increased in both patient groups ($p<0.01$) and mDCs expressing CXCL8 only in lcSSc ($p<0.01$). SSc patients characterized by the presence or history of lung fibrosis, displayed a higher frequency of non-classical monocytes expressing CCL4 and CXCL10 in dcSSc patients as compared to those without this clinical manifestation ($p<0.01$ and $p<0.05$ respectively). Strikingly, the percentage of classical monocytes producing CXCL8 was augmented upon *in vitro* stimulation in lcSSc patients with lung fibrosis as compared to those without ($p<0.01$). No differences were found in the percentage of IL-6 producing cells.

Conclusions: These data point towards a role of activated non-classical monocytes and mDCs producing enhanced levels of proinflammatory cytokines in SSc, potentially contributing to lung fibrosis.

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Scleroderma, myositis and related syndromes

SAT0325 NAILFOLD CAPILLAROSCOPIC CHANGES IN PATIENTS WITH IDIOPATHIC AND SYSTEMIC SCLEROSIS-RELATED PULMONARY ARTERIAL IPERTENSION

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Background: Pulmonary arterial hypertension (PAH) represents one of the main clinical expression of the vascular changes in Systemic Sclerosis (SSc). Many clinical and experimental evidences suggest that lung microvascular changes play a role in the pathogenesis of idiopathic PAH (IPAH) also.

Objectives: The aim of this study is to investigate the presence of capillaroscopic abnormalities in patients with idiopathic PAH and to evaluate the differences in capillary naifold changes between patients with IPAH and SSc patients with and without PAH.

Methods: 37 subjects with SSc (of whom 17 with PAH), 21 subjects with IPAH and 20 healthy subjects were recruited. PAH was diagnosed by right heart chateterization. Periungual capillaroscopy was performed in all recruited subjects, considering the following parameters: loops length and width, capillary density, microhemorrhages, avascular areas, neoangiogenesis. To define the pattern of capillary changes in IPAH and healthy subjects a semiquantitative scoring (normal, minor abnormalities, major abnormalities) was used, whereas in SSc subjects the capillary changes were defined as early, active and late pattern.

Results: In all SSc subjects a capillaroscopic scleroderma pattern was found. Particularly, comparing SSc-PAH vs SSc-nonPAH we found an early pattern in 26,7% vs 50%, an active pattern in 66,6% vs 33,3% and a late pattern in a 6,6 vs 16,7% of subjects. None of IPAH subject presented a capillaroscopic scleroderma pattern, but interestingly in 36,4% of minor or major capillaroscopic changes were found. Analysing the single capillarocopic parameters, capillary density was lower in SSc subjects compared to the other groups; in SSc-PAH was lower than in SSc-nonPAH; in IPAH capillary density was lower compared to healthy control. Capillary width was higher in SSc patients compared to healthy and IPAH subjects, being higher in SSc-PAH compared to SSc-nonPAH. The number of megacapillaries, bushy capillaries and microhemorrages was significantly higher in patients with SSc-PAH compared to SSc-nonPAH patients. Interestingly, compared to healthy controls, the IPAH subjects presented a significantly lower capillary density and a significantly higher mean capillary width. Further, IPAH subjects presented a significant increase of number of microhemorrages and ectasic capillaries compared to healthy controls.

Conclusions: Microcirculation alterations, and particularly the reduction of capillary density and the increase od capillary width appears to be more severe in SSc subjects with PAH compared to SSc subjects without PAH. Capillaroscopic changes can be present in IPAH subjects also. These data support the hypothesis that in SSc peripheral microcirculation changes can be related to the entity of pulmonary microcirculation changes and that an altered vascular lung remodelling could play a role in IPAH also.

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SAT0326 THE ASSCOCIATION OF SERUM TYPE 1 INTERFERON ACTIVITY AND AUTOANTIBODIES IN INFLAMMATORY MYOSITIS

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Background: Recent reports had shown that most of clinically amyopathic dermatomyositis (CADM), which showed poor prognosis, was positive for anti-Melanoma differentiation-associated gene 5 (MDA5) antibody (Ab). It had been shown that patients not only with lupus but with dermatomyositis (DM) also showed increased type 1 interferon (IFN) signature. MDA5 acts as a cytosolic RNA sensor, which drives type 1 IFN production. These facts suggested that type 1 IFN might have some roles in anti-MDA5 Ab positive patients.

Objectives: We evaluated the association of serum type 1 IFN signature and autoantibodies in patients with inflammatory myositis, in particular anti-MDA5 Ab positive patients and anti-aminoacyl-tRNA synthetases (ARS) Ab positive patients.

Methods: Sera from 33 inflammatory myositis patients (13 DM, 10 PM and 10 CADM) were studied for type 1 IFN activity, using a functional reporter cell assay. Briefly WISH cells were incubated with serum containing media for 6 hours. Serum IFN signature scores of the incubated cells were evaluated by the sums of gene expressions of Mx1, IFIT3, IFI44L and IFI44 by real time PCR (Reference). Anti-MDA5 Ab and Anti-ARS Ab were measured by ELISA. We divided these patients into three groups, anti-MDA5 Ab positive group (MDA5 group), anti-ARS Ab positive group (ARS group) and double negative group (DN group). We included double positive patients into MDA5 group. The presence of interstitial lung disease (ILD) and the prognosis were also investigated.

Results: MDA5 group had 12 patients (8 CADM and 4 DM), ARS group had 8 patients (4 DM, 1 CADM and 3 PM), and DN group had 13 patients (5 DM, 1 CADM and 7 PM). 9 of MDA5 group, 5 of ARS group, and 1 of DN group were complicated with ILD. Serum IFN signature scores of MDA5 group were significant higher than those of ARS group and DN group (12.43 1.406, 2.407, p=0.0005). The most of ARS group showed low serum IFN signature activities. The overall survivals of ARS group were fairer than MDA5 group, but not significantly. The deceased cases of MDA5 group showed especially high serum IFN signature activities.

Conclusions: We characterized two major groups in inflammatory myositis patients. ARS group was characterized by low IFN signature with the susceptibility to DM and ILD. MDA5 group was characterized by high serum IFN signature with the high susceptibility to CADM. Our results suggest that these two entities may have different onset mechanisms, leading to different outcomes.

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SAT0327 NUTRITIONAL STATUS IN PATIENTS WITH SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a chronic connective tissue disease characterized by involvement of multiple organs. Many clinical aspects, such as gastrointestinal involvement, mood disturbances, functional status, and inflammation, may lead to disease-related malnutrition [1]. The connection between inadequate nutritional status and systemic sclerosis is still not well established. It is important to identify the symptoms of malnutrition, because it is known as a predictor of poor clinical outcome [2].

Objectives: To assess nutritional status in patients with systemic sclerosis.

Methods: The study involved fifty-two patients with SSc (44 women and 8 men, mean age 54,3±11,7 year) who were diagnosed according to ACR/EULAR criteria. The assessment of nutritional status was determined by subjective global assessment (SGA), body mass index (BMI) and level of serum albumin. Appetite was assessed by simplified nutritional appetite questionnaire (SNAQ). In all patients hand grip strength and triceps skinfold were established. The C-reactive protein (CRP), lipid profile, and level of haemoglobin/lymphocytes were measured in serum.

Results: Inadequate nutritional status was diagnosed in 14 patients (26,9%) with SSc. According to SGA 11 (21,15%) patients had signs of mild malnutrition, while 41 (78,85%) were well-nourished. Considering BMI, 1 patient (1,92%) was underweight, 24 (46,15%) were eutrophic, 21 (40,38%) overweight and 6 (11,54%) obese. Significantly lower BMI had patients with inadequate nutritional status (23,17±4,47 vs. 25,98±3,34; p=0,009). Low level of serum albumin was detected in 5 patients (9,6%) with SSc. Level of serum albumin and appetite were significantly decreased in patients with inadequate nutritional status (p=0,009; p=0,003). No statistical differences were noticed in hand grip strength, triceps skinfold, lipid profile, levels of CRP and haemoglobin/lymphocytes.

Conclusions: Malnutrition in systemic sclerosis is still underestimated clinical issue. This study provides useful data about nutritional status of patients with

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.

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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.
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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.

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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