Table 1. comparison of the characteristics of SMA and IMA between SSc patients and HC.

SMA	SSc		HC		p-value	Age adjusted p-value
	N	Mean $\pm$ SD	N	Mean $\pm$ SD		
Caliber (mm)	28	5.75 $\pm$ 0.62	28	6.45 $\pm$ 0.60	<0.0001	0.0002
PSV (cm/sec)	28	137.50 $\pm$ 34.50	28	135.26 $\pm$ 33.81	0.8075	0.7297
RV (cm/sec)	28	7.25 $\pm$ 6.37	28	18.52 $\pm$ 6.16	<0.0001	<0.0001
EDV (cm/sec)	28	16.34 $\pm$ 7.03	28	12.64 $\pm$ 5.46	0.0321	0.0650
mV (cm/sec)	28	38.03 $\pm$ 13.90	28	28.32 $\pm$ 9.25	0.0035	0.0150
Blood-flow (cm/sec)	28	1073.1 $\pm$ 831.16	28	913.36 $\pm$ 272.87	0.3409	0.4781
PI	28	3.33 $\pm$ 0.75	28	4.53 $\pm$ 1.03	<0.0001	0.0002
RI	28	0.88 $\pm$ 0.04	28	0.91 $\pm$ 0.03	0.0034	0.0141
IMA						
Caliber (mm)	26	2.71 $\pm$ 0.47	24	2.79 $\pm$ 0.37	0.4872	0.5385
PSV (cm/sec)	23	72.27 $\pm$ 27.23	23	93.81 $\pm$ 25.73	0.0084	0.0044
RV (cm/sec)	23	2.69 $\pm$ 6.10	23	17.06 $\pm$ 5.75	<0.0001	<0.0001
EDV (cm/sec)	23	7.87 $\pm$ 2.01	23	7.95 $\pm$ 2.10	0.8921	0.9250
mV (cm/sec)	23	17.83 $\pm$ 5.33	23	14.75 $\pm$ 5.08	0.0514	0.3938
Blood-flow (cm/sec)	23	106.70 $\pm$ 47.99	20	84.00 $\pm$ 30.13	0.0676	0.3056
PI	23	3.54 $\pm$ 0.95	23	6.08 $\pm$ 1.53	<0.0001	<0.0001
RI	23	0.88 $\pm$ 0.04	23	0.91 $\pm$ 0.03	0.0132	0.0205

SMA=superior mesenteric artery, IMA=inferior mesenteric artery, PSV=Peak Systolic Velocity, RV=Reverse Velocity, EDV=End-Diastolic Velocity, mV=Mean Velocity, PI=Pulsatility Index, RI=Resistive Index.

Conclusion: this preliminary study shows, for the first time, the presence of a significant reduction of RV, PI and RI in the intestinal arteries of SSc patients when compared to HC. These data show an increased stiffness of the gastrointestinal arterial wall, in agreement with the typical SSc vasculopathy. A larger cohort is needed to confirm the results and explore the possible relationship with other clinical features of the disease.

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OP0177

PRESENCE AND SEVERITY OF DIGITAL OCCLUSIVE ARTERIAL DISEASE PREDICTS DIGITAL ISCHEMIC COMPLICATIONS IN SYSTEMIC SCLEROSIS

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Background: Vasculopathy is a key feature of systemic sclerosis (SSc), manifesting clinically as Raynaud's phenomenon (RP) with or without digital ischemia. Laser doppler flowmetry (LDF) with thermal challenge is a safe, noninvasive and reproducible technique to detect digital occlusive arterial disease (DOAD) with a high sensitivity and specificity of >90% (1).

Objectives: To study the prevalence and clinical correlates of DOAD assessed by LDF in patients with SSc referred for evaluation of RP at a tertiary referral center. **Methods:** Medical records of all patients with SSc meeting ACR/EULAR 2013 classification criteria that underwent LDF between Jan 2001-Dec 2018 at our institution were retrospectively reviewed to abstract the presence or absence of DOAD. The presence of DOAD on LDF was confirmed if pre- and post-warming skin blood flow was ≤ 206 arbitrary units. Severity of DOAD was assessed based on number of digits involved. Risk factors associated with presence of DOAD in SSc, and correlation between presence and severity of DOAD with digital ischemic complications were studied.

Results: 304 patients with SSc (mean age 57.1 $\pm$ 3.3 y, 81% females, 93% Caucasians) underwent LDF during the study period. Median time between SSc diagnosis and performing LDF was 12.9 months. Majority of patients with SSc had limited cutaneous SSc (lcSSc) (79.6%) and 64.1% had a positive SSc specific antibody. On LDF with thermal challenge, presence of DOAD was noted in 243 (79.9%) patients, of whom 78.6% had lcSSc, 42.4% had a centromere antibody (Ab), 17.3% had a Scl-70 Ab, 53.5% had interstitial lung disease, 36.6% had pulmonary arterial hypertension, and 73.3% had gastrointestinal dysmotility (GID). Of 159 patients with DOAD who also had a nailfold capillaroscopy, 70.4% had abnormalities. Large vessel occlusive disease was significantly higher in patients with DOAD in comparison to those without DOAD (29.2% vs 16.4%; p: 0.04). After adjusting for age and sex, GID (OR: 2.73 [95%CI 1.52-4.92]) and telangiectasia (OR: 2.83 [95%CI 1.23-6.40]) were significantly associated with DOAD. Digital ischemic complications among patients with SSc with DOAD were significantly higher than among those without DOAD (79.8% vs 41.0% had digital ulcers, 53.9% vs 26.2% had pitting/scars, 31.3% vs 8.2% had gangrene/ amputation; p < 0.001). (Figure 1) Increasing severity of DOAD was associated with

a statistically significantly higher incidence of digital ischemic complications as presented in Table 1.

Figure 1. Correlation between the presence of digital occlusive arterial disease (DOAD) and digital ischemic complications in systemic sclerosis

Table 1. Logistic regression models for association of digital ischemic complications and severity of digital occlusive arterial disease

Digital Involvement Complication	Odds Ratio (OR) Reflects "digits vs. 0"	OR	CI 95%
Digital Ulcer	Unit Increase	1.28	1.19-1.39
	1-2	2.11	0.927-4.92
	3-7	5.57	2.84-11.2
	8-10	10.9	4.98-25.4
Digital Tip Pitting/Scars	Unit Increase	1.17	1.10-1.26
	1-2	1.92	0.803-4.61
	3-7	2.62	1.35-5.28
	8-10	5.45	2.72-11.4
Digital Gangrene/Amputation	Unit Increase	1.26	1.16-1.37
	1-2	1.36	0.317-5.48
	3-7	4.10	1.62-12.6
	8-10	9.05	3.60-27.7
Any Digital Involvement	Unit Increase	1.35	1.24-1.49
	1-2	2.98	1.27-7.30
	3-7	6.16	3.08-12.7
	8-10	18.5	7.46-53.2

Conclusion: This is the largest single center study to describe the prevalence and predictors of DOAD on LDF in a well-defined cohort of patients with SSc.

The high prevalence of DOAD on LDF noted in SSc-RP make it a valuable tool not only for evaluation of vasculopathy in SSc but also to distinguish it from Primary RP. The presence and severity of DOAD strongly correlates with digital ischemic complications and can be used as a guide to counsel patients and determine the aggressiveness of therapeutic interventions. Our study underscores the significance of LDF as a reliable non-invasive modality to detect DOAD and a prognostic tool to identify patients at highest risk of digital ischemic complications.

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Rheumatoid arthritis - prognosis, predictors and outcome

OP0178

ASSOCIATION BETWEEN ENVIRONMENTAL AIR POLLUTION AND RHEUMATOID ARTHRITIS FLARES

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Background: Environmental air pollution has been linked to the pathogenesis of Rheumatoid Arthritis (RA). Nevertheless, evidence linking higher concentrations of air pollutants with the risk of RA reactivations is missing.

Objectives: The objective of the present study was to determine the association between RA flares and air pollution.

Methods: We collected longitudinal data of patients affected by RA and of the daily concentration of air pollutants in the Verona area. We designed a case-crossover study. In case-crossover studies, instead of obtaining information from two groups (cases and controls), the exposure information is obtained comparing two different periods of time in the same group of patients followed longitudinally. We compared the exposure to pollutants in the 30-day and 60-day periods preceding an arthritic flare referent to the 30-day and 60-day preceding a low-disease activity visit. Flare was defined as an increase in DAS28-CRP of >1.2 points with current DAS28-CRP ≥ 3.2 (OMERACT definition).