

Supplementary Table S1. Critical characteristics in the unmatched and propensity-score matched cohorts.

	Unmatched cohort			Matched cohort		
	SLE cohort (n=432)	Control diseases cohort (n=1443)	p-value	SLE cohort (n=432)	Control diseases cohort (n=430)	p-value
Age (years), median [IQR]	38 [29,50]	58.000 [49,67]	<0.001	38 [29,50]	44 [34,49]	0.148
Gender						
Male	73 (16.9%)	441 (30.6%)	<0.001	73 (16.9%)	73 (17.0%)	0.975
Female	359 (83.1%)	1002 (69.4%)		359 (83.1%)	357 (83.0%)	

Values are presented as median (IQR) for continuous variables or n (%) for binary variables. Unmatched cohort refers to whole sample (n=1875), matched cohort refers to propensity score matched (PSM) patients (n=862).

Supplementary Table S2. The coefficients of Lasso regression analysis

Variables	Coefficients	Variables	Coefficients
age	0	APTR	0
24hrUpr (g/24h)	0	APTT (s)	0
neutrophil count (10 ⁹ /L)	-0.005	CL (mmol/L)	0
D-D (mg/L)	0	TP (g/L)	-0.008
CRP (mg/L)	0	P (mmol/L)	0
IgM (g/L)	-0.163	ALP (IU/L)	0
IgG (g/L)	0	DBIL (μmol/L)	0
IgA (g/L)	0.043	WBC (10 ⁹ /L)	0
LDL (mmol/L)	0	U-WBC (/μl)	0
LDH (IU/L)	0	RBC (10 ⁹ /L)	0
PA(mg/L)	0	U-RBC (/μl)	0
TT(s)	0.189	ESR (mm/1h)	0.001
PTA (%)	0.018	RDW (%)	0
PTR	0	PCHE (IU/L)	0
PT (s)	0	CK (IU/L)	0
Monocyte count (10 ⁹ /L)	0	GLU (mmol/L)	0
INR	0	HCT (%)	0
Urea (mmol/L)	0	HGB (g/L)	0
UA (μmol/L)	0.002	PLT (10 ⁹ /L)	0
TBIL (μmol/L)	0	PCT(%)	0
TBA (μmol/L)	0	Cr (μmol/L)	0
TCHO (mmol/L)	0	AST (IU/L)	0
MCV (fl)	0	GGT (IU/L)	0
MCHC (g/L)	0.003	ALT (IU/L)	0
MCH (pg)	0	HDL (mmol/L)	0
Pathological cast (/LP)	0.028	Mg (mmol/L)	0
TG (mmol/L)	0	K (mmol/L)	0
lymphocyte count (10 ⁹ /L)	0	Na (mmol/L)	0
		Ca (mmol/L)	0

24hrUpr: 24-hour urine protein; ALP: alkaline phosphatase; ALT: alanine aminotransferase; APTT: activated partial thromboplastin time; APTR: activated partial thromboplastin time ratio; AST: aspartate amino transferase; Ca: calcium; CK: creatine kinase; CL: chlorine; Cr: creatinine; CRP: C-reactive protein; DBIL: direct bilirubin; D-D: d dimer; ESR: erythrocyte sedimentation rate; GLU: glucose; GGT: gamma-glutamyl transpeptidase; HCT: haematocrit; HDL: high-density lipoprotein; HGB: haemoglobin concentration; INR: international normalised ratio; K: kalium; LDH: lactic dehydrogenase; LDL: low density lipoprotein; IgA: immunoglobulin A; IgG: immunoglobulin G; IgM: immunoglobulin M; MCH: mean corpuscular haemoglobin content; MCHC: mean corpuscular haemoglobin concentration; MCV: mean corpuscular volume; Mg: magnesium; Na: natrium; P: phosphorus; PA: prealbumin; PCHE: cholinesterase; PCT: platelet haematocrit; PLT: blood platelet count; PT: prothrombin time; PTA: prothrombin activity; PTR: prothrombin time ratio; RBC: red blood cell; RDW: red blood cell distribution width; SD: standard deviation; TBA: total bile acid; TBIL: total bilirubin; TCHO: total cholesterol; TG: triglyceride; TP: total protein; TT: thrombin time; UA: uric acid; U-GLU: urine glucose; WBC: white blood cell.

Supplementary Table S3. Baseline clinical and biochemical characteristics of patients in external validation cohort.

Characteristic	SLE cohort (n=97)	Control diseases cohort (n=101)	p-value
Age (years), median[IQR]	42.000 [31.000,51.000]	44.000 [34.000,51.000]	0.733
Gender			
Male	18 (18.6%)	19 (18.81%)	0.963
Female	79 (81.4%)	82 (81.19%)	
Labortary test			
Biochemical indexes			
LDH (IU/L), median[IQR]	207.000 [171.000,251.000]	202.000 [161.000,255.000]	0.811
TP(g/L), median[IQR]	68.700 [58.400,72.500]	66.883 [62.400,71.900]	0.535
PA(mg/L), mean(±SD)	225.341±93.483	209.980±75.491	0.208
Urea(mmol/L), median[IQR]	6.400 [4.990,10.340]	4.900 [3.940,8.170]	0.004**
UA (µmol/L), median[IQR]	372.000 [287.000,463.000]	315.000 [227.000,419.000]	0.011*
TCHO (mmol/L), median[IQR]	4.610 [3.690,5.300]	4.240 [3.770,5.400]	0.728
TBA (µmol/L), median[IQR]	4.200 [2.400,6.300]	3.600 [2.090,6.700]	0.667
TBIL (µmol/L), median[IQR]	9.200 [6.900,12.900]	8.800 [5.900,12.600]	0.497
DBIL (µmol/L), median[IQR]	1.060 [0.400,2.000]	1.020 [0.430,1.980]	0.92
ALP (IU/L), median[IQR]	68.000 [54.000,96.000]	71.000 [58.000,107.000]	0.273
CK (IU/L), median[IQR]	56.826 [37.000,98.000]	56.000 [35.000,91.000]	0.512
PCHE (IU/L), median[IQR]	6564.000 [4676.000,7901.000]	7604.000 [5537.000,9245.000]	0.017*
ALT (IU/L), median[IQR]	17.000 [12.000,28.000]	15.000 [10.000,24.000]	0.254
GGT (IU/L), median[IQR]	21.000 [14.000,38.000]	21.000 [12.000,34.000]	0.451
AST (IU/L), median[IQR]	21.000 [15.000,29.000]	20.000 [16.000,25.000]	0.555
Cr (µmol/L), median[IQR]	101.000 [70.600,205.000]	76.100 [62.900,114.139]	0.004
HDL (mmol/L), median[IQR]	1.110 [0.910,1.380]	1.110 [0.910,1.341]	0.809
LDL (mmol/L), median[IQR]	2.640 [2.120,3.410]	2.570 [2.000,2.990]	0.259
TG (mmol/L), median[IQR]	1.610 [1.050,2.290]	1.500 [0.950,2.590]	0.821
GLU(mmol/L), median[IQR]	5.500 [4.650,7.010]	5.410 [4.620,6.210]	0.47
CL (mmol/L), median[IQR]	105.100 [102.600,107.600]	104.300 [101.238,106.900]	0.126
Ca (mmol/L), median[IQR]	2.260 [2.090,2.320]	2.230 [2.090,2.330]	0.969
P (mmol/L), mean(±SD)	1.186±0.273 1.174±0.313		0.761
Na (mmol/L), median[IQR]	139.800 [137.300,141.500]	138.700 [137.000,140.400]	0.135
K (mmol/L), median[IQR]	3.810 [3.590,4.130]	3.820 [3.500,4.200]	0.904
Mg (mmol/L), median[IQR]	0.880 [0.830,0.920]	0.870 [0.800,0.960]	0.704
CRP (mg/L), median[IQR]	3.676 [2.003,6.810]	3.370 [2.080,7.617]	0.968
Haematologic indexes			
TT (s), median[IQR]	15.900 [15.000,17.200]	15.300 [14.600,16.400]	0.02
PT (s), median[IQR]	10.500 [9.900,11.300]	11.300 [10.700,12.200]	<0.001
PTR, median[IQR]	1.000 [0.940,1.090]	1.100 [1.020,1.170]	<0.001
PTA (%), median[IQR]	100.350 [89.000,114.000]	87.000 [78.000,101.000]	<0.001
APTT (s), median[IQR]	32.000 [29.200,35.500]	32.700 [29.600,35.400]	0.472
APTTR, median[IQR]	1.080 [0.970,1.170]	1.110 [1.000,1.200]	0.359
INR, median[IQR]	1.000 [0.940,1.090]	1.100 [1.020,1.160]	<0.001
D-D (mg/L), median[IQR]	0.310 [0.120,0.740]	0.210 [0.090,0.580]	0.151
WBC (10 ⁹ /L), median[IQR]	6.600 [5.100,9.320]	6.800 [5.100,9.700]	0.668
neutrophil count (10 ⁹ /L), median[IQR]	5.000 [2.900,7.300]	3.700 [2.700,5.700]	0.047
Monocyte count (10 ⁹ /L), median[IQR]	0.300 [0.290,0.500]	0.400 [0.300,0.500]	0.013
lymphocyte count (10 ⁹ /L), median[IQR]	1.540 [1.070,1.944]	1.510 [1.020,2.200]	0.88
RBC (10 ⁹ /L), median[IQR]	4.390 [3.630,4.730]	4.180 [3.740,4.780]	0.775
HGB (g/L), mean(± SD)	121.845±27.120	122.474±26.168	0.869
HCT (%), mean(± SD)	35.346±7.661	35.520±7.535	0.873
MCH (pg), median[IQR]	30.100 [28.900,31.400]	30.000 [28.600,31.000]	0.368
MCHC (g/L), median[IQR]	331.000 [324.000,339.000]	330.000 [324.000,336.000]	0.195
MCV (fl), median[IQR]	91.200 [87.100,94.400]	90.000 [87.200,93.700]	0.46
PLT (10 ⁹ /L), median[IQR]	222.000 [175.000,277.000]	203.000 [163.000,249.000]	0.137
PCT(%), median[IQR]	0.220 [0.190,0.258]	0.218 [0.170,0.250]	0.293
RDW (%), median[IQR]	13.600 [13.000,14.900]	14.000 [13.100,14.800]	0.408
ESR (mm/1h), median[IQR]	17.232 [9.701,42.049]	27.000 [10.000,49.931]	0.251
Immunology indexes			
IgG (g/L), median[IQR]	13.300 [7.550,18.900]	13.100 [10.500,16.600]	0.612
IgM (g/L), median[IQR]	0.770 [0.540,1.250]	1.060 [0.650,1.530]	0.002
IgA (g/L), median[IQR]	2.550 [1.810,3.600]	2.120 [1.460,3.396]	0.106

Characteristic	SLE cohort (n=97)	Control diseases cohort (n=101)	p-value
Urine indexes			
24hrUpr (g/24h), median[IQR]	1.780 [0.580,4.770]	1.560 [0.725,2.363]	0.188
Pathological cast (/LP), median[IQR]	0.298 [0.000,0.852]	0.300 [0.000,0.800]	0.498
U-WBC (/μl), median[IQR]	9.500 [2.900,32.500]	12.100 [3.100,31.300]	0.676
U-RBC (/μl), median[IQR]	10.300 [4.400,55.200]	10.830 [5.000,34.700]	0.98
U-GLU			
-	87 (89.7%)	92 (91.1%)	0.216
1/2+	4 (4.1%)	2 (1.0%)	
+	0 (0.0%)	4 (4.0%)	
++	2 (2.1%)	1 (1.0%)	
+++	2 (2.1%)	0 (0.0%)	
++++	2 (2.1%)	2 (2%)	
U-URO			
-	88 (90.7%)	94 (93.1%)	0.751
+	6 (6.2%)	5 (5.0%)	
++	2 (2.1%)	2 (2.0%)	
+++	1 (1.0%)	0 (0.0%)	

Values are presented as median (IQR) for continuous variables or n (%) for binary variables, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

24hrUpr: 24-hour urine protein; ALP: alkaline phosphatase; ALT: alanine aminotransferase; APTT: activated partial thromboplastin time; APTTR: activated partial thromboplastin time ratio; AST: aspartate amino transferase; Ca: calcium; CK: creatine kinase; CL: chlorine; Cr: creatinine; CRP: C-reactive protein; DBIL: direct bilirubin; D-D: d dimer; ESR: erythrocyte sedimentation rate; GLU: glucose; GGT: gamma-glutamyl transpeptidase; HCT: haematocrit; HDL: high-density lipoprotein; HGB: haemoglobin concentration; INR: international normalised ratio; K: kalium; LDH: lactic dehydrogenase; LDL: low density lipoprotein; IgA: immunoglobulin A; IgG: immunoglobulin G; IgM: immunoglobulin M; MCH: mean corpuscular haemoglobin content; MCHC: mean corpuscular haemoglobin concentration; MCV: mean corpuscular volume; Mg: magnesium; Na: natrium; P: phosphorus; PA: prealbumin; PCHE: cholinesterase; PCT: platelet haematocrit; PLT: blood platelet count; PT: prothrombin time; PTA: prothrombin activity; PTR: prothrombin time ratio; RBC: red blood cell; RDW: red blood cell distribution width; SD: standard deviation; TBA: total bile acid; TBIL: total bilirubin; TCHO: total cholesterol; TG: triglyceride; TP: total protein; TT: thrombin time; UA: uric acid; U-GLU: urine glucose; U-RBC: urinary red cell count; U-URO: urine urobilinogen; U-WBC: urinary white blood cell count; WBC: white blood cell.