We prospectively recruited 3921 participants (aged over 40 years) from the neurology department and health screening center of Qingdao Municipal Hospital from January 2014 to June 2018.

3205 participants have completed neuroimaging and laboratory examination

Excluded: participants with prior history of stroke (n=696)

Excluded:

1. Intracerebral hemorrhage; extracranial atherosclerotic stenosis; atrial fibrillation; cardiac embolism; valvular heart disease; vascular disease and had underwent replacement; (n=125)

2. Intracranial and external artery dissection; muscular fiber dysplasia; arteritis; moyamoya disease; (n=80)

3. Infection; tumor; hematologic disease; autoimmune diseases; chronic liver disease; renal disease; (n= 54)

Excluded: had been taking antiplatelet drugs (n=105)

Totally 2145 participants were finally included in the study

Excluded: participants with data values outside 4 standard deviation limits (n=11)

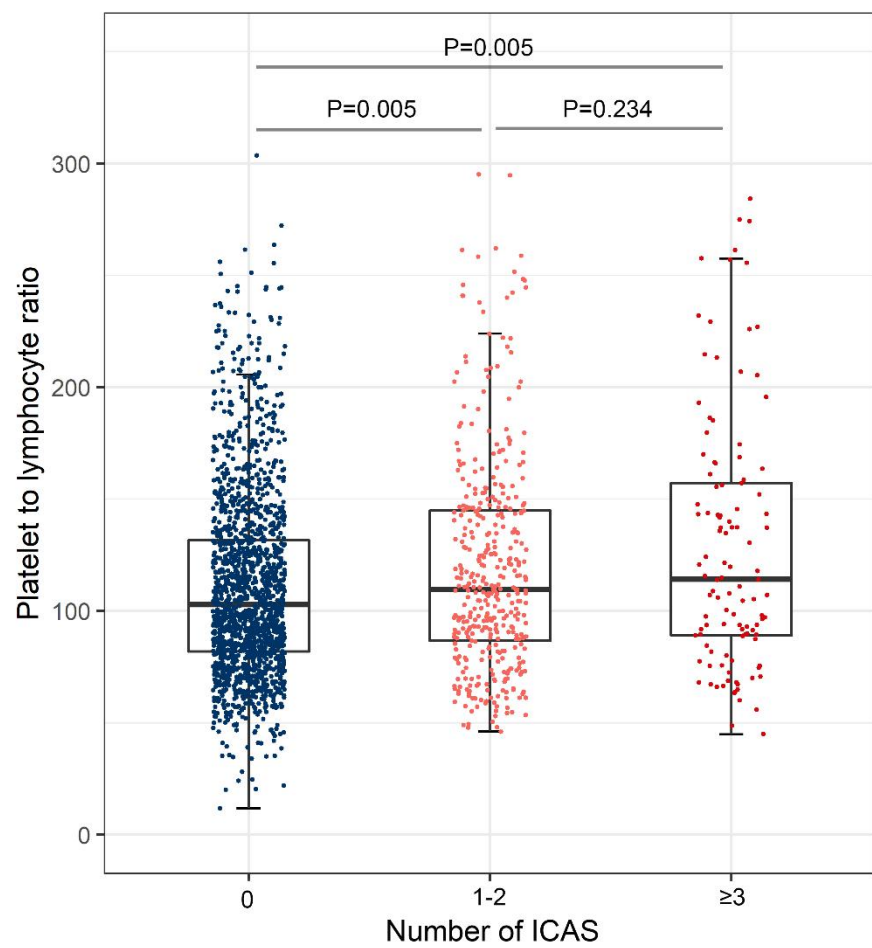Totally 2134 participants were included in this analysis

Supplementary Figure 1: Flowchart of the screening process about the included participants.

Supplementary Figure 2: Comparisons of PLR in different groups according to the number of ICAS. ICAS: Intracranial arterial stenosis; PLR: Platelet-to-lymphocyte ratio.

Supplementary Table 1: Characteristics of participants in the department of neurology and the health screening center.

	Department of neurology ($n = 1782$)	Health screening center ($n = 352$)	Statistics	P-value
Characteristics				
ICAS, *n* (%)	474 (26.6)	44 (12.5)	31.789[†]	<0.001
Age, median (IQR), years	67 (59–78)	66 (61.25–72)	−2.216[*]	0.027
Male, *n* (%)	1107 (62.1)	171 (48.6)	22.438[†]	<0.001
SBP, median (IQR), mmHg	149 (130–160)	140 (130–150.75)	−4.882[*]	<0.001
DBP, median (IQR), mmHg	84 (80–90)	80 (79.25–90)	−2.892[*]	0.004
Lipid profile, median (IQR)				

TG (mmol/L)	1.32 (0.96–1.78)	1.25 (0.89–1.75)	−2.072[*]	0.038
TC (mmol/L)	4.97 (4.21–5.81)	4.84 (4.15–5.60)	−2.075[*]	0.038
HDL (mmol/L)	1.13 (0.96–1.34)	1.16 (1.00–1.39)	−2.104[*]	0.035
LDL (mmol/L)	3.05 (2.50–3.64)	2.94 (2.39–3.48)	−2.116[*]	0.034
FBG, median (IQR), mmol/L	5.36 (4.70–6.86)	5.15 (4.60–6.37)	−3.026[*]	0.002
Platelet, median (IQR), (10^9/L)	206 (173–239)	204.5 (173–235)	−0.440[*]	0.660
Lymphocytes, median (IQR), (10^9/L)	1.95 (1.56–2.42)	1.94 (1.51–2.40)	−0.797[*]	0.425
PLR, median (IQR)	104.60 (82.19–135.64)	105.87 (82.40–139.19)	−0.530[*]	0.596
Medical history				
Hypertension, n (%)	1372 (77.0)	274 (77.8)	0.120[†]	0.729
Diabetes mellitus, n (%)	631 (35.4)	120 (34.1)	0.224[†]	0.636
CHD, n (%)	631 (35.4)	160 (45.5)	12.714[†]	<0.001
Acute ischemic stroke, n (%)	1293 (72.6)		648.085[†]	<0.001

Smoking, n (%)	641 (36.0)	87 (24.7)	16.566[†]	<0.001
Drinking, n (%)	478 (26.8)	48 (13.6)	27.523[†]	<0.001
Lipid-lowering drugs, n (%)	212 (11.9)	35 (9.9)	1.096[†]	0.295

Supplementary Table 2: Characteristics of participants in subgroups stratified by an acute ischemic stroke.

Characteristics	Stroke group (n = 1293)			Non-stroke group (n = 841)		
	ICAS (362)	Non-ICAS (931)	P(sta)	ICAS (156)	Non-ICAS (685)	P(sta)
Age, median	69 (61–78)	66 (59–76)	<0.001	72 (64–81)	67 (60–76)	<0.001

(IQR), years			(−3.578*)			(−4.461*)
Male, n (%)	226 (62.4)	619 (66.5)	0.169 (1.894†)	80 (51.3)	353 (51.5)	0.955 (0.003†)
SBP, median (IQR), mmHg	150 (138–170)	150 (131–160)	0.011 (−2.538*)	146.5 (130–160)	140 (130–150)	0.002 (−3.147*)
DBP, median (IQR), mmHg	85 (80–90)	85 (80–95)	0.804 (−0.248*)	82.50 (78.25–90)	80 (78–90)	0.432 (−0.786*)
Lipid profile, median (IQR)						
TG (mmol/L)	1.27 (0.97–1.72)	1.33 (0.98–1.84)	0.457 (−0.743*)	1.39 (0.99–1.90)	1.26 (0.89–1.73)	0.103 (−1.632*)
TC (mmol/L)	5.06 (4.25–5.93)	5.01 (4.27–5.87)	0.843 (−0.198*)	4.77 (3.82–5.81)	4.84 (4.16–5.57)	0.396 (−0.849*)
HDL (mmol/L)	1.11 (0.94–1.30)	1.14 (0.97–1.33)	0.118 (−1.562*)	1.13 (0.92–1.35)	1.15 (0.99–1.40)	0.141 (−1.471*)
LDL (mmol/L)	3.13 (2.54–3.66)	3.10 (2.58–3.71)	0.823 (−0.223*)	2.90 (2.20–3.61)	2.92 (2.40–3.47)	0.632 (−0.478*)
FBG, median (IQR),	5.77 (4.86–8.13)	5.36 (4.69–6.93)	<0.001 (−3.670*)	5.50 (4.74–7.22)	5.12 (4.63–6.05)	0.003 (−3.019*)

mmol/L						
Platelet, median (IQR), (10^9/L)	207 (172–241.25)	205 (173–241)	0.876 (−0.156*)	205 (175.50–249)	204 (172–234)	0.498 (−0.677*)
Lymphocytes, median (IQR), (10^9/L)	1.87 (1.48–2.33)	2.02 (1.61–2.47)	0.001 (−3.295*)	1.85 (1.37–2.35)	1.96 (1.55–2.42)	0.035 (−2.105*)
PLR, median (IQR)	109.06 (84.68–145.78)	101.30 (81.28–130.56)	0.005 (−2.838*)	114.18 (89.25–146.48)	103.62 (82.30–134.57)	0.017 (−2.382*)
Medical history						
Hypertension, n (%)	295 (81.5)	696 (74.8)	0.010 (6.602†)	129 (82.7)	526 (76.8)	0.109 (2.571†)
Diabetes mellitus, n	155 (42.8)	313 (33.6)	0.002 (9.549†)	69 (44.2)	214 (31.2)	0.002 (9.603†)

(%)						
CHD, n (%)	134 (37.0)	264 (28.4)	0.002 (9.175[†])	74 (47.4)	319 (46.6)	0.845 (0.038[†])
Smoking, n (%)	128 (35.4)	381 (40.9)	0.066 (3.381[†])	46 (29.5)	173 (25.3)	0.277 (1.181[†])
Drinking, n (%)	94 (26.0)	278 (29.9)	0.165 (1.928[†])	33 (21.2)	121 (17.7)	0.309 (1.034[†])
Lipid-lowering drugs, n (%)	67 (18.5)	83 (8.9)	<0.001 (23.391[†])	40 (25.6)	57 (8.3)	<0.001 (37.356[†])

Supplementary Table 3: Multivariate logistic regression analysis in subjects from two different clinical departments.

Characteristics	Department of neurology		Health screening center	
	OR (95% CI)	*P*-value	OR (95% CI)	*P*-value
Continuous	1.005 (1.002–1.007)	<0.001	1.008 (1.000–1.015)	0.039
Q1	ref		Ref	
Q2	0.971 (0.707–1.335)	0.857	1.172 (0.397–3.455)	0.774
Q3	1.115 (0.816–1.524)	0.494	1.304 (0.446–3.817)	0.628
Q4	1.642 (1.210–2.228)	0.001	3.071 (1.147–8.225)	0.026
P-value for trend	1.006 (1.003–1.009)	<0.001	1.012 (1.003–1.022)	1.010

Adjusted for age, SBP, FBG, HDL, acute ischemic stroke, diabetes mellitus, hypertension, and lipid-lowering drugs.

CI: Confidence interval; FBG: Fasting blood glucose; HDL: High-density lipoprotein; OR: Odds ratio; Q: Quartile; SBP: Systolic blood pressure.

Supplementary Table 4: Multivariate logistic regression analysis in participants who completed CRP test.

Characteristics	OR (95% CI)	*P*-value

Continuous	1.006 (1.002–1.009)	0.001
Q1	ref	
Q2	1.127 (0.720–1.766)	0.601
Q3	1.084 (0.685–1.716)	0.732
Q4	2.012 (1.295–3.125)	0.002
P-value for trend	1.007 (1.003–1.011)	<0.001

A total of 985 participants who completed the CRP test were included in this analysis.

Adjusted for age, SBP, FBG, HDL, acute ischemic stroke, diabetes mellitus, hypertension, lipid-lowering drugs, and CRP.

CI: Confidence interval; CRP: C-reactive protein; HDL: High-density lipoprotein; FBG: Fasting blood glucose; OR: Odds ratio; Q: Quartile; SBP: Systolic blood pressure.

Supplementary Table 5: Multivariable analysis of risk factors associated with ICAS in stroke and non-stroke groups.

Characteristics	Non-stroke group (*n* = 841)		Stroke group (*n* = 1293)	
	Multi-OR (95% CI)	*P*-value	Multi-OR (95% CI)	*P*-value
Age	1.029 (1.011–1.047)	0.002	1.016 (1.005–1.028)	0.004
Male	–	–	–	–
SBP	1.012 (1.003–1.022)	0.013	1.003 (0.998–1.009)	0.249
DBP	–	–	–	–
FBG, mmol/L	1.123 (1.025–1.231)	0.012	1.053 (0.995–1.115)	0.074
TG, mmol/L	–	–	–	–
TC, mmol/L	–	–	–	–
HDL, mmol/L	0.620 (0.347–1.016)	0.084	0.642 (0.426–0.920)	0.024
LDL, mmol/L	–	–	–	–

Hypertension	0.973 (0.597–1.621)	0.913	1.311 (0.945–1.835)	0.109
Diabetes	0.960 (0.593–1.530)	0.866	1.207 (0.866–1.678)	0.264
CHD	–	–	–	–
Smoking	–	–	–	–
Drinking	–	–	–	–
Lipid-lowering drugs	3.007 (1.818–4.954)	<0.001	1.890 (1.309–2.721)	<0.001
PLR	1.005 (1.001–1.009)	0.027	1.005 (1.002–1.008)	<0.001

Adjusted for age, SBP, FBG, HDL, diabetes mellitus, hypertension, and lipid-lowering drugs.

CHD: Coronary heart disease; CI: Confidence interval; DBP: Diastolic blood pressure; FBG: Fasting blood glucose; HDL: High-density lipoprotein; LDL: Low-density lipoprotein; Multi-OR: Multivariate OR; OR: Odds ratio; PLR: Platelet-to-lymphocyte ratio; SBP: Systolic blood pressure; TC: Total cholesterol; TG: Triglyceride.