SUPPLEMENTAL DATA

Xu et al: TyG index & depression risk in elderly

Association between triglyceride-glucose (TyG) index and risk of depression in middle-aged and elderly chinese adults: Evidence from a large national cohort study

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Table S1. Baseline characteristics of participants according to the depression

Characteristic	All (n=3021)	Depression		p value [a]
		No (n=1239)	Yes (n=1728)	
Age, mean (SD)	56.9 (8.38)	56.8 (8.10)	57.0 (8.57)	0.662
Gender, n (%)				<0.001
male	1477 (48.9)	720 (58.1)	757 (42.5)	
female	1544 (51.1)	519 (41.9)	1025 (57.5)	
Residence, n (%)				<0.001
rural	2436 (80.6)	942 (76.0)	1494 (83.8)	
urban	585 (19.4)	297 (24.0)	288 (16.2)	
Education, n (%)				<0.001
No formal education	1140 (37.7)	375 (30.3)	765 (42.9)	
Primary school	1465 (48.5)	635 (51.3)	830 (46.6)	
High school or above	416 (13.8)	229 (18.5)	187 (10.5)	
Marital status, n (%)				0.061
Married	2813 (93.1)	1167 (94.2)	1646 (92.4)	
Others	208 (6.89)	72 (5.81)	136 (7.63)	
SBP [b](mmHg), mean (SD)	128 (19.5)	127 (18.6)	128 (20.1)	0.065
DBP [b] (mmHg), mean (SD)	74.9 (11.2)	74.6 (11.2)	75.0 (11.1)	0.380
BMI [b] (kg/m2), mean (SD)	24.0 (3.80)	23.9 (3.60)	24.1 (3.93)	0.202
Waist circumference b (cm), median (IQR)	84.2 [77.8;91.0]	84.2 [78.0;91.0]	84.1 [77.6;91.4]	0.977
Alcohol consumption, n (%)				<0.001
Never	1769 (58.6)	658 (53.1)	1111 (62.3)	
Former	207 (6.85)	87 (7.02)	120 (6.73)	
Current	1045 (34.6)	494 (39.9)	551 (30.9)	
Sleep time [b] (h), n(%)				<0.001
<6	1288 (42.6)	447 (36.1)	841 (47.2)	
>=6	1733 (57.4)	792 (63.9)	941 (52.8)	

Nap time [b] (min), median (IQR)	2.00 [0.00;60.0]	30.0 [0.00;60.0]	1.00 [0.00;60.0]	0.002
Hemoglobin [b] (g/dl), mean (SD)	14.4 (1.92)	14.5 (1.86)	14.2 (1.96)	<0.001
HbA1c, mean (SD)	5.10 [4.90;5.40]	5.10 [4.80;5.30]	5.10 [4.90;5.40]	0.003
HDL (mg/dl), mean (SD)	51.2 (13.5)	51.7 (13.5)	50.8 (13.4)	0.092
LDL (mg/dl), mean (SD)	115 (31.0)	115 (30.4)	115 (31.4)	0.839
BUN [b] (mg/dl), mean (SD)	15.4 (4.07)	15.6 (3.99)	15.2 (4.12)	0.009
UA [b] (mg/dl), mean (SD)	4.34 (1.12)	4.42 (1.09)	4.29 (1.13)	0.003
Serum creatinine (mg/dl), mean (SD)	0.77 (0.16)	0.78 (0.16)	0.76 (0.16)	0.012
CRP (mg/l), mean (SD)	0.92 [0.51;1.81]	0.91 [0.50;1.71]	0.93 [0.52;1.92]	0.043
WBC [b] (thousands/ul), mean (SD)	6.05 (1.61)	5.99 (1.60)	6.10 (1.61)	0.088
Hypertension n(%)	629 (20.8)	232 (18.7)	397 (22.3)	0.020
Kidney disease n (%)	165 (5.46)	58 (4.68)	107 (6.00)	0.135
Dyslipidemia n (%)	249 (8.24)	115 (9.28)	134 (7.52)	0.096
Arthritis n (%)	837 (27.7)	270 (21.8)	567 (31.8)	<0.001
Digestive disease n (%)	596 (19.7)	214 (17.3)	382 (21.4)	0.005
Heart disease n (%)	267 (8.84)	105 (8.47)	162 (9.09)	0.602
Diabetes n (%)	119 (3.94)	40 (3.23)	79 (4.43)	0.114
Stroke n (%)	37 (1.22)	16 (1.29)	21 (1.18)	0.913

SBP systolic blood pressure**, DBP** diastolic blood pressure**, BMI** body mass index**, HbA1c** glycosylated hemoglobin A1c**, HDL** high density lipoprotein**, LDL** low density lipoprotein**, BUN** Blood Urea Nitrogen**, UA** uric acid

[a] P-value was calculated by ANOVA test for continuous variables and Chi-square test for categorical variables.

[b] Data for some participants were missing.

Table S2. Univariable and multivariable cox regression of risk factor of Depression

Characteristic	HR (univariable)	HR (multivariable)
Age, mean (SD)	1.00 (1.00-1.01, p=0.547)	57.0 (8.57)
Gender, n (%)		
Male	Reference	Reference
Female	1.51 (1.37-1.65, p<0.001)	1.59 (1.35-1.88, p<0.001)
Residence, n (%)		
Rural	Reference	Reference
Urban	0.71 (0.62-0.80, p<0.001)	0.75 (0.65-0.86, p<0.001)
Education, n (%)		
No formal education	Reference	Reference
Primary school	0.75 (0.68-0.83, p<0.001)	0.86 (0.78-0.96, p=0.005)
High school or above	0.54 (0.46-0.64, p<0.001)	0.72 (0.60-0.86, p<0.001)
Marital status, n (%)		
Married	Reference	Reference
Others	1.30 (1.09-1.54, p=0.004)	1.14 (0.96-1.36, p=0.143)
SBP (mmHg), mean (SD)	1.00 (1.00-1.00, p=0.087)	1.00 (1.00-1.00, p=0.664)
DBP (mmHg), mean (SD)	1.00 (1.00-1.01, p=0.431)	
BMI (kg/m2), mean (SD)	1.01 (0.99-1.02, p=0.386)	
Waist circumference (cm), median (IQR)	1.00 (0.99-1.00, p=0.205)	
Alcohol consumption, n (%)		
Never	Reference	Reference
Former	0.88 (0.73-1.07, p=0.203)	0.96 (0.79-1.17, p=0.687)
Current	0.76 (0.69-0.85, p<0.001)	0.95 (0.84-1.08, p=0.455)
Smoking status n (%)		
Never	Reference	Reference
Former	0.77 (0.64-0.93, p=0.006)	1.11 (0.90-1.38, p=0.318)
Current	0.83 (0.75-0.92, p<0.001)	1.17 (1.02-1.35, p=0.030)
Sleep time (h), n (%)		
<6	Reference	Reference
>=6	0.74 (0.68-0.82, p<0.001)	0.77 (0.70-0.84, p<0.001)

Nap time (h), median (IQR)	1.00 (1.00-1.00, p=0.010)	1.00 (1.00-1.00, p=0.083)
Hemoglobin (g/dl), mean (SD)	0.95 (0.92-0.97, p<0.001)	0.98 (0.96-1.01, p=0.252)
HbA1c, mean (SD)	1.13 (1.03-1.24, p=0.007)	1.09 (0.99-1.20, p=0.086)
HDL (mg/dl), mean (SD)	1.00 (0.99-1.00, p=0.175)	
LDL (mg/dl), mean (SD)	1.00 (1.00-1.00, p=0.697)	
BUN [b] (mg/dl), mean (SD)	0.99 (0.98-1.00, p=0.024)	0.99 (0.98-1.00, p=0.044)
UA [b] (mg/dl), mean (SD)	0.93 (0.90-0.97, p=0.002)	0.99 (0.94-1.04, p=0.594)
Serum creatinine (mg/dl), mean (SD)	0.68 (0.51-0.91, p=0.009)	1.75 (1.19-2.58, p=0.005)
CRP (mg/l), mean (SD)	1.02 (1.00-1.03, p=0.007)	1.02 (1.00-1.03, p=0.014)
WBC [b] (thousands/ul), mean (SD)	1.02 (0.99-1.05, p=0.181)	
Hypertension n (%)		
No	Reference	Reference
Yes	1.14 (1.02-1.27, p=0.021)	1.10 (0.97-1.25, p=0.129)
Kidney disease n (%)		
No	Reference	Reference
Yes	1.21 (0.99-1.47, p=0.060)	1.23 (1.01-1.50, p=0.043)
Dyslipidemia n (%)		
No	Reference	
Yes	0.87 (0.73-1.04, p=0.122)	
Arthritis n (%)		
No	Reference	Reference
Yes	1.38 (1.25-1.53, p<0.001)	1.23 (1.11-1.36, p<0.001)
Digestive disease n (%)		
No	Reference	Reference
Yes	1.18 (1.05-1.32, p=0.004)	1.11 (0.99-1.25, p=0.070)
Heart disease n (%)		
No	Reference	
Yes	1.07 (0.91-1.26, p=0.405)	
Diabetes n (%)		

No	Reference	Reference
Yes	1.29 (1.03-1.62, p=0.027)	1.11 (0.88-1.42, p=0.381)
Stroke n (%)		
No	Reference	
Yes	0.93 (0.60-1.42, p=0.723)	

Table S3. Hazard ratios of triglyceride-glucose index for Depression stratified by different factors

Subgroup	TyG Tertile, HR (**95%, CI**)			p for trend	p for interaction
	Tertile1(n=1007)	Tertile2(n=1007)	Tertile3(n=1007)		
Age					0.053
Middle age	Reference	1.04(0.90-1.20)	1.04(0.90-1.21)	<0.001	
elderly	Reference	1.20(0.98-1.47)	1.56(1.27-1.92)	<0.001	
Gender					0.058
Male	Reference	1.23(1.04-1.47)	1.19(0.99-1.42)	<0.001	
Female	Reference	0.98(0.83-1.15)	1.17(0.99-1.37)	<0.001	
Marital status					0.190
Married	Reference	1.35(0.98-1.86)	1.56(1.15-2.13)	<0.001	
Other	Reference	1.05(0.92-1.19)	1.14(1.00-1.30)	<0.001	
Education level					0.172
No formal education	Reference	1.04(0.87-1.24)	1.27(1.06-1.53)	<0.001	

Primary school	Reference	1.12(0.94-1.33)	1.07(0.90-1.28)	0.002	
High school or above	Reference	1.16(0.80-1.68)	1.54(1.06-2.22)	<0.001	
Smoking status					0.957
Never	Reference	1.09(0.94-1.27)	1.20(1.04-1.40)	<0.001	
Former	Reference	1.28(0.80-2.05)	1.29(0.82-2.05)	0.022	
Current	Reference	1.05(0.85-1.30)	1.16(0.93-1.45)	<0.001	
Drinking status					
Never	Reference	1.07(0.92-1.25)	1.23(1.05-1.43)	<0.001	0.794
Former	Reference	1.05(0.65-1.69)	1.26(0.78-2.03)	0.127	
Current	Reference	1.08(0.88-1.33)	1.08(0.87-1.34)	0.003	
Sleep time					0.563
<6	Reference	1.04(0.87-1.23)	1.12(0.94-1.33)	<0.001	
≥6	Reference	1.11(0.94-1.31)	1.26(1.07-1.48)	<0.001	
Hypertension					0.111
No	Reference	1.02(0.90-1.17)	1.15(1.00-1.31)	<0.001	
Yes	Reference	1.38(1.03-1.84)	1.41(1.07-1.86)	<0.001	
Diabetes					0.601
No	Reference	1.09(0.97-1.23)	1.19(1.06-1.35)	<0.001	
Yes	Reference	1.07(0.48-2.39)	1.11(0.54-2.30)	0.022	

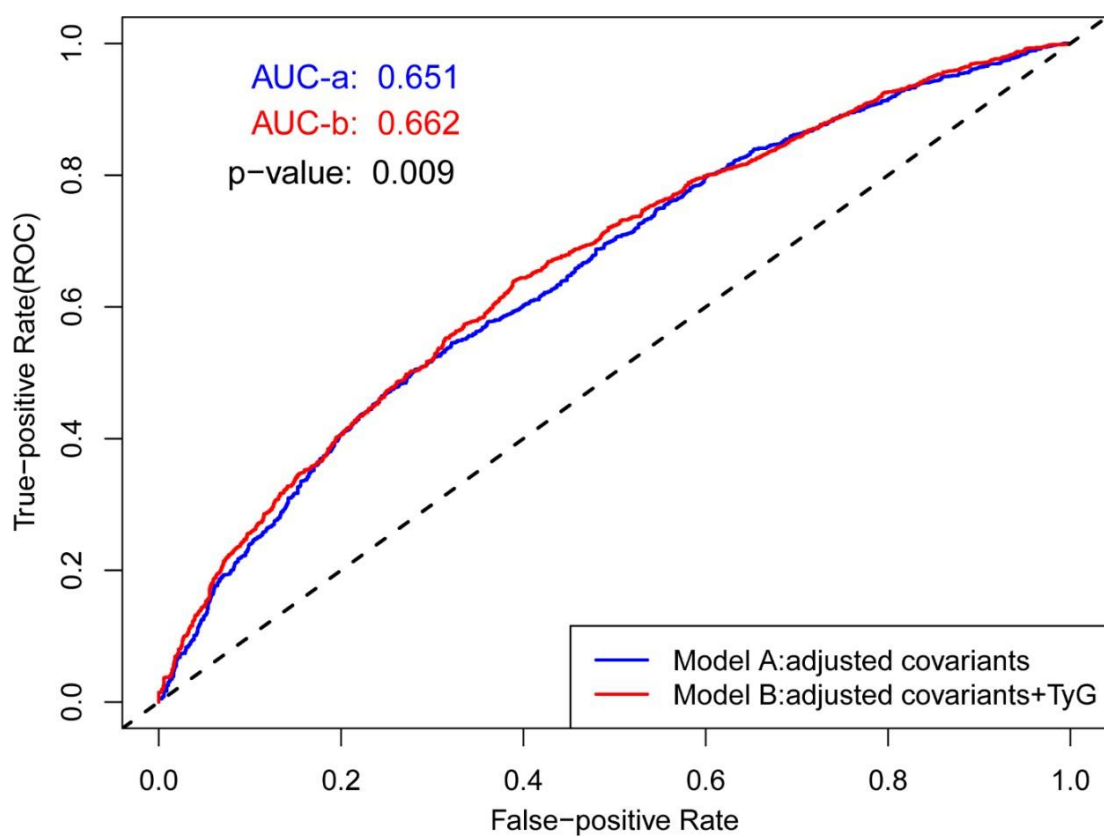| Dyslipidemia					0.792
No	Reference	1.10(0.97-1.24)	1.19(1.05-1.35)	<0.001	
Yes	Reference	0.99(0.58-1.68)	1.25(0.78-1.99)	<0.001	
Kidney disease					0.082
No	Reference	1.06(0.94-1.20)	1.21(1.07-1.37)	<0.001	
Yes	Reference	1.54(0.96-2.47)	1.04(0.62-1.75)	0.387	
Heart disease					0.807
No	Reference	1.07(0.95-1.21)	1.18(1.04-1.34)	<0.001	
Yes	Reference	1.14(0.72-1.83)	1.31(0.85-2.02)	<0.001	

Figure S1. Receiver operating characteristic curve.