Environmental and atmospheric data was obtained from the EPA, including PM2.5 and ozone concentration, temperature, residual wind, relative humidity, and barometric pressure. The average values of each factor 10 days prior to patient visit was calculated. Univariate and multivariate models were built in order to study the association of these variables with lupus disease activity. The models were adjusted for age, sex, income, racial distribution, and rural vs. urban patient residence. Multivariate logistic regression was used to identify significant determinants associated with lupus flares. Regression was performed for each organ flare outcome. Regression inference was based on generalized estimating equations (GEE) to account for the time repeated outcomes.

Results Rash, serositis, hematologic, and joint flares were statistically significantly associated ($p<0.00.5$) with an increase in temperature in univariate and multivariate analysis. Renal flares were negatively associated with increases in temperature ($p<0.05$) in univariate and multivariate analysis.

PM2.5 concentration was significantly associated ($p<0.001$) with rash, joints, serositis, neurologic, pulmonary, and hematologic flares in univariate and multivariate analysis.

Ozone concentration, residual wind, and relative humidity were significantly associated with lupus flares in univariate analysis only, while barometric pressure had no associations.

Conclusions There is a strong association between changes in PM2.5 concentration and temperature 10 days prior to patient visit and organ specific lupus activity at the visit. These data could add an important aspect to lupus trials, the outcomes of which may be affected by so far unrecognized environmental factors, and ultimately it could allow predictive modelling of lupus flares which would revolutionize the approach to treatment.

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298 CARDIOVASCULAR RISK FACTORS IN A SYSTEMIC LUPUS ERYTHEMATOSUS COHORT FORM COLOMBIA

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Background Systemic lupus erythematosus (SLE) is a chronic and multisystemic autoimmune disease. Higher prevalence of traditional and disease associated risk factors, such as corticosteroids and accelerated atherosclerosis due to chronic inflammation, result in an increased cardiovascular risk. Age and

Abstract 298 Table 1 Bivariate model with cardiovascular risk as dependent variable

Variable	Crude OR	IC 95%	P value
Age in years			
36 - 45	1,7	1,13 - 2,64	0,001
46 - 55	3,5	2,41 - 5, 06	0,001
56 - 65	8,2	5,44 - 12,55	0,001
>66	12,3	7,00 - 21,82	0,001
Civil status			
Married	0,9	0,74 - 1,22	0,733
Single	1,2	1,05 - 1,59	0,01
Education years			
0 - 5	1		
6 - 11	2,9	2,07 - 4,22	0,001
>12	1,6	1,23 - 2,25	0,001
Positive ds-DNA	0,7	0,57 - 0,96	0,025
Hypocomplementemia	0,6	0,51 - 0,85	0,001
Antimalarial use			
Chloroquine	0,81	0,62 - 1,05	0,11
Hydroxychloroquine	0,85	0,62 - 1,16	0,31
Years of antimalarial use			
1 - 5	0,91	0,64 - 1,29	0,61
6 - 10	0,47	0,34 - 0,64	0,001
>11	0,44	0,31 - 0,63	0,001
Other medication			
Corticosteroids	2,2	1,32 - 3,80	0,02
Cyclophosphamide	0,5	0,24 - 1,33	0,19
Mycophenolate	1,1	0,64 - 2,06	0,62
Rituximab	1,3	0,49 - 3,47	0,58

corticosteroid use have been described as cardiovascular risk factors but there is controversy surrounding antimalarials as a protective factor. Our objective is to analyze associated factors with the presentation of cardiovascular events such as high blood pressure (HBP), acute myocardial infarction (AMI), stroke and thromboembolic disease (TED)

Methods A cross-sectional study was done with 1175 records of patients with SLE that fulfilled either ACR 1997 of SLICC 2012 classification criteria that had been in medical care between 2015 and 2017 in a rheumatology specialized institution in six cities of Colombia. We describe sociodemographic, clinical and immunoserological characteristics and a comparative analysis was done with chi2 and Mann Whitney's U with a combined outcome of cardiovascular disease obtaining an OR of crude associations that were adjusted for several variables

Results Women represented 91% of the cohort with a median age of 44 years (IQR 21) and 8 years of disease duration (IQR 11) with a mean age at diagnosis of 32 years, 5,4% were active smokers and 15% had smoked in the past. Cardiovascular events were found in 32% of the patients with HT as the most common. Other cardiovascular outcomes such as stroke, TED and AMI were infrequent with a prevalence of 3.3%, 2.9% and 2% respectively. In bivariate analysis, age >36 years and corticosteroid use were associated with a significantly higher risk, while the use of antimalarials for more than 6 years was found to protect for cardiovascular risk with no difference between chloroquine and hydroxychloroquine use (table 1)

Conclusions Our cohort is comparable with other SLE cohorts regarding the frequency of cardiovascular events. Up to 32% of the described population presented a cardiovascular event and arterial hypertension was the most frequent. Continuous use of antimalarials for more than 6 years has a protective effect against cardiovascular events such as arterial hypertension, stroke, acute myocardial infarction and thromboembolic disease. The benefit seen only after 6 years of continuous use probably reflects the need of a long period of time before some of the potential benefits of these medications are seen

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299 INCREASED MORTALITY AMONG PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AFTER HYDROXYCHLOROQUINE DISCONTINUATION

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Background Hydroxychloroquine (HCQ) is near-universally recommended for patients with SLE. Use of this medication has previously been associated with a substantial survival benefit among SLE patients. We aimed to determine the potential temporal association between HCQ discontinuation and all-cause and cardiovascular disease (CVD) mortality.

Methods We conducted a population-based case-control study using an administrative health database including the entire population in the province of British Columbia, Canada (>5 million individuals). We identified cases with SLE who died and each case was matched on age, sex, and SLE disease duration with living controls with SLE. We used conditional logistic regression to assess the association between current use of HCQ or recent discontinuation of HCQ and the risk of all-cause and cause-specific mortality relative to remote HCQ users. Remote users were defined by a duration greater than 365 days between the last HCQ prescription and the index date (i.e., death date). Recent users had a duration less than 365 days since the last HCQ prescription and index date. Current users had active HCQ prescriptions spanning

Abstract 299 Table 1 Risk of Death with Current Usage, Non-Usage, and Recent Discontinuation compared with Remote Usage of Hydroxychloroquine among patients with Systemic Lupus Erythematosus

All-Cause Mortality	Cases, N	Controls, N	Crude Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
Remote HCQ Users	72	106	1.0 (reference)	1.0 (reference)
Recent HCQ Discontinuers	65	34	3.03 (1.77-5.17)	3.78 (2.07-6.91)
Current HCQ users	32	156	0.30 (0.18-0.49)	0.35 (0.20-0.59)
HCQ Non-users	121	206	0.83 (0.55-1.24)	0.93 (0.59-1.44)
Cardiovascular Disease Mortality				
Remote HCQ Users	17	28	1.0 (reference)	1.0 (reference)
Recent HCQ Discontinuers	17	11	2.57 (0.96-6.92)	4.63 (1.31-16.42)
Current HCQ users	9	44	0.32 (0.12-0.87)	0.37 (0.11-1.27)
HCQ Non-users	40	59	1.11 (0.51-2.44)	1.15 (0.45-2.99)
Other Cause Mortality				
Remote HCQ Users	35	52	1.0 (reference)	1.0 (reference)
Recent HCQ Discontinuers	33	18	3.17 (1.45-6.93)	3.90 (1.56-9.75)
Current HCQ users	13	72	0.28 (0.14-0.58)	0.32 (0.14-0.71)
HCQ Non-users	57	95	0.89 (0.49-1.64)	1.18 (0.29-2.37)