

Lipid management in systemic lupus erythematosus according to risk classifiers suggested by the European Society of Cardiology and disease-related risk factors reported by the EULAR recommendations

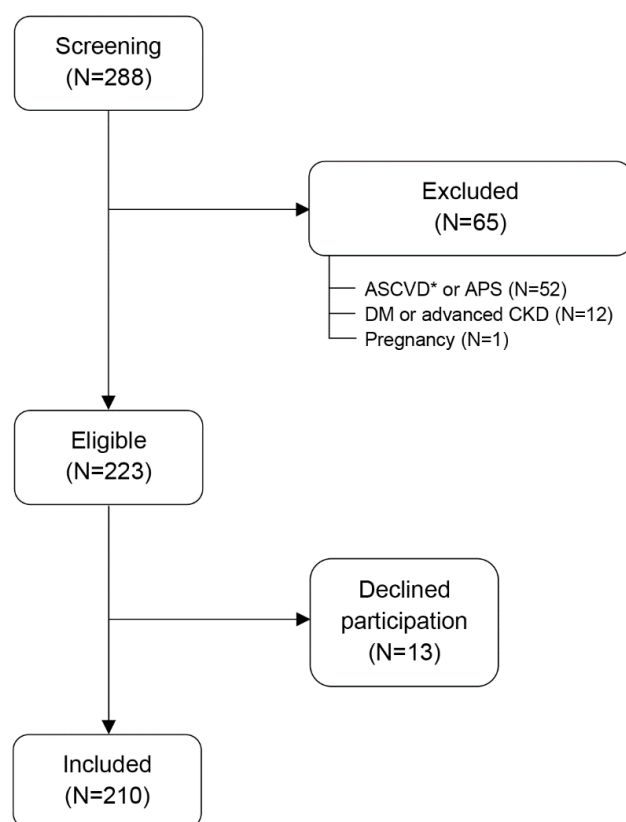
George C. Drosos, George Konstantonis, Petros P. Sfikakis, and Maria G. Tektonidou

Supplemental data

Supplementary Methods

Study population

Two-hundred eighty-eight consecutive systemic lupus erythematosus (SLE) patients followed-up at the Rheumatology Unit's outpatient clinic were screened for enrollment in the study. After excluding patients with atherosclerotic cardiovascular disease, definite antiphospholipid syndrome, diabetes mellitus, advanced kidney disease, or pregnancy, 223 patients were invited to participate. Thirteen patients declined participation. A total of 210 patients were included in the study. Supplementary Figure S1 shows the patient selection process.



Supplementary Figure S1

Patient selection flowchart. *Clinically documented atherosclerotic coronary artery disease, cerebrovascular disease, or lower extremity peripheral artery disease. ASCVD, atherosclerotic cardiovascular disease; APS, antiphospholipid syndrome; DM, diabetes mellitus; CKD, chronic kidney disease.

Supplementary Results**Supplementary Table S1**

Baseline characteristics of SLE patients (N=210)

	Patients with atherosclerotic plaques (n=49)	Patients without atherosclerotic plaques (n=161)	p-value
Demographics			
Age, years, mean (S.D.)	55.9 ± 10.1	41.5 ± 10.4	<0.001
Women, %	91.8	93.8	0.631
Traditional cardiovascular risk factors			
Systolic blood pressure, mm Hg, median (IQR)	123 (117–133)	115 (107–123)	<0.001
Diastolic blood pressure, mm Hg, median (IQR)	77 (69–82)	73 (67–79)	0.095
Total cholesterol, mg/dL, median (IQR)	200 (169–226)	178 (154–206)	0.005
LDL-cholesterol, mg/dL, median (IQR)	113 (94–142)	103 (85–125)	0.019
HDL-cholesterol, mg/dL, median (IQR)	61 (45–71)	57.5 (49–68.4)	0.868
Triglycerides, mg/dL, median (IQR)	108 (74–142)	79 (57–114)	0.003
Smoking, current, %	53.1	35.4	0.027
BMI, kg/m ² , median (IQR)	26.4 (23.4–29)	23.7 (21.1–28.1)	0.021
SCORE class			
Low risk, %	32.7	83.9	<0.001
Moderate risk, %	46.9	12.4	<0.001
High risk, %	20.4	3.7	0.001
Very-high risk, %	0	0	–
Disease-related cardiovascular risk factors			
Disease duration, years, median (IQR)	10 (4–16)	6 (2–12)	0.009
SLEDAI-2K, median (IQR)	2 (0–4)	2 (0–4)	0.938
LLDAS, %	68.6	64.7	0.672
Glucocorticoids, cumulative dose, g, median (IQR)	11.4 (1.3–20.7)	4.9 (0.5–13.3)	0.032
Antiphospholipid antibody positivity, %	20.4	18	0.706
Medications, current use			
Statins, %	16.3	8.1	0.092

Antihypertensives, %	46.9	25.5	0.004
Antiplatelets, %	18.4	22.4	0.551
Glucocorticoids, %	63.3	50.9	0.129
Hydroxychloroquine, %	83.7	83.9	0.976
Immunosuppressants, %	42.9	39.1	0.641
Ultrasound evidence of subclinical atherosclerosis			
Carotid plaques, isolated, %	38.8	–	–
Femoral plaques, isolated, %	16.3	–	–
Carotid and femoral plaques, %	44.9	–	–

SLE, systemic lupus erythematosus; BMI, body mass index; SCORE: Systematic Coronary Risk Evaluation;

SLEDAI-2k: Systemic Lupus Erythematosus Disease Activity Index-2000.

Supplementary Table S2

Optimal cut-off and performance characteristics of cumulative glucocorticoid dose to predict the presence of atherosclerotic plaques in SLE patients at low and moderate SCORE risk not receiving lipid-lowering therapy (N=174)

Optimal cut-off	≥11 g
Performance measures	
AUC (95% CI)	0.65 (0.57–0.72)
Sensitivity, % (95% CI)	62.5 (43.7–78.9)
Specificity, % (95% CI)	64 (42.5–82)
Positive predictive value, % (95% CI)	73.9 (65.9–80.9)
Negative predictive value, % (95% CI)	72.5 (64.6–79.5)

SLE, systemic lupus erythematosus; SCORE, Systematic Coronary Risk Evaluation; AUC, area under the curve.

Supplementary Table S3

Multivariate analysis of disease-related cardiovascular risk classifiers for the presence of atherosclerotic plaques in patients with systemic lupus erythematosus at low or moderate SCORE class not receiving lipid-lowering treatment (N=174)

	Carotid plaque		Carotid or femoral plaque	
	OR (95% CI)*	p-value	OR (95% CI)*	p-value
Disease duration ≥10 years	0.41 (0.08–2.07)	0.281	0.73 (0.17–3.15)	0.670
Cumulative glucocorticoid dose ≥11 g	4.73 (1.09–20.47)	0.038	4.80 (1.12–20.62)	0.035
Failure to achieve LLDAS	1.32 (0.32–5.35)	0.700	0.75 (0.19–2.94)	0.680
aPL positivity	0.73 (0.11–4.72)	0.741	1.17 (0.19–7.10)	0.866

*After adjusting for SCORE variables, i.e. age ($p < 0.001$), gender (not significant), systolic blood pressure (not significant), total cholesterol (not significant), and current smoking ($p = 0.007$ for carotid plaques and 0.009 for carotid or femoral plaques).

SCORE, Systematic Coronary Risk Evaluation; LLDAS, lupus low disease activity state; aPL, antiphospholipid antibodies.