

Selection of candidate variables

Clinical data of baseline evaluation of Chinese Systemic Lupus Erythematosus Treatment and Research Group (CSTAR) cohorts included 117 variables. Literature review was carried out to identify the potential predictors with sufficient evidence. Each variable was measured by a rheumatologist and cardiologist separately to determine predictive value. Both traditional risk factors of CCE and variables related to SLE were assessed and included. Finally, 21 binary candidates were selected, including male, age of SLE onset >40, obesity, hypertension, diabetes mellitus, hyperlipidemia, smoking, arthritis, serositis, oral or nasal ulcers, cutaneous involvement, nonscarring alopecia, lupus nephritis, neuropsychiatric SLE, thrombocytopenia, leukopenia, lupus anticoagulant, anticardiolipin antibodies, anti- β 2GP1 antibodies, high dose glucocorticoids, and utilization of HCQ. The definition of the 21 candidates is presented in Supplementary Table 1.

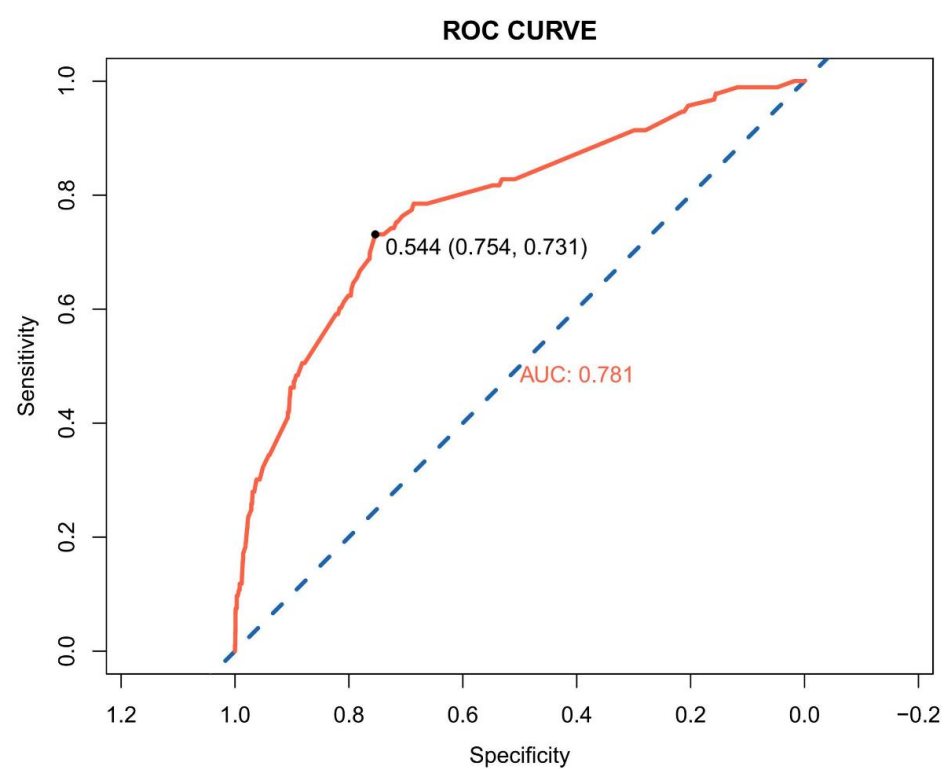
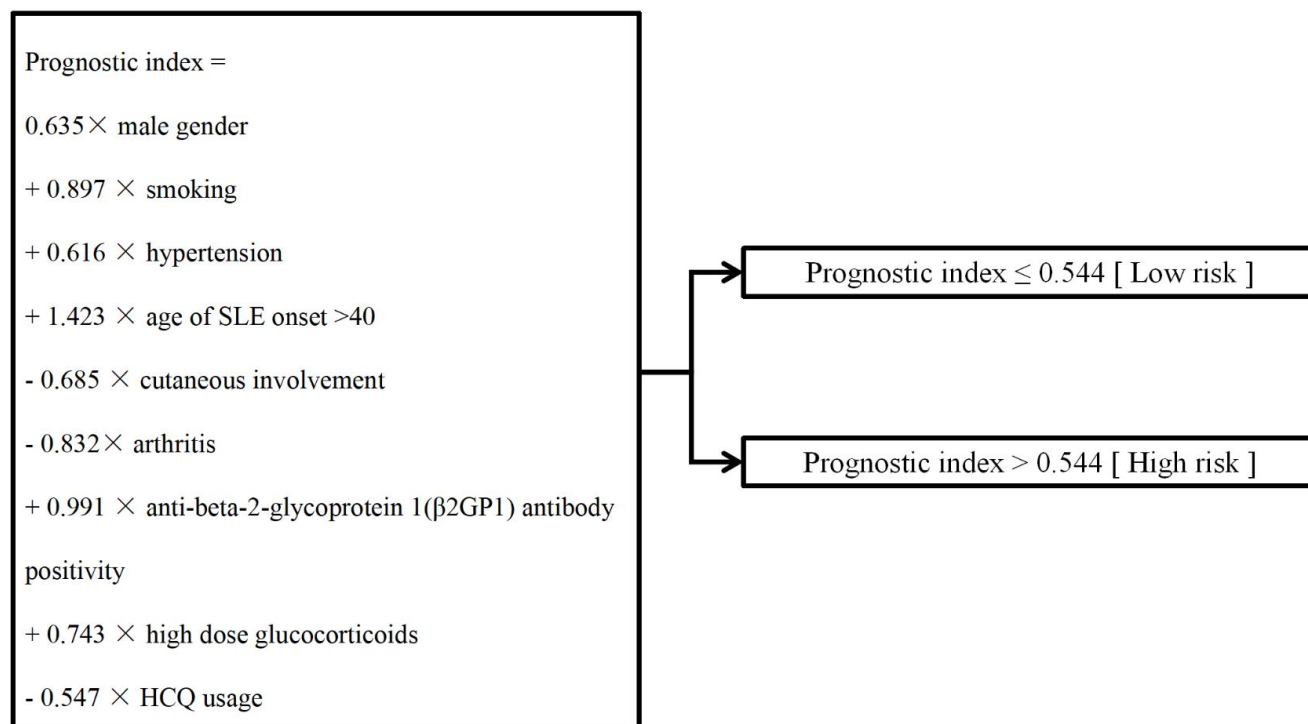
Supplementary Table 1 Definitions of the variables in this study

Variables	Definitions	Coding	
Male gender	-	Binary (male = 1, female = 0)	
Age of SLE onset >40	The age of the patients when they presented with SLE.	Binary (yes = 1, no = 0)	
Obesity	Body mass index (BMI) ≥ 28 kg/m ² .		
Hypertension	Without the use of antihypertensive drugs, more than 3 non-consecutive measurements on different days, a systolic blood pressure of ≥ 140 mmHg (or) diastolic blood pressure of ≥ 90 mmHg at baseline		
Hyperlipidemia	Total cholesterol level ≥ 5.17 mmol/L, low-density lipoprotein cholesterol (LDL-c) level ≥ 3.36 mmol/L, or triglyceride level ≥ 2.26 mmol/L ¹		
Diabetes mellitus	Diagnosed with diabetes mellitus before or at the baseline according to the American Diabetes Association (ADA) guidelines ² .		
Smoke	The patients' self-reported smoking at baseline.		
Arthritis	According to the 2012 SLICC classification criteria ³ .		
Serositis			
Oral or nasal ulcers			
Cutaneous			
Nonscarring alopecia			
Nephritis			
Neuropsychiatric SLE			
Thrombocytopenia			
Leukopenia			
LA			
ACL			
Anti- β 2GP1			
High dose glucocorticoids			A daily dose of GC prednisone equivalent ≥ 1 mg/kg/d at baseline
HCQ			Utilization of hydroxychloroquine at baseline

Supplementary Table 2 Selection of variables for the prediction model

	HR (95%CI)	P value	B coefficient
Age of SLE onset >40	4.1297 (2.6957-6.3265)	< 0.001	1.418197282
Anti β 2GP1	2.4455 (1.3459-4.4435)	0.0033	0.89426093
Arthritis	0.44373 (0.25714-0.76571)	0.0035	-0.81253799
High dose glucocorticoids	2.0266 (1.17-3.5103)	0.012	0.706374506
HCQ	0.5932 (0.3885-0.90575)	0.016	-0.522220222
Smoking	2.4781 (1.1514-5.3334)	0.02	0.907500032
Cutaneous	0.53586 (0.30246-0.94937)	0.033	-0.623886026
Hypertension	1.708 (1.0258-2.8438)	0.04	0.535327308
Male	1.8639 (1.0212-3.402)	0.043	0.622674978
Obesity	1.429 (0.83249-2.4529)	0.2	0.356971639
Thrombocytopenia	1.2121 (0.74139-1.9818)	0.44	0.192387071
LA	1.2376 (0.53792-2.8475)	0.62	0.213200297
ACL	1.1344 (0.5986-2.1498)	0.7	0.126104499

Supplementary Figure 1 Formula of the prognostic index



Supplementary Figure 2 ROC curve of the model

Reference

1. Yancy, W. S., Olsen, M. K., Guyton, J. R., Bakst, R. P. & Westman, E. C. A low-carbohydrate, ketogenic diet versus a low-fat diet to treat obesity and hyperlipidemia: a randomized, controlled trial. *Ann Intern Med* **140**, 769–777 (2004).
2. American Diabetes Association. (2) Classification and diagnosis of diabetes. *Diabetes Care* **38 Suppl**, S8–S16 (2015).
3. Petri, M. *et al.* Derivation and validation of the Systemic Lupus International Collaborating Clinics classification criteria for systemic lupus erythematosus. *Arthritis Rheum* **64**, 2677–2686 (2012).