POS1309

ASSOCIATION BETWEEN RED CELL DISTRIBUTION WIDTH AND INTERSTITIAL LUNG DISEASE IN SYSTEMIC SCLEROSIS

Keywords: Descriptive studies, Biomarkers, Systemic sclerosis

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Background: Interstitial lung disease (ILD) and pulmonary arterial hypertension (PHT) account for 60% of deaths related to scleroderma (SSc) [1]. The Red Cell Distribution Width (RDW) is a biomarker that has been used as a marker of poor prognosis in various pathologies [2-9]. In SSc, the RDW has been found to be elevated in PHT and has been proposed as a predictor of cardiorespiratory compromise [10-11].

Objectives: To evaluate the association between the increase in RDW and the presence of ILD in patients with SSc.

Methods: Observational, retrospective, multicenter, cross-sectional study of patients with SSc (ACR/ EULAR 2013) between 1/1/2011 to 8/31/2021. Other concomitant autoimmune diseases, malignancy, active infections, anemia, recent transfusions, cardiovascular, renal, or hepatic disease were excluded. The diagnosis of ILD was made by high-resolution computed tomography (HRCT) and the extension evaluated by Goh criteria[12]. A review of medical records was performed, collecting relevant clinical and demographic characteristics.

Results: Seventy-five patients were included, with a mean age of 59.4 years (SD 14.1, 95% CI 56-63), 67 (89%) were women. A median of 8 years of disease evolution was observed (IQR 8). ILD was observed in 50 (66,6%) patients while 25 (33.3%) did not. According to Leroy's classification, limited SSc (lcSSc) was observed in 50 patients (66,6%) and diffuse SSc (dSSc) in 24 (33,3%); the last classification was significantly associated with the presence of ILD, as was as MRSS (Modified Rodnan Skin Thickness Score)> 14, digital ulcers, and positive ATA (DNA topoisomerase I), unlike ACA (anticentromere antibodies) (Table 1). The most frequent HRCT pattern was NSIP (Nonspecific interstitial pneumonia) in lcSSc (66.6%). An association was found between dSSc and fibrotic patterns (fNSIP and UIP). OR 6, 95% CI 1.6-21 (p 0.009). The extension of the disease was measured in 44 patients (6 missing data), being limited in 25 (57%) and extensive in 19 (43%). The extensive form was correlated with a higher RDW mean (p < 0.0001). The MRSS was measured in 70 patients, being less than 14 in 63 (90%). 100% of the patients with mRSS > 14 had a high RDW (p 0.01). Increased RDW was evidenced in the group with ILD, with a statistically significant difference (OR 6.06 95%CI 2-17 p 0.001).

Table 1. Clinical, demographic and laboratory characteristics

	ILD n=50	No ILD n=25	p value
Women n (%)	43 (86)	24 (96)	0,18
Age x (SD)	58,3 (12,9)	61,6 (16,4)	0,34
Disease duration (years) Me (IQR)	7,5 (6,2)	9 (9,5)	0,13
lcSSc n (%)	**27 (54)**	**23 (92)**	0,001
dSSc n (%)	**22 (44)**	**2 (8)**	
PHT n (%) MD 16	4 (8)	2 (8)	0,38
SRC n (%)	1 (2)	2 (8)	0,25
MRSS > 14 n (5)	**8 (16)**	**0**	0,034
Dysphagia / GERD n (%)	38 (76)	19 (76)	1
Calcinosis n (%)	5 (10)	2 (8)	0,59
Digital ulcers n (%)	**23 (46)**	**5 (20)**	0,024
Pigmentation disorders n (%)	11 (22)	3(12)	0,23
Telangiectasias n (%)	24 (48)	13 (52)	0,46
ESR Me (IQR)	20 (30)	18 (30)	0,25
CRP Me (IQR) MD 4	5 (11,8)	1,5 (5,6)	0,1
ACA n (%) MD 10	**9 (18)**	**18 (72)**	< 0,0001
ATA n (%) MD 4	**19 (38)**	**4 (16)**	0,037
RDW > 14 n(%)	**33 (66)**	**7 (28)**	0,01
HRCT pattern			
NSIP n (%)	**20 (66,6)**	**5 (25)**	0,009
fNSIP n (%)	7 (23,3)	8 (40)	0,22
UIP N (%)	3 (10)	7 (35)	0,067
	Increased RDW n (%)	**Normal RDW n (%)**	**p value**
Goh classification n (%)			
Limited	**20 (80)**	**5 (20)**	< 0,0001
Extensive	**15 (79)**	**4 (21)**	
MRSS n (%)			
< 14	**32 (50,8)**	**31 (49,4)**	0,01
> 14	**8 (100)**	**0**	

ACA: anticentromere antibodies; ATA: DNA topoisomerase I; CRP: C reactive protein; dSSc: diffuse SSc; ERS: erythrocyte sedimentation rate; fNSIP: fibrotic NSIP; GERD: gastroesophageal reflux disease; HRCT: high-resolution computed tomography; ILD: interstitial lung disease; IQR: interquartile range; lcSSc: limited SSc; Me: median; MD: missing date; MRSS: modified rodnan skin thickness score; NSIP: nonspecific interstitial pneumonia; PHT: arterial hypertension; RDW: red cell distribution width; SD: standard deviation; SRC: scleroderma kidney crisis; UIP: usual interstitial pneumonia.

The median RDW in the groups with isolated ILD and ILD plus PHT was significantly higher than in patients without lung disease (p < 0.001). We found no significant difference between the ILD and ILD plus PHT groups (p 0.350) (Figure 1).

Figure 1.

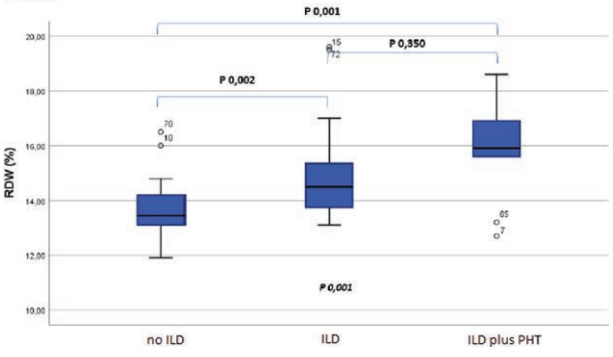

Figure 1.

Conclusion: We have been able to show that there is a significant relationship between the increase in RDW and the presence of ILD in patients with SSc; this association was more significant for the extensive forms of the disease as well as fibrotic patterns. These findings are relevant as the RDW is an easily accessible parameter that could be used in the follow-up of patients with SSc, and an elevation not explained by other causes of the RDW could be an alarming marker to search more exhaustively for the presence of cardiorespiratory compromise. The limitations of the study are those of any retrospective study, the presence of

missing data in addition to the limited number of patients. It is necessary to continue studies with a larger number of patients to grant robustness to the results.

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POS1310

FECAL MICROBIOTA TRANSPLANTATION IN PATIENTS WITH SYSTEMIC SCLEROSIS AND LOWER GASTROINTESTINAL TRACT SYMPTOMS: DATA FROM THE RESSCUE RANDOMIZED CLINICAL TRIAL

Keywords: Randomized control trial, Systemic sclerosis, Gastrointestinal tract

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Background: Lower gastrointestinal tract (GIT) complications are common in patients with systemic sclerosis (SSc), associate with a high disease burden, and current treatment alternatives are limited. Patients with SSc have also an altered intestinal microbiota composition. This provides a rational for the investigation of fecal microbiota transplantation (FMT) in SSc patients with lower GIT symptoms.
Objectives: To assess the safety and efficacy of a standardized intestinal microbiota infusion in SSc patients with lower GIT symptoms.
Methods: Patients with SSc and moderate to severe bloating and/or diarrhea assessed by the UCLA SCTC GIT score 2.0 were enrolled in a Norwegian multicenter, double-blind, randomized, placebo-controlled, phase 2 trial. Patients were randomized to receive an intestinal infusion of a standardized fecal microbiota culture (ACHIM) or placebo at weeks 0 and 2. At week 12, all patients received an ACHIM infusion and were followed in an open maintenance phase until week 20. The primary outcome was a change between baseline and week 12 in UCLA GIT score item diarrhea or bloating, depending on which was the worst symptom at the baseline evaluated separately for each patient, measured as the average marginal effect (AME). Secondary outcomes were safety and tolerability and total UCLA GIT score. Other outcome measures included the change in UCLA GIT score from week 12 to week 20.
Results: A total of 65 patients were randomized to receive ACHIM or placebo. Baseline characteristics in the placebo and ACHIM groups were comparable (Table 1). There was no significant difference in the change in lower GI symptoms from week 0 to week 12 between the ACHIM and placebo groups (AME=0.17 (-0.12, 0.47), p=0.25). Similarly, no significant difference was observed in the total GIT score between the two groups over the same time period (AME=0.09 (-0.04, 0.23), p=0.17). Furthermore, during the maintenance phase, there was no statistical difference in change between the ACHIM and the placebo group (AME= -0.04 (-0.32, 0.23), p=077). In ACHIM, 16 (37%) and in placebo 19 (42%) experienced any side effect. These were in general mild and short-lasting, with abdominal pain as the most frequent side effect present in 5 (15%) in ACHIM and 2 (6%) in placebo. Time to resolved pain was 2 days in both groups. One patient experienced an intramural perforation during gastroscopy and needed IV antibiotics but fully recovered.
Conclusion: We were unable to find indications that FMT improves lower GIT symptoms in SSc patients, but the treatment was found to be safe.

Table 1: Baseline characteristics

Parameter	ACHIM (N=33)	Placebo (N=34)
Age, y (SD)	58 (11.5)	60 (11.7)
Female, n (%)	33 (100)	29 (85)
Worst symptom Bloating, n (%)	22 (67)	22 (65)
Disease duration, y (SD)	9 (7)	10 (8)
Limited cutaneous SSc, n (%)	31 (94)	28 (85)
FVC% (SD)	95 (13.7)	90 (19.2)
Immunosuppressives, n (%)	3 (9)	5 (15)
PPI, n (%)	27 (82)	21 (62)
CCB, n (%)	18 (58)	20 (59)
Total GIT score	0.9 (0.5)	0.7 (0.3)
GIT scale Diarrhea	0.8 (0.7)	0.5 (0.5)
GIT scale Bloating	1.8 (0.8)	1.7 (0.7)

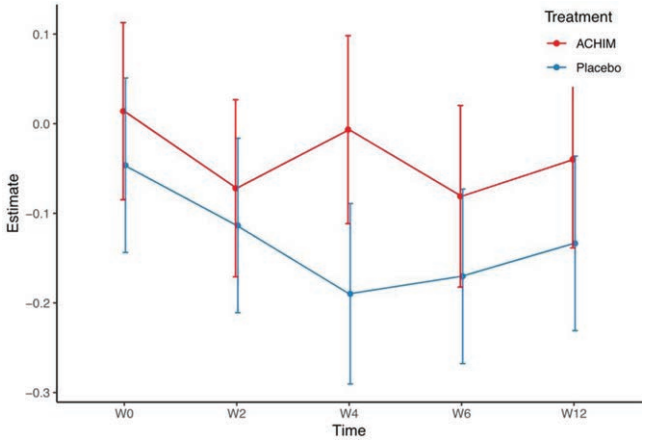

Figure: Change between baseline and week 12 in UCLA GIT score item diarrhea or bloating, depending on which was the worst symptom at the baseline in ACHIM (red) and placebo (blue), adjusted for baseline.

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