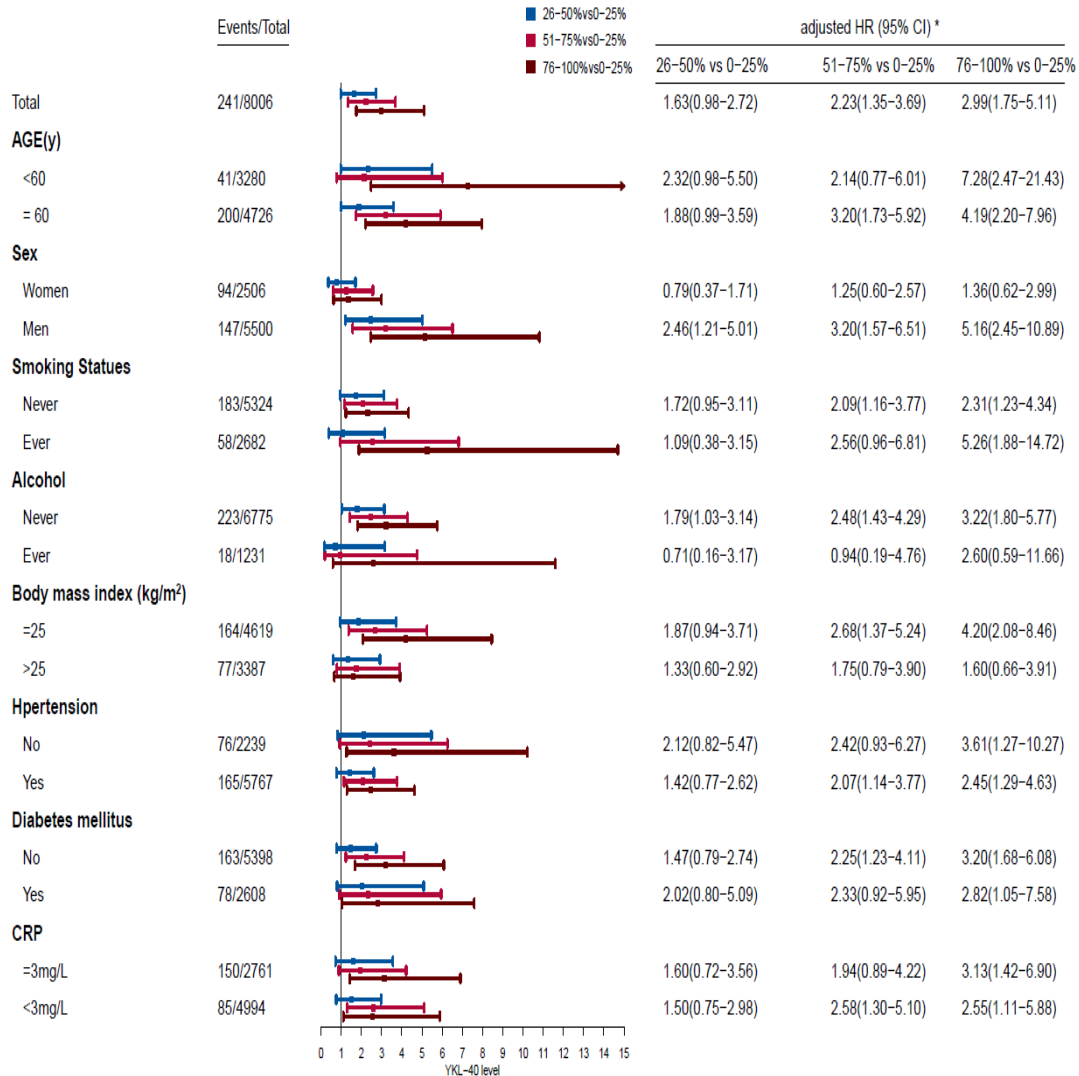
	3m			6m			12m		
	No. of patients (%)	OR (unadjusted)	OR (Adjusted*)	No. of patients (%)	OR (unadjusted)	OR (Adjusted*)	No. of patients (%)	OR (unadjusted)	OR (Adjusted*)
0-25%	163(8.2)	Reference		138 (7.0)	Reference		127(6.5)	Reference	
26-50%	228(11.5)	1.45(1.17-1.79)	1.24(0.99-1.57)	181(9.1)	1.34(1.06-1.68)	1.06(0.82-1.36)	175(8.9)	1.40(1.11-1.78)	1.09(0.84-1.40)
51-75%	263(13.3)	1.71(1.39-2.10)	1.16(0.92-1.47)	235(11.9)	1.79 (1.44-2.23)	1.08(0.85-1.39)	231(11.8)	1.92(1.53-2.41)	1.12(0.87-1.44)
76-100%	382(19.4)	2.68(2.20-3.26)	1.24(0.99-1.60)	358(18.2)	2.95(2.40-3.63)	1.18(0.92-1.51)	392(20.2)	3.62 (2.93-4.47)	1.42(1.10-1.82)

Abbreviation: OR, odds ratios.

\*adjusted for: age, sex, smoking, drinking, hypertension, diabetes mellitus, low density lipoprotein, C-reactive protein, national institutes of health stroke scale, medicine at discharge (antiplatelet, Anticoagulant, lipid-lowering, hypoglycemic, antihypertensive medicines), complications (respiratory, liver, urinary and bleeding diseases).

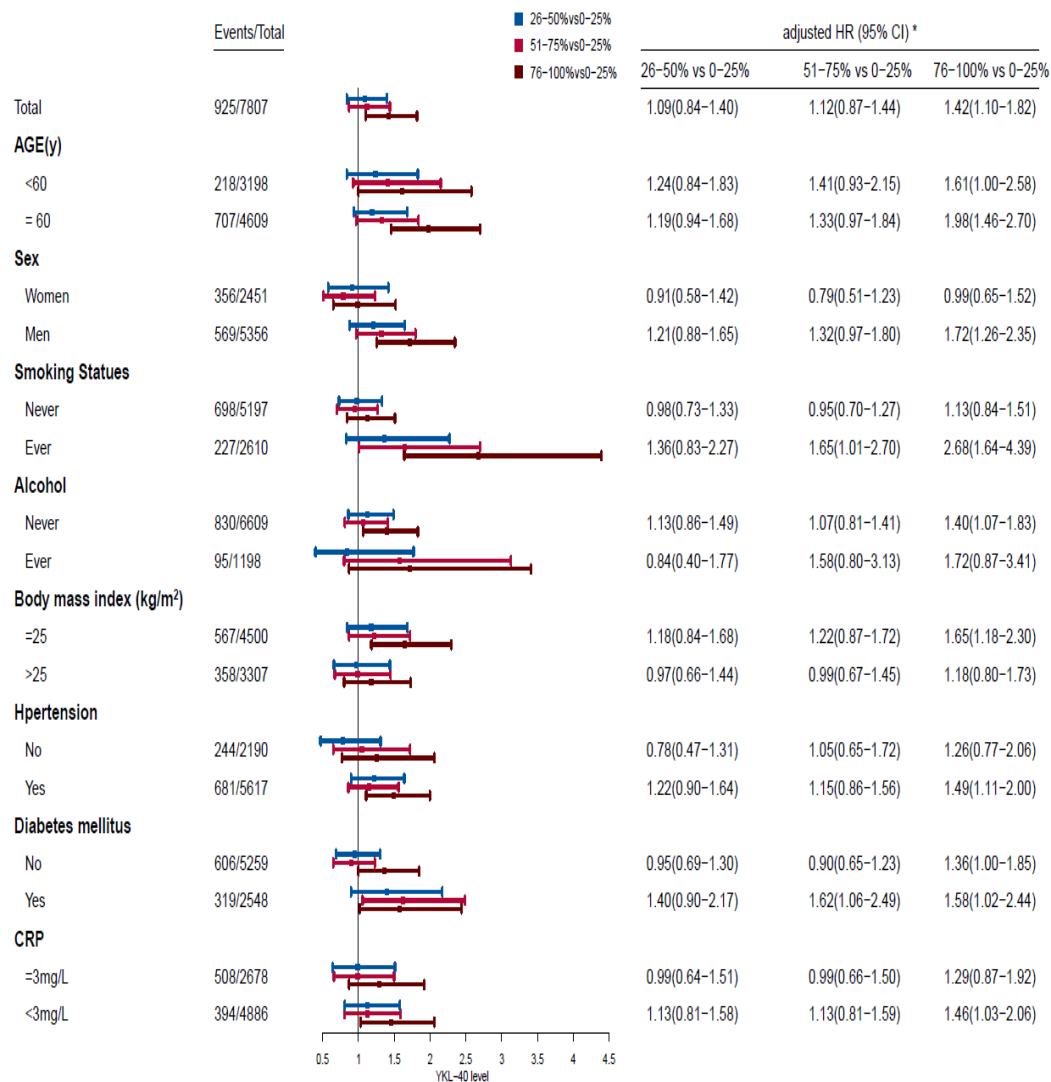


**Suppl. Fig. 1. Subgroup analysis of death at 12m by plasma YKL-40 quartile categories**



\*HR had been adjusted for potential confounders including age, sex, smoking, drinking, hypertension, DM, LDL, CRP, NIHSS, medicine at discharge (antiplatelet, anticoagulant, lipid-lowering, hypoglycemic, antihypertensive medicines), complications (respiratory, liver, urinary and bleeding diseases). Abbreviation: BMI, body mass index; CI, confidence intervals; CRP, C-reactive protein; HR, hazard ratios.

**Suppl. Fig. 2. Subgroup analysis of MRS 3-6 at 12m by plasma YKL-40 quartile categories**



\*OR had been adjusted for potential confounders including age, sex, smoking, drinking, hypertension, DM, LDL, CRP, NIHSS, medicine at discharge (antiplatelet, anticoagulant, lipid-lowering, hypoglycemic, antihypertensive medicines), complications (respiratory, liver, urinary and bleeding diseases). Abbreviation: BMI, body mass index; CI, confidence intervals; CRP, C-reactive protein; OR, odds ratio.