Cytori, GSK, Genentech/Roche, Galapagos, Employee of: Elcos Sciences, Inc, Cathie Spino: None declared, Vivek Nagaraja: None declared, Robin Domsic Consultant for: Eicos Sciences Inc/Civi Biopharma and Boehringer-Ingelheim., Robert Lafyatis: None declared, Virginia Steen Consultant for: CSL Behring, Corbus and Bayer, Paid instructor for: Advisory Board: CSL Behring, Roach, Bayer and Reata, Jessica Gordon Grant/research support from: Corbus Pharmaceuticals
Cumberland Pharmaceuticals, Tracy Frech: None declared, Pei-Suen Tsou: None declared
DOI: 10.1136/annrheumdis-2019-eular.2122

SAT0280 ESOPHAGEAL DYSMOTILITY AND PULMONARY DISEASE IN PATIENTS WITH SCLERODERMA: A RETROSPECTIVE STUDY

Navya Kuchipudi¹, Shweta Kishore², Chia-Ling Kuo³, Santhanam Lakshminarayanan¹, Ranadeep Mandhadi¹. ¹University of Connecticut, Rheumatology, Farmington, United States of America; ²University of Mississippi Medical Center, Jackson, United States of America; ³University of Connecticut, Community Medicine and Health Care, Farmington, United States of America

Background: Systemic sclerosis (SSc) is a connective tissue disease with pulmonary involvement seen in 75% of patients and esophageal involvement in 90% of the patients. Pulmonary disease has overtaken renal disease as the leading cause of death (1). There is conflicting evidence about the association between esophageal dysmotility and lung involvement (Interstitial Lung Disease (ILD) and Pulmonary Artery Hypertension (PAH)).

Objectives: Our aim was to evaluate the relationship between esophageal dysmotility and lung disease by correlating the results of Echocardiogram and Pulmonary Function Test (PFT) with Esophageal Transit Study (ETT).

Methods: Charts of SSc patients fulfilling 2013 ACR/EULAR classification criteria seen in Rheumatology clinic from 2004 to 2015 were reviewed. Patient demographics, ETT result, FVC and DLCO data from PFT as well as pulmonary pressures from echocardiogram were collected at baseline, years 1, 3, 5 and 10. Patients were divided based on their initial ETT findings into normal and abnormal ETT groups. Using logistic regression models, we compared elevated PASP with ETT status at baseline, and years 3 and 5. Linear mixed effects model was used to adjust for covariates (disease subtype, smoking, obesity, use of immunomodulator) when analyzing PFT outcome with time period and ETT status

Results: 130 patients were identified with either Limited Cutaneous SSc (109) or Diffuse Cutaneous SSc (21) with a mean age of 52.65 years $\pm$ 12.59. ETT was normal in 67(52%) and abnormal in 63(48%) patients. Number of patients with abnormal PASP was not statistically different between the two groups (p values 0.104, 0.178, 0.653 at baseline, years 3 and 5 respectively). Likewise, the odds ratio for abnormal PASP was 2.75 in patients with abnormal ETT compared to normal ETT, but the results were not statistically significant (p: 0.428), and the odds ratio did not vary with time (p: 0.731). Sample size was too small to conduct separate longitudinal analysis for adjusted models. The mean DLCo was statistically worse in abnormal ETT patients [p value <0.0001 and 0.0004 for unadjusted and adjusted models] as were the progression rates per year for DLCo at -1.95 (p-value: 0.023) and -2.25 (p-value: 0.019) for unadjusted and adjusted models respectively. The Mean FVC was not statistically different between the two groups, although its progression rate per year was statistically worse only in the adjusted model (p value: 0.018).

Conclusion: Esophageal dysmotility was associated with increased pulmonary involvement in the form of abnormal DLCo with worsening progression rates per year. Interestingly, neither PASP nor FVC were statistically different even though progression rate for FVC was worse in adjusted models. We postulate that the small sample size for Echo and differences in the factors determining DLCo vs. FVC and PASP explains the disparity in the results. Larger prospective trials are needed to investigate if there is a causal relationship between esophageal dysfunction and pulmonary involvement.

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Disclosure of Interests: None declared
DOI: 10.1136/annrheumdis-2019-eular.1843

SAT0281 RELATIONSHIP BETWEEN AUTOANTIBODIES AND CYTOKINE PROFILES IN PATIENTS WITH MYOSITIS

Kazuhihiro Kurasawa, Satoko Arai, Yuta Takamura, Tomoyuki Miyao, Ayae Tanaka, Ryutaro Yamazaki, Takayoshi Owada, Reika Maezawa, Masafumi Arima. Dokkyo Medical University, Rheumatology, Mibu, Tochigi, Japan

Background: By autoantibodies, myositis is recently classified into subgroups with distinctive clinical features. Cytokines play critical roles in the development of the clinical features. However, it is not fully unknown whether myositis subgroups defined by autoantibodies have unique cytokine profiles.

Objectives: To clarify the relationship between cytokine profiles and autoantibodies in myositis.

Methods: Subjects were myositis patients who admitted Dokkyo Medical University and whose serum before starting therapy were available. Serum cytokine levels (IL-1a, 1b, 2, 4, 5, 6, 10, 12, 13, 15, 17, 23, IFN-g, TNF-a, IFN-a, b, IP-10 and MCP-1) in sera from the patients and controls were measured using Q-Plex™ Multiplex Arrays. Demographic and clinical data were obtained by reviewing medical record retrospectively.

Results: Subjects were 45 myositis patients with male/female; 22/23 and 59.4 years of mean age. Amyopathic dermatomyositis (ADM), classical DM and polymyositis (PM) were 21, 11 and 12 cases, respectively. Autoantibodies were anti-MDA5+ in 21, anti-ARS+ in 18 and anti-TIF1g+ in 5 cases. ILD and malignancy was complicated in 39 and 5 cases, respectively.

Serum cytokine levels were measured. As shown in Fig.1, IP-10 levels were increased in all types of myositis patients, but not in controls. In anti-MDA5 Ab + myositis, IL-6, IL-10, IL-15, TNF-a, IFN-a and MCP-1 levels were increased. In anti-ARS Ab+ cases, IFN-b levels were elevated as well as TNF-a and MCP-1.

Through the correlation analysis between cytokine levels, cytokine groups were identified (Fig.2). In anti-MDA5 Ab+ cases, 2 cytokine groups were identified; one includes IFN-a, IL-15, TNF-a and IL-10, and the other involved IL-6, MCP-1. Both groups connected with IP-10. In anti-ARS

Figure 1. Serum cytokine levels in myositis

Figure 2. Cytokine networks in a-ARS ab+ and a-MDA5 ab+ myositis