systemic sclerosis. Altered level of albumin and decreased appetite may lead to worsening in nutritional status. Assessment of nutritional status in this group of patients should be performed regularly, because it can be potentially modified.

References:
[1] Harrison E, Herrick AL, McLaughlin JT, Lal S. Malnutrition in systemic sclerosis. Rheumatology 2012;51:1747–1756.
[2] Krause L, et al. Nutritional status as marker for disease activity and severity predicting mortality in patients with systemic sclerosis. Ann Rheum Dis 2010;69:1951–1957.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.6032

SAT0328 AN OPEN-LABEL STUDY OF AMBRISENTAN WITH ANTI-FIBROTIC AGENT COMBINATION THERAPY IN THE TREATMENT OF DIFFUSE SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is marked by immune dysregulation, inappropriate fibrosis and a vasculopathy for which there is currently no universally accepted disease modifying regimen. Ambrisentan, a selective type A endothelin receptor antagonist (ERA) has known benefits in the treatment of the vasculopathy related to pulmonary arterial hypertension and has been postulated to have anti-fibrotic effects. The additive effect of an ERA in combination with an anti-fibrotic agent has not previously been studied in SSc.
Objectives: To determine the safety and efficacy of ambrisentan in combination with an anti-fibrotic agent in early diffuse cutaneous systemic sclerosis (dcSSc).
Methods: Patients already on anti-fibrotic therapy for early dcSSc with onset of skin sclerosis less than 48 months before study entry were placed on ambrisentan 5mg daily for 12 months in an open-label study. Laboratory and clinical parameters to assess safety, as well as severity and progression of SSc were obtained at specified intervals. The primary outcome measure was the modified Rodnan skin score (mRSS), and secondary outcomes were the Medsger severity score, the Short Form Health Survey (SF)-36 questionnaire, pulmonary function tests (PFTs), and 2D echocardiograms (echo).
Results: A total of 15 patients were recruited who were on anti-fibrotic therapy upon entry of the study, most commonly mycophenolate (14 patients) and 1 patient on methotrexate. Of the patients entering the study, 10 patients (66.7%) completed 12 months of treatment with the study drug. Using intention-to-treat analysis, the mRSS improved significantly with a mean difference in mRSS of -8 from study entry to study end (p=0.000167). Among study completers (n=10), there was a trend for improvement in all but one category of the SF-36 while only the physical health component was of statistical significance (p=0.025). The median Medsger severity scores remained unchanged except for a change in median skin score. No statistically significant change was observed in PFTs and in mean estimated pulmonary arterial pressure by echo for those patients in whom data was obtained at baseline and at 12 months (n=12 and n=5, respectively). The most common adverse events included peripheral edema and dizziness. Two patients withdrew from the study due to intolerance of the study drug. Serious adverse events (SAE's) occurred in 4 study subjects and included scleroderma renal crisis (n=1), upper gastrointestinal bleeding (n=1) and infections (n=2). None of the SAEs were deemed to be related to the study drug.
Conclusions: In this prospective open-label study of ambrisentan and anti-fibrotic combination therapy in early dcSSc, we observed significant improvements in the mRSS and patient-perceived physical health status on the SF-36. There was no observed change in peripheral vascular involvement and no consistent trend in PFTs. Combination ambrisentan and anti-fibrotic therapy appears relatively safe in this 12-month study. Larger, controlled trials are needed to further investigate the safety and efficacy of combination therapy.
Acknowledgements: [C.T. Derk received funding support for this study by Gilead Pharmaceuticals]
Disclosure of Interest: A. Schorpion: None declared, M. Shenin: None declared, R. Neubauer: None declared, C. Derk Grant/research support from: Gilead Pharmaceuticals
DOI: 10.1136/annrheumdis-2017-eular.3932

SAT0329 INTRAVENOUS CYCLOPHOSPHAMIDE ACCORDING TO THE EURO-LUPUS NEPHRITIS PROTOCOL FOR PROGRESSIVE INTERSTITIAL LUNG DISEASE IN PATIENTS WITH POLYMYOSITIS/DERMATOMYOSITIS

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Background: Interstitial lung disease (ILD) affects 30–70% of patients with Polymyositis (PM) and Dermatomyositis (DM) and is one of the major contributors of morbidity and mortality.
Objectives: To study the efficacy and the safety of intravenous cyclophosphamide (IVCYC) according to the Euro-Lupus nephritis protocol for ILD in PM/DM patients.
Methods: Twelve patients with PM/DM (mean age 54± SD 8), who received, 500 mg IVCYC every other week, up to 12 times, according to the treating physician, as first line treatment, were retrospectively studied. Six patients had anti-Jo1, 4 anti-PL7, 1 anti-PL12, and 1 anti-MDA5 auto-antibodies. The median (IQR) disease duration before IVCYC was 4 (10,8) months. High doses of prednisolone were given for the first month and then gradually tapered. Response to treatment after a median (IQR) follow-up of 5 (2,8) months was based on pulmonary function tests (PFT) and HRCT). The extent of pure ground-glass opacity (pGGO), pulmonary fibrosis (PF), honeycomb cysts (HCs) and emphysema was scored (0=0%, 1=1–5%, 2=6–15%, 3=16–20%, 4=21–25%, 5=26–50%, 6=51–75%, 7= >75%) in the upper, middle and lower lung zones before and after therapy. The total score for each finding was calculated as the sum of the scores of the 3 zones (1).
Results: The mean IVCYC total amount was 4.75 ± SD 1.4 gr. Before IVCYC, the median (IQR) values of forced vital capacity (FVC)%, forced expiratory volume in 1 second (FEV1)%, vital capacity (VC)%, total lung capacity (TLC)% and diffusion capacity of the lung for carbon monoxide (DLCO)% were 67 (26), 60 (14), 63 (11), 63 (12) and 57 (25), respectively. After therapy, the median (IQR) values became 74 (29), 80 (18), 80 (24), 77 (19) and 68 (27), respectively. The difference between baseline and follow-up TLC%, FVC% (fig.1) and VC% median values was statistically significant ($p<0,05$). FVC% and TLC% improved >10% in 6 and 5 patients, respectively; DLCO% improved >15% in 3 patients. Before IVCYC, the median (IQR) scores of pGGO and PF were 12,5 (9) and 12 (7), respectively. After IVCYC, they decreased (7 (6) and 9 (12), respectively). In the group of anti-Jo-1 positive patients, the difference was close to the statistically significant (from 13,5 (10) to 7,5 (15), p=0,06 and from 9,5 (10) to 4,5 (16), p=0,07, respectively). The median (IQR) pGCO scores of anti-Jo-1 negative patients improved (from 11,5 (11) to 8,50 (17)), while the median (IQR) PF scores were unchanged (from 13,5 (4) to 14 (10)). At baseline and follow up, the median scores of HCs and emphysema were 0. No statistically significant correlations were found between PFT values and HRCT scores. The difference of PF extent was negatively correlated with the disease duration before the first IVCYC (r=-0,56, p=0,056, fig 1). No adverse events or drug toxicity were observed.
Conclusions: After IVCYC according to the Euro-Lupus nephritis protocol PFT and HRCT findings improved in PM/DM patients with ILD without any adverse events or drug toxicity. Longitudinal controlled studies are needed to confirm the efficacy and the safety of this treatment protocol.

References:
[1] Goldin JG, et al.High-resolution CT scan findings in patients with symptomatic scleroderma-related interstitial lung disease.Chest. 2008 Aug;134(2):358–67.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.5878

SAT0330 LOWER PREVALENCE BUT COMPARABLE CLINICAL CHARACTERISTICS AND PROGNOSIS OF SYSTEMIC SCLEROSIS IN CRETE-GREECE AS COMPARED TO OTHER EUROPEAN COUNTRIES: A SINGLE CENTER EXPERIENCE

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Background: Systemic Sclerosis (SSc) is a rare, multisystemic connective tissue disease with significant morbidity. Prevalence and incidence of SSc varies worldwide (0.7–265 cases per 100,000/y[1,2] and 0.06–12.2 cases per 100,000/y[1] respectively). Mortality in SSc patients remains 3.5 times higher than the general population[3]. We sought to generate updated data on the epidemiology and burden of SSc in the Greek population.
Objectives: To study the prevalence and incidence of SSc, describe the clinical characteristics and assess mortality and main causes of death in Crete (Greece) over a 5-year period (2010–2015).
Methods: We conducted a cohort Study in defined geographic area (6,5% of Greek population). We reviewed demographics, clinical features, autoantibodies status and the causes of death from the Scleroderma cohort followed at the Rheumatology clinic of the University Hospital, Heraklion. The cause of death was categorized as related or not to scleroderma. Incidence and prevalence were estimated including patients living permanently in Crete who fulfilled SSc 2013 ACR/EULAR Classification Criteria for Scleroderma.
Results: 72 patients (88% women, mean±SD age at diagnosis 48.5±16.7 years [range 15–87]) were identified, corresponding to a crude point prevalence of $13.8/10^5$ (CI 95% 11–17/10^5) (December 2015). The Incidence rate was estimated at $0.05/10^5$ per year (period 2010–2015). Diffuse SSc (dSSc) was present in 27.7%, limited SSc (lSSc) in 72.2%, while an overlap syndrome in 19.4% (9.7% with systemic lupus erythematosus). Frequencies of anti-Scl70 and anti-cectromere antibodies were 59.7% and 9.7%, respectively. Arthritis was present in 69.5%, lung involvement in 61% (9.7% pulmonary arterial hypertension [PAH]), whereas only a single patient developed renal crisis. 8.3% developed cancer. Case fatality rate during 2010–2015 was 9.7% (CI 95% 7.4–11.9) with an average (±SD) age of death at 65.2 (± 17.6) years. Mortality cases were related to SSc in 30.7%. The main cause of death was sepsis (30.8%) followed by PAH and cardiac arrest (15.4% each). Male gender ($p<0.001$) and presence of PAH (p=0.001) were related to mortality. Mean disease duration until death was 5.3

(±3.2) years in cases of SSc-related death, as compared to 18.3 (±11.0) years in deaths not related to SSc.
Conclusions: SSc prevalence (13,8/10^5) in Crete is consistent with previous (2002) Greek studies (15,4/10^5)[4] albeit lower compared to other European countries and USA[5]. Despite its rarity, the disease has significant burden. The SSc-related mortality occurs early in the disease course. Early recognition and treatment may decrease disease burden and improve the outcomes.
References:
[1] Chifflot H, et al Semin Arthritis Rheum. 2008 Feb;37(4):223–35.
[2] Maricq HR, et al Arthritis Rheum. 1989 Aug;32(8):998–1006.
[3] M. Elhai, C. et al Rheumatology (2012); 51(6):1017–1026.
[4] Alamanos et al Semin Arthritis Rheum. 2005 Apr;34(5):714–20.
[5] Mayes MD, Rheum Dis Clin North Am. 2003 May;29(2):239–54.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.2847

SAT0331 AMINAPHTONE INCREASES SKIN BLOOD PERFUSION AND IMPROVES CLINICAL SYMPTOMS IN PATIENTS WITH BOTH PRIMARY AND SECONDARY RAYNAUD'S PHENOMENON: AN OPEN SIX MONTH PILOT STUDY

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Background: Aminaphtone (1,4-Dihydroxy-3-methyl-2-naphthyl-4-aminobenzoate) is a vasoactive drug that was recently demonstrated to improve the symptoms of Raynaud's phenomenon (RP) and to down-regulate endothelin-1 production by endothelial cells (1–3).
Objectives: To evaluate skin blood perfusion and clinical symptom changes during aminaphtone treatment in patients with both primary and secondary RP, during a six-month follow-up.
Methods: Forty-six patients with active RP were enrolled during routine clinical assessment in November 2015 (11 primary RP, mean age 49±19SD years, mean RP duration 6±3 years; 35 secondary RP to systemic sclerosis, mean age 61±17 years, mean RP duration 11±9 years), after informed consent. Aminaphtone was administered 75 mg twice daily (off label) in addition to current treatments (the patients were on a stable drug regimen for at least two months before, which remained unmodified during the follow-up). Blood perfusion was measured by Laser Speckle Contrast Analysis (LASCA) and values recorded as perfusion units (PU) (4), at the level of fingertips, periungual areas, dorsum and palm of hands, and face, at baseline (T0), after one (T1), four (T4), twelve (T12) and twenty-four (T24) weeks of treatment. Raynaud's condition score (RCS) and both frequency and duration of Raynaud's attacks were assessed at the same time. Forty-six patients with RP (9 primary RP and 37 secondary RP to systemic sclerosis) not treated with aminaphtone were also enrolled as a control group and evaluated at T0 and T24.
Results: A progressive statistically significant increase of blood perfusion was observed from T0 to T12 in all skin areas analyzed (median PU at T0, T1, T4, T12, T24 respectively: fingertips 55, 88, 101, 107, 98 periungual areas 44, 88, 91, 92, 92; dorsum of hands 38, 61, 71, 75, 75; palm of hands 56, 85, 89, 94, 82; whole face 127, 138, 144, 159, 129; $p<0.001$ for all areas). From T12 to T24 was not observed any further increase of blood perfusion. A progressive statistically significant decrease of RCS (median at T0, T1, T4, T12, T24: 7, 6, 4, 4, 4; $p<0.0001$), frequency of Raynaud attacks/day (median: 2, 2, 1, 1, 1; $p<0.0001$) and Raynaud duration (median: 20, 20, 10, 4, 4 minutes; $p<0.0001$) was also recorded from T0 to T12. The results were similar in both primary and secondary RP patients (p=0.40). Aminaphtone administration had to be stopped in 2 patients due to headache, and one patient was lost during follow-up. Any statistically significant variation of blood perfusion was not observed in the control group (median PU at T0 and T24 respectively: fingertips 70, 71; periungual areas 68, 70; dorsum of hands 57, 57; palm of hands 59, 59; whole face 132, 130; p=n.s. for all areas).
Conclusions: This study demonstrates that aminaphtone treatment seems able to increase skin blood perfusion and to improve RP symptoms, even in patients affected by systemic sclerosis. These preliminary results should be further confirmed by a randomized clinical trial, also to assess the role that aminaphtone plays in the treatment/prevention of disease clinical complications.
References:
[1] Parisi S, et al. Am J Int Med 2015;3;204–9.
[2] Scorza R, et al. Drugs R D 2008;9:251–7.
[3] Salazar G, et al. Eur J Pharmacol. 2016;782:59–69.
[4] Ruaro B, et al. Ann Rheum Dis. 2014;73:1181–5.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.4470

SAT0332 HEPATOBILIARY INVOLVEMENT IN SYSTEMIC SCLEROSIS AND THE CUTANEOUS SUBSETS. CHARACTERISTICS AND SURVIVAL OF PATIENTS FROM THE SPANISH RESCLE REGISTRY

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Background: Hepatobiliary involvement (HBI) has been associated to systemic sclerosis (SSc). However, it is not considered as characteristic clinical manifestation of that autoimmune disease
Objectives: To assess the prevalence and causes of HBI in SSc and to investigate the clinical characteristics and prognosis of SSc patients with HBI (SSc-HBI) and without HBI (SSc-non HBI).
Methods: Up to January 2015, 1572 SSc patients were collected in the Registro de ESCLErodermia (RESCLE) and causes of hepatobiliary disturbances were recorded. We investigated the HBI related characteristics and survival from the entire cohort and according to the following cutaneous subsets: dcSSc, lcSSc, and SSc sine scleroderma (ssSSc).
Results: Out of 1572, 118 (7.5%) patients had HBI, and primary biliary cholangitis (PBC) was largely the main cause (n=67, 4.3%), followed by autoimmune hepatitis (n=19, 1.2%), and anti-mitochondrial negative PBC (n=6, 0.4%). Other causes of HBI were: secondary liver diseases (n=11, 0.7%), SSc-related HBI (n=7, 0.4%), nodular regenerative hyperplasia (n=3, 0.2%), liver cirrhosis (n=3, 0.2%), and unknown origin (n=2, 0.1%). In multivariate analysis, HBI was independently associated to lesser risk of dcSSc (5.1% vs 24.4%, OR: 0.18, p=0.005%), and higher frequency of calcinosis (26% vs 18%, OR: 1.80; p=0.028), left ventricular diastolic dysfunction (46% vs 27%, OR: 1.73; p=0.027), sicca syndrome (51% vs 29%, OR: 2.03; p=0.003), and anti-centromere antibodies (ACA, 73% vs 44%, OR: 1.86; p=0.023). According to the cutaneous subsets, HBI was associated: (1) in lcSSc subset, to longer time from SSc onset to diagnosis (10.8±12.5 vs 7.2±9.3, OR: 1.03; p=0.012), sicca syndrome (54% vs 33%, OR: 1.96; $p<0.001$), and ACA (80% vs 56%, OR: 2.64; $p<0.001$); and (2) in ssSSc subset, to sicca syndrome (44% vs 19%, OR: 3.43; p=0.018). No associations were found in dcSSc subset. HBI was the cause of death in 2.3% patients. Kaplan–Meier cumulative survival for the SSc cohort and the cutaneous subsets, according to the presence or absence of HBI showed no differences.
Conclusions: The prevalence of HBI in SSc was 7.5%. Primary autoimmune liver diseases accounted for 77% of all conditions. PBC was the main cause of HBI reaching 4.6% of the overall SSc cohort. Patients with HBI were rarely classified as dcSSc subset and the elapsed time from the first SSc symptom to SSc diagnosis was longer. Calcinosis cutis, diastolic dysfunction, sicca syndrome, and the presence of ACA were all independently associated to HBI. In lcSSc subset, HBI was associated to sicca syndrome and ACA but in ssSSc only sicca syndrome was more prevalent. HBI was the cause of death in 2.3%
References:
[1] Assassi S., Fritzler MJ, Arnett FC, et al., Primary biliary cirrhosis (PBC), PBC autoantibodies, and hepatic parameter abnormalities in a large population of systemic sclerosis patients. J Rheum 2009; 36: 2250–2256.
[2] Rigamonti C, Shand LM, Feudjo M, et al. Clinical features and prognosis of primary biliary cirrhosis associated with systemic sclerosis. Gut 2006; 55; 388–394.
Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.5745

SAT0333 PREVALENCE OF SARCOPENIA IN PATIENTS WITH SYSTEMIC SCLEROSIS ACCORDING TO THE REVISED CRITERIA OF THE EUROPEAN WORKING GROUP ON SARCOPENIA IN OLDER PEOPLE

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Background: Systemic Sclerosis (SSc) is a chronic inflammatory connective tissue disease that is often associated with gastrointestinal involvement and myopathy. Sarcopenia is defined as age-associated loss of muscle mass, strength and function with profound impact on functionality as well as on mortality (1). "Secondary sarcopenia" has now been described in the context of severe and chronic disease such as malignant disease or inflammatory disorders (2) and been linked to poor clinical outcome.
Objectives: Analysis of the prevalence of sarcopenia in patients with SSc with respect to clinical characteristics, quality of life and severity of physical impairment.
Methods: 129 patients were included. Sarcopenia was defined according to the