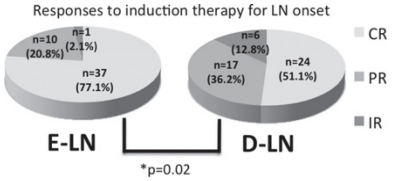
developed as a flare of systemic lupus erythematosus (SLE) after treating the prior non-renal SLE conditions successfully (delayed, D-LN) and LN manifesting at the time of SLE onset (early, E-LN).[1)] More frequent flares and higher serum titers of anti-dsDNA antibody during the LN flares were observed in D-LN than E-LN groups, suggesting that D-LN may reflect intractable SLE conditions. However, we had not analyzed whether there is a difference in the response to treatment between the two groups.

Objectives: This study investigated possible differences in the response to induction therapy between E-LN and D-LN.

Methods: We retrospectively examined 95 LN (48 E-LN, 47 D-LN) patients who attended our hospital between January 1991 and May 2016. All of them were diagnosed with SLE according to the American College of Rheumatology criteria and were shown to have LN on renal biopsy. First, we compared the clinical features of E-LN and D-LN, such as sex, age at SLE and LN onset, urinary protein, serum creatinine, serum anti-dsDNA titer, serum C3, prevalence of serum anti-Sm, renal biopsy histological types and induction therapy options at LN onset. Then we compared the response to therapy at 24 weeks for LN onset and flares between the two groups. The response to treatment was classified into complete response [CR; urine protein to creatinine ratio $<$50 mg/mmol and normal or near-normal (within 10%)GFR], partial response [PR; $\geq$50% reduction in proteinuria to sub-nephrotic levels and (near-) normal GFR], and insufficient response [IR; anything else]. We analyzed the data using chi-square test, Fisher's exact test and the Mann–Whitney *U*-test. We further evaluated predictors of treatment response at LN onset using univariate and forward stepwise multivariate Cox regression analysis.

Results: Higher serum C3 (56.4±22.4 *vs.* 46.3±22.7 mg/dl, p=0.03) were observed in D-LN groups. The proportion of histological types (I or II/III or III+V/IV or IV+V/V: 6/7/26/9 *vs.* 4/5/26/12, p=0.77) and induction therapy options at LN onset were similar between the two groups. However, the response to the therapy for LN onset was better in E-LN than D-LN (CR/PR/IR: 37/10/1 *vs.* 24/17/6, p=0.02) (Fig). Univariate Cox regression analysis indicated that severe proteinuria, elevated serum creatinine, class IV or IV+V on renal biopsy and D-LN were associated with non-CR (PR+IR) to induction therapy for LN onset ($p<0.05$). Multivariate Cox regression analysis including variables identified as significant in univariate analyses showed that severe proteinuria [hazard ratio (HR) 1.35, p=0.007] and D-LN [HR 4.96, p=0.003] were independent predictors of non-CR to the induction therapy. LN flares were observed in 13/48 E-LN and 20/47 D-LN patients, and IR was observed in 15.4% (2/13) of E-LN and 40.0% (8/20) of D-LN patients.



Conclusions: In this study, the relatively poorer treatment response was observed in D-LN compared with E-LN patients and D-LN was a predictor of poorer treatment response independent of renal histology and the severity of nephritis at LN onset.

References:

[1] Nakano M, et al. Different clinical features, serological profiles and activities in two onset categories of lupus nephritis. EULAR 2016 congress London, SAT 0313.

Disclosure of Interest: None declared

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THU0252 NAILFOLD CAPILLAROSCOPY IN SYSTEMIC LUPUS ERYTHEMATOSUS: A SYSTEMATIC REVIEW AND CRITICAL APPRAISAL

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Background: Systemic lupus erythematosus (SLE) is a rheumatic disease with common vascular involvement. Nailfold capillaroscopic changes have been described in SLE. Although, until today there is no clear role yet for capillaroscopy in classifying or staging the disease.

Objectives: To systematically review and critically appraise the literature on capillaroscopic changes described in SLE.

Methods: A sensitive search, on behalf of the EULAR study group on microcirculation in Rheumatic Diseases, was developed in Web Of Science, PubMed and Embase to identify all original research studies in which SLE patients had capillaroscopy. Two reviewers identified titles, abstracts and full texts. Exclusion criteria were: ACR criteria for SLE were not met, less than 5 patients were included in the study, there was no information on capillaroscopy in SLE, no original research or non-English language. All included articles underwent quality appraisal. Results were summarised according to density, dimensions, morphology, haemorrhages, semi quantitative assessment, qualitative assessment (see table) and correlation of capillaroscopic changes with clinical and laboratory parameters.

Results: From 172 articles captured, 36 articles were included in this review. The following capillaroscopic parameters were significantly more prevalent in SLE patients compared to healthy controls (see table): tortuous capillaries, abnormal morphology, haemorrhages, nailfold capillaroscopic score, "non-specific patterns" and "scleroderma like pattern". Hairpin shaped capillaries were significantly more prevalent in healthy controls compared to SLE patients. For clinical and laboratory parameters, Raynaud's phenomenon (RP), gangrene and 24 hours proteinuria were significantly correlated with capillaroscopic changes.

				Significant	Non-significant	Conclusion
Quantitative evaluation	Density	Mean density		4 studies	4 studies	Non-conclusive
		Avascularity		2 studies	0 studies	
	Dimensions	Diameter	Mean limb diameter	4 studies	2 studies	Non-conclusive
			Mean width	2 studies	2 studies	
			Enlarged width	4 studies	0 studies	
			Giant	1 study	0 studies	
		Length		3 studies	2 studies	Non-conclusive
	Morphology	Normal morphology		3 studies	0 studies	Significant more hairpin morphology in healthy controls compared to SLE patients and more tortuous capillaries in SLE patients compared to healthy controls
		Abnormal morphology		5 studies	0 studies	Significant more abnormal morphology in SLE patients compared to controls
	Haemorrhages			2 studies	0 studies	Significant more haemorrhages in SLE patients compared to controls
	NFC score			2 studies	0 studies	Significant higher NFC score in SLE patients compared to controls
Qualitative evaluation	Other patterns			1 study	0 studies	Significant more nonspecific and scleroderma-like pattern in SLE patients compared to controls

Conclusions: This first systematic review on capillaroscopy in SLE attests conclusive significant differences in morphology, haemorrhages, semi quantitative assessment, qualitative assessment and some clinical and laboratory parameters. Further large scale research is ongoing through the EULAR study group on microcirculation in Rheumatic Diseases to further define its role.

Disclosure of Interest: None declared

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THU0253 TRIPLE POSITIVITY TO ANTIPHOSPHOLIPID ANTIBODIES IN PRIMARY ANTIPHOSPHOLIPID SYNDROME: INCREASED RISK OF ARTERIAL THROMBOSES AND ABORTIONS

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Background: Triple positivity (TP) to antiphospholipid antibodies (aPL) has been associated with increased risk of thrombotic and gestational events in different populations of antiphospholipid syndrome (APS) patients. Nonetheless, the majority of the studies evolved APS secondary to systemic lupus erythematosus (SLE).

Objectives: To investigate whether TP increases the risk of criteria and non-criteria manifestations in primary APS (pAPS) patients.

Methods: A cross-sectional study was performed in a group of 74 outpatients who fulfilled APS classification criteria (Sydney; N=67) or with thrombocytopenia and persistent circulating aPL, but no criteria manifestations of APS (N=7), seen in our department. Clinical and serological features collected during medical

Table 1. Demographic and clinical characteristics

Variable	Triple positivity (N=19)	No triple positivity (N=55)	P value
Age	41.7±10.3	44±13.5	NS
Female gender	17 (89.5)	44 (80.0)	NS
Caucasian	14 (73.7)	37 (67.3)	NS
Time first manifestation (mo)	143 (97–240)	124.7 (67–176)	NS
Time diagnosis (mo)	55 (26–134)	64 (43–103)	NS
Criteria manifestations*			
Thrombotic	17 (89.5)	45 (81.8)	NS
Arterial	10 (52.6)	17 (30.3)	NS
Venous	10 (52.6)	35 (63.6)	NS
Abortion 3+	3 (20.0)†	1 (2.8)††	p=0.043
Thrombotic + obstetric	10 (58.8)‡	10 (23.8)‡‡	p=0.008
Non criteria			
Livedo	9 (47.4)	11 (20.0)	p=0.023
Thrombocytopenia	7 (36.8)	10 (18.2)	NS
Valvulopathy**	2 (10.5)	6 (10.9)	NS
Raynaud phenomenon	7 (36.8)	12 (21.8)	NS
Leg ulcers	1 (5.3)	4 (7.3)	NS
Nephropathy	0	1 (1.8)	NS
Migraine	8 (42.1)	25 (45.5)	NS

*N=67; **N=49; †N=15; ††N=36; ‡N=17; ‡‡N=42. Mo = months. NS = not significant, NA = not applicable. Values showed as N (%) for categorical variables, Mean ± SD for normal distribution and Median (interquartil range) for asymmetrical distribution.

examination and by chart review were correlated to the presence or not of aPL TP.
Results: Nineteen out of 74 pAPS patients had aPL TP (25.7%). Demographic and clinical characteristics are shown in Table 1. In a bivariate analysis, TP was associated with the presence of combined thrombotic and obstetric manifestations (p=0.008), three or more abortions (abortion 3+; p=0.043), and livedo (p=0.023). In a multivariate regression analysis, the model was adjusted to age, sex, race and variables with p<0.10 in the bivariate analysis (arterial thrombosis, abortion 3+, livedo, thrombocytopenia, and thrombotic+obstetric). After the analysis, arterial thrombosis (OR 5.74; CI95% 1.31–25.05; p=0.02) and abortion 3+ (OR 12.55; CI95% 1.01–156.54; p=0.049) were associated with TP.
Conclusions: In our cohort of primary APS patients, triple positivity was associated with arterial thromboses and the occurrence of 3 or more abortions, with increased risk over 5 and 12 folds, respectively.
Disclosure of Interest: None declared
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THU0254 COMPARISON OF URBAN VERSUS RURAL ENVIRONMENT ASSOCIATED SYSTEMIC LUPUS ERYTHEMATOSUS (SLE): RISK AND CLINICAL FEATURES

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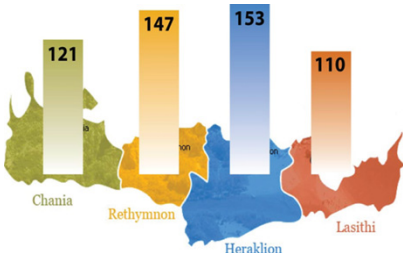
Background: SLE originates from the complex interplay between genetic, epigenetic and environmental factors but the effects of the latter remain elusive. Very few studies have examined the impact of the place of residence (urban/rural) on SLE clinical profile and outcomes.
Objectives: To evaluate the effect of rural versus urban place of residency with regards to: i) SLE occurrence; ii) delay in diagnosis; iii) clinical manifestations, severity and non-reversible organ damage; iv) comorbidities and hospitalizations.
Methods: We employed data from the Lupus Epidemiology & Surveillance project in Crete (750 adult SLE patients with ≥4 ACR-1997 classification criteria). Crete is a Mediterranean island with genetically stable and homogenous population in ethnicity and sociodemographic characteristics, with no significant inequalities regarding access to healthcare facilities; 61% of the inhabitants live in rural (<10,000 people) and 47% in urban areas (>10,000 people). Demographics and residency history were retrieved from face interviews. In 200 patients with exclusively urban or rural residence, a subanalysis was performed in relation to disease risk, diagnosis age, disease severity, renal and neuropsychiatric involvement, and organ damage (SLICC damage Index [SDI]).
Results: SLE prevalence (December 2013) varied across the four geographical prefectures of Crete (Figure 1) and was significantly higher in urban ($165/10^5$) than rural ($123/10^5$) areas (p<0.001). The relative risk of SLE in urban versus rural regions was 2.0 (95% Confidence Interval 1.5–2.9). Notably, patients in urban regions had lower age of diagnosis (38.0±13.4 *vs.* 44.5±14.8 years, p=0.005) and female-to-male ratio (6.5:1 *vs.* 11:1) than those in rural regions. Delay >2 years between symptoms onset and SLE diagnosis occurred in 42% of patients from rural areas as compared to 32% of those from urban areas (p=0.01). Acute cutaneous lupus was more prevalent in the rural environment (83.9% vs. 72.6%, p=0.05) whereas the opposite trend was noted for discoid rash (2.3% vs. 16.8%, p=0.001). Nephritis occurred less frequently (10.3% *vs.* 12.4%) and neuropsychiatric disease was more prevalent (14.9% *vs.* 10.6%) in rural than urban patients albeit non-significantly. Prevalence of mild, moderate, and severe disease was 42%, 40%, and 18% in patients from rural areas, the respective figures being 55%, 28% and 18% in those from urban areas (p=0.12). Hospitalization due to active lupus did not differ between the two groups. At last follow-up, 45.3% of the patients living in urban and 51.9% of patients in rural areas had no organ damage (p=0.89). Concurrent allergic diseases were more frequent in urban patients (30.9% *vs.* 14.3%, p=0.045), particularly allergic rhinitis (8.8% *vs.* 2.3%, p=0.05).



Conclusions: SLE may be more prevalent in urban than rural regions and urbanization is associated with increased risk of SLE and earlier age of disease onset.
Our results suggest an important effect of the environment on SLE occurrence and characteristics, which warrants further investigation.
Disclosure of Interest: None declared
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THU0255 COMPARISON OF REMISSION AND LUPUS LOW ACTIVITY STATE AS PREDICTORS OF ORGAN DAMAGE

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Background: Outcome measures that combine control of SLE activity and prednisone reduction are clinically relevant. A clinical goal in SLE is to reduce risk of long-term organ damage.
Objectives: We assessed whether two recently proposed disease activity outcomes were predictive of future damage.
Methods: For each month of follow-up in a large SLE cohort, we determined whether the patient was in Clinical Remission (as defined by the DORIS work group) or low lupus disease activity state (LLDAS) (as defined by Franklyn et al.). Clinical Remission was defined as a PGA<0.5, clinical SLEDAI=0 and no prednisone or immunosuppressants. Clinical Remission on Treatment allowed for prednisone≤5mg/day and immunosuppressant use. LLDAS was defined as a SLEDAI ≤4, PGA ≤1.0, no major organ activity, and no new activity. LLDAS on treatment allowed for prednisone use ≤7.5 mg/d and immunosuppressants. Damage was defined using the SLICC/ACR index.
Results: There were 81,118 person-months observed among 2,026 patients (92% female, 53% Caucasian, 39% African-American). Table 1 shows the rates of damage, per person month, in subgroups defined by Remission or LLDAS.

Table 1. Rates of new damage, in subgroups defined by past levels of disease activity

Percentage of prior months in:	Number of person-months observed	Number of months with an increase in SLICC/ACR damage	Rate of damage per 100 person-months	Rate ratios	P-values
Clinical Remission					
None	35,772	406	1.13	1.0 (Ref)	
Not none, but <25%	14,358	102	0.71	0.60 (0.48, 0.75)	<0.0001
25% to 50%	6573	50	0.76	0.66 (0.46, 0.94)	0.023
50% to 75%	3845	27	0.70	0.63 (0.42, 0.97)	0.035
75%+	1,641	10	0.61	0.58 (0.30, 1.15)	0.12
Clinical Remission on Treatment					
None	16,491	250	1.52	1.0 (Ref)	
Not none, but <25%	20,169	170	0.84	0.54 (0.44, 0.67)	<0.0001
25% to 50%	14,344	103	0.72	0.46 (0.36, 0.60)	<0.0001
50% to 75%	8396	54	0.64	0.43 (0.30, 0.60)	<0.0001
75%+	2,789	18	0.65	0.45 (0.27, 0.75)	0.0019
LLDAS					
None	30,366	343	1.13	1.0 (Ref)	
Not none, but <25%	10,880	106	0.97	0.86 (0.69, 1.07)	0.18
25% to 50%	5012	40	0.80	0.70 (0.51, 0.98)	0.037
50% to 75%	8494	60	0.71	0.63 (0.48, 0.83)	
75%+	7,527	46	0.61	0.54 (0.40, 0.73)	<0.0001
LLDAS on Treatment					
None	7,656	117	1.53	1.0 (Ref)	
Not none, but <25%	10,555	134	1.27	0.83 (0.65, 1.06)	0.14
25% to 50%	12,686	129	1.02	0.66 (0.51, 0.85)	0.0013
50% to 75%	18,151	133	0.73	0.48 (0.37, 0.61)	0.0010
75%+	13,141	82	0.62	0.40 (0.30, 0.54)	<0.0001

Damage rates were relatively low when LLDA was achieved at least 50% of the time. These rates were similar to those experienced by patients who met a more stringent treatment restriction with Remission on Treatment at least 50% of the time.
Conclusions: The equivalence of LLDAS and DORIS remission on treatment is welcome news, as LLDAS on treatment >50% of the time is an easier goal to achieve (3 times more person-months observed in our cohort) and more realistic as a clinical trial outcome.
Disclosure of Interest: None declared
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THU0256 DEVELOPMENT AND VALIDATION OF A SCORE TO PREDICT THE RISK OF SEVERE INFECTION IN SLE

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Background: Infection is a major cause of morbidity and mortality in SLE patients. It would be helpful to have a tool to predict the risk that an individual patient with SLE will develop serious infection.
Objectives: To develop a predictive risk calculator algorithm (SCORE) that