SLE clusters had similar levels of nucleic acid-specific AABs and Ro52 AABs, but were distinguished by significant differences in histone 2A (H2A) AAB levels. Renal manifestations were significantly enriched in the NA Ro52 cluster and the AA nucleolin/histone cluster compared to other SLE patient clusters of the same ethnicity.

Abstract THU0263 – Figure 1

Conclusion: Expanded AAb profiles can be used to identify SLE subsets that are more likely to have renal manifestations of disease.

REFERENCES:

- [1] Sánchez E, et al. Impact of genetic ancestry and sociodemographic status on the clinical expression of systemic lupus erythematosus in American Indian-European populations. *Arthritis Rheum.* 2012;64(11):3687-94.
- [2] Kheir JM, et al. Unique clinical characteristics, autoantibodies and medication use in Native American patients with systemic lupus erythematosus. *Lupus Sci. & Med.* 2018;5:e000247.

Acknowledgement: This research supported by the National Institute of Allergy and Infectious Disease (U19AI082714), National Institute of Arthritis, Musculoskeletal and Skin Diseases (P30AR053483, P30AR073750), and National Institute of General Medical Sciences (U54GM104938) of the US NIH. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health or the United States government.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.7526

THU0264

ANALYSIS OF SURVIVAL ASSOCIATED WITH PULMONARY ARTERIAL HYPERTENSION IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

Chi Ho¹, Erik Fung², Lai-Shan Tam². ¹Alice Ho Nethersole Hospital, Hong Kong (SAR), China; ²The Chinese University of Hong Kong, Department of medicine and therapeutic, Hong Kong, China

Background: Identifying clinical variables that predict outcome of Systemic lupus erythematosus (SLE)-pulmonary arterial hypertension (PAH) is important.[1] Data focusing on SLE-PAH is lacking as previous studies were based on connective tissue disease (CTD)-PAH patients.

Objectives: To examine clinical, serological and echocardiographic features that are 1) associated with SLE-PAH at baseline and 2) predictors of mortality in SLE-PAH.

Methods: Data on SLE-PAH patients (SLE-PAH group, n=67) attending the Prince of Wales Hospital, from 2008 to 2018 was retrieved. Diagnosis of PAH was based on echocardiogram showing pulmonary artery systolic pressure (PASP) > 30mmHg. Age-, sex- and disease duration-matched SLE patients with PASP < 30mm Hg were selected from the same database as control (SLE-non PAH group, n=154). Clinical, serological, echocardiographic features and medication at baseline (PAH diagnosis) were collected. Censor date was death or last visit on or before 31st December 2018. PAH targeted therapy and immunosuppressant used for PAH were recorded after diagnosis of PAH. Hazard ratio were analysed by cox regression model, and adjusted by age-, sex-, disease-duration, comorbidities and baseline medication.

Results: The cohort (n=221) mean age was 42.7 +/- 12.6 with 96.3% female, and a disease duration of 8.26 +/- 7.61 years. At baseline, the SLE-PAH group had higher anti-ds DNA titre; lower haemoglobin level; higher prevalence of renal impairment; but a lower prevalence of arthritis and thrombocytopenia/neutropenia and anti-phospholipid antibodies compared to the control (Table 1). SLE-PAH group's echocardiogram had a higher prevalence of reduced left ventricular ejection fractions, moderate-

severe tricuspid regurgitation and pericardial effusion compared to the control (Table 1). Amongst the SLE-PAH group, 11/67 had a right heart catheterization done and all were confirmed to have PAH. 8/11 patients received PAH specific treatment and 23/67 received escalated immunosuppressive therapy for presumed PAH, within 1 years of PAH diagnosis. The mortality rate of the SLE-PAH group was 3.82 (95% confident interval 1.50-9.83; p=0.005) compared to the control after adjusting for baseline parameters and medication used after the diagnosis of PAH. Poor prognostic factors at baseline are summarized in table 2.

Table 1. Comparison between SLE-PAH and control at baseline

	SLE non-PAH (N=154)	SLE-PAH (N=67)	p-value
Female	149 (96.8%)	64 (95.5%)	0.701
Age, Mean (SD)	41.84 (11.76)	44.78 (14.18)	0.111
Follow up time (year) [Median (IQR)]	9.78 (4.39-12.42)	8.24 (4.54-12.07)	0.835
Disease duration (year), Median (IQR)	6.85 (1.29-11.77)	7.33 (0.94-15.06)	0.681
Death at end of follow up (%)	8/154 (0.05%)	14/67 (20.1%)	0.001
Renal impairment	25/154 [16.3%]	19/67 [29.7%]	0.026
Arthritis	91/154 [59.9%]	29/67 [43.3%]	0.023
Thrombocytopenia/neutropenia	78/154 [51.3%]	24/67 [35.8%]	0.047
Anti-ds DNA titre (median [IQR])	52 IU/ml [IQR 0-292.5]	160 IU/ml [IQR 0-789.5]	0.036
Haemoglobin (median [IQR])	11.7 g/dL [IQR 10.5-12.9]	10.8 g/dL [IQR 10-10.2]	0.009
Anti-phospholipid antibodies	38/154 [25.5%]	8/67 [12.1%]	0.027
Reduced left ventricular ejection fractions	1/154 [0.6%]	6/67 [9%]	0.003
Moderate-severe tricuspid regurgitation	2/154 [1.3%]	20/67 [29.9%]	<0.001
Pericardial effusion	22/154 [14.3%]	17/67 [25.4%]	0.047

Table 2. Predictors of mortality in SLE-PAH at baseline

	Alive (N=53)	Death (N=14)	p-value
Hyponatremia	7/49 [14%]	4/12 [30.8%]	p=0.011*
Renal impairment	11/51 [21.6%]	8/13 [61.5%]	p=0.007*
Severe tricuspid regurgitation	2/53 [3.8%]	2/14 [14.3%]	p=0.071

Conclusion: SLE-PAH had 3.8-fold increase in mortality despite treatment with PAH specific therapy and immunosuppressants. Hyponatremia and renal disease were associated with poor survival outcome in SLE-PAH patients.

REFERENCE:

- [1] Raina, A, et al. *European Respiratory Review*, 2016

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.5714

THU0265

IDENTIFYING COMORBID FIBROMYALGIA IN SYSTEMIC LUPUS ERYTHEMATOSUS USING PATIENT-REPORTED OUTCOMES

Frank Huang¹, Sean O'Neill^{1,2,3}, Ray Fang¹, Matthew Nguyen¹, Kathryn Gibson^{1,2,3}. ¹University of New South Wales, Sydney, Australia; ²Liverpool Hospital, Sydney, Australia; ³Ingham Research Institute, Sydney, Australia

Background: Fibromyalgia (FM) is disproportionately common in patients with systemic lupus erythematosus (SLE) and difficult to diagnose on a background of classical SLE symptoms [1]. The Multi-Dimensional Health Assessment Questionnaire (MDHAQ) has been shown to be useful to recognise improvement over 2 months in a variety of rheumatic conditions including SLE [2] but has not previously been shown to be useful to alert the clinician to comorbid FM in the latter condition. Conversely, the 2011 FM self-report questionnaire is disease-specific and available for use in clinical and epidemiological studies. Administration of multiple forms may be difficult in a busy clinical setting.

Objectives: To identify comorbid FM in patients with SLE using patient-reported outcomes (PROs) from the routinely distributed MDHAQ, in comparison to the 2016 revision of the 2010/2011 FM criteria.

Methods: Patients with SLE completed an MDHAQ and the 2011 FM Criteria questionnaire. FM status was assigned using the 2016 revision of the 2010/2011 FM criteria as the gold standard. The MDHAQ features

six main PROs: body pain, patient global and fatigue score on a 0-10 visual analogue scale, as well as a functional impact score, self-report joint count and symptom checklist which have a range of 0-10, 0-48 and 0-60 respectively. Composite indices consisting of either two or three of patient pain score 6, self-report joint count 16 and symptom checklist 16 or three of four of the same measures plus a fatigue score 6 have been described previously to provide clues to comorbid FM in other rheumatic diseases [3,4]. Individual PROs and these composite indices were compared between patients with and without FM by student's unpaired t-test and Area Under the Curve (AUC) analysis. The physician's diagnosis of FM was analysed against the FM criteria using Cohen's kappa. Physicians were blinded to the results of the 2016 FM criteria.

Results: 88 patients with SLE were studied, of whom 23 (26%) satisfied FM criteria. Those with FM reported higher scores in all PROs. A patient global of 6 could correctly classify 90% of patients and provided the highest AUC of 0.95, followed by the symptom checklist and body pain. An index of three measures (pain score, self-report joint count and symptom checklist) gave an AUC of 0.90. An index of four measures (additional fatigue criterion) gave an AUC of 0.93. Both indices correctly classified 89% of patients with a cut-off of 2 and 3 respectively. The physician's diagnoses had moderate agreement with the FM criteria (kappa = 0.43).

	AUC	Sensitivity	Specificity	Correctly classified
3 PROs (≥ 2)	0.90	78%	92%	89%
4 PROs (≥ 3)	0.93	74%	94%	89%
Patient global (≥ 6)	0.95	91%	89%	90%

Conclusion: Comorbid FM is prevalent in SLE yet often missed by physicians. In busy clinical settings, composite indices provide useful clues to coexisting FM in SLE, although a simple MDHAQ patient global is quick and potentially just as valuable in this patient group. These findings require further validation in a larger cohort.

REFERENCES:

- [1] Wolfe F, Petri M, Alarcon GS, Goldman J, Chakravarty EF, Katz RS, et al. Fibromyalgia, systemic lupus erythematosus (SLE), and evaluation of SLE activity. *J Rheumatol*. 2009;36(1):82-8.
- [2] Castrejon I, M.J. Bergman, and T. Pincus, MDHAQ/RAPID3 to recognise improvement over 2 months in usual care of patients with osteoarthritis, systemic lupus erythematosus, spondyloarthritis, and gout, as well as rheumatoid arthritis. *J Clin Rheumatol*. 2013. 19(4):p.169-74
- [3] Gibson K et al. 2016 MDHAQ as a useful screening tool for fibromyalgia in busy clinical settings *Ann Rheum Dis*, volume 75, supplement 2, page 88
- [4] Schmuckler J, et al. 2018 A simple index based on scores on a multidimensional health assessment questionnaire (MDHAQ) provides information quite similar to ACR criteria for fibromyalgia in routine care *Ann Rheum Dis*, volume 77, Suppl, page A465

Disclosure of Interests: Frank Huang: None declared, Sean O'Neill: None declared, Ray Fang: None declared, Matthew Nguyen: None declared, Kathryn Gibson Grant/research support from: UCB, Abbvie, Speakers bureau: UCB, Janssen

DOI: 10.1136/annrheumdis-2019-eular.6603

THU0266 ULTRASONOGRAPHY IN THE DIAGNOSIS OF LOWER LIMB ENTHESOPATHY IN A COHORT OF SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS: RELATION TO THE DISEASE ACTIVITY

Reem A. Habeeb, Maryam A. Abdel Rahman, Dalia Abdel Hamid Elsherbiny, Safaa A. Hussein, Heba A. Mustafa. *Internal Medicine Department, Division of Rheumatology, Ain Shams University, Cairo, Egypt*

Background: Systemic lupus erythematosus (SLE) is a chronic inflammatory autoimmune disease characterized by variable clinical manifestations due to different organ involvement¹. Musculoskeletal involvement is extremely common in patients with SLE. Musculoskeletal ultrasound (MSUS) is an important tool for evaluation of patients with inflammatory arthritis and early detection of subclinical inflammation at the joint, tendon and enthesal level².

Objectives: To investigate the presence of enthesal abnormalities in SLE patients and correlating it with parameters of disease activity.

Methods: In this cross-sectional study we evaluated 50 patients with SLE who fulfilled the 2012 ACR/SLICC criteria³. Patients underwent clinical,

laboratory and ultrasonographic examination of both lower limbs at the sites of entheses. Disease activity was assessed by using the SLE disease activity index (SLEDAI)⁴. The scanned entheses were those included in the Glasgow Ultrasound Enthesitis Scoring System (GUESS)⁵. The anatomical sites were scanned bilaterally, both in longitudinal and transverse planes, in grey-scale (GS) and power Doppler (PD) mode. Ultrasonography was performed using (esaote) MyLab™Six ultrasound machine, equipped with a 6-18 MHz linear probe.

Results: In our cohort of 50 SLE patients we found 29 patients had clearly evident MSUS features of enthesopathy (58%) and 16 patients with minimal and isolated enthesal abnormalities (32%). Five patients had normal MSUS findings with no evidence of enthesal affection (10%). The mean of total GUESS score of all patients was 3.54 ± 2.6 . MSUS examination of the quadriceps tendon insertion at the patella revealed mean thickness of 5.89 ± 0.7 mm, the patellar tendon attachment at the patella (proximal) was 4.26 ± 0.84 mm and the mean thickness of the patellar tendon at the tibial insertion (distal) was 4.08 ± 0.7 mm. The Achilles tendon insertion at the superior pole of calcaneus and the plantar fascia insertion at inferior pole of calcaneus were 4.2 ± 0.7 and 3.7 ± 0.7 mm respectively. Age, body mass index (BMI), SLEDAI score, and ESR; had a highly significant positive correlation with GUESS score. The increase in BMI, SLEDAI score and creatinine; had an independent effect on increasing GUESS score.

Conclusion: Lower limb enthesopathy is common in SLE patients and considered one of the important causes of knee and ankle joints pain. Enthesal involvement in SLE patients is affected by variable parameters, mainly disease activity. Enthesal abnormalities can be early detected by ultrasonography even in clinically asymptomatic SLE patients without evidence of clinical symptoms and/or signs of enthesal affection.

REFERENCES:

- [1] Alyoussef A, Alassar B, Mohammed O, et al. Patterns of systemic lupus erythematosus in Tabouk, Saudi Arabia. *Indian Journal of Applied Medical Research*. 2016; 5(2): 23-28.
- [2] Gutierrez M, Filippucci E and De Angelis R. Subclinical enthesal involvement in patients with psoriasis: An ultrasound study. *Semin Arthritis Rheum* 2011; 40: 407-412.
- [3] Petri M., Orbai AM., Alarcón GS, et al. Derivation and Validation of the Systemic Lupus International Collaborating Clinics Classification Criteria for Systemic Lupus Erythematosus. *Arthritis Rheum*. 2012; 64: 2677-86.
- [4] Bombardier C, Gladman D, Urowitz M, et al. Derivation of the SLEDAI. A disease activity index for lupus patients. The Committee on Prognosis Studies in SLE. *Arthritis Rheum* 1992; 35: 630-640.
- [5] Balint PV, Kane D, Wilson H, McInnes IB, Sturrock RD. Ultrasonography of enthesal insertions in the lower limb in spondyloarthritis. *Ann Rheum Dis* 2002; 61: 905-910.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.6371

THU0267 THE SLE DISEASE ACTIVITY SCORE (SLE-DAS) ENABLES ACCURATE DEFINITIONS OF SLE REMISSION AND LDA AS ACHIEVABLE TARGETS IN DISEASE MANAGEMENT

Diogo Jesus^{1,2}, Ana Matos^{3,4}, Carla Henriques^{3,5}, Margherita Zen⁶, Maddalena Larosa⁶, Luca Iaccarino⁶, Andrea Doria⁶, Luís Inês^{1,2}. ¹Centro Hospitalar e Universitário de Coimbra, Rheumatology Department, Coimbra, Portugal; ²University of Beira Interior, Faculty of Health Sciences, Covilhã, Portugal; ³Polytechnic Institute of Viseu, School of Technology and Management, Viseu, Portugal; ⁴Polytechnic Institute of Viseu, Center for Research in Digital Services, Viseu, Portugal; ⁵University of Coimbra, Centre for Mathematics, Coimbra, Portugal; ⁶University of Padova, Division of Rheumatology, Padova, Italy

Background: The treat-to-target strategy in Systemic Lupus Erythematosus (SLE) aims to achieve remission. However, to define a target based on the SLE Disease Activity Index (SLEDAI) is questionable, due to its limitations (especially its dichotomous nature). The SLE Disease Activity Score (SLE-DAS) is a recently validated continuous disease activity score which has a higher accuracy in measuring SLE activity and a higher sensitivity-to-change compared to SLEDAI.¹

Objectives: To assess the ability of SLE-DAS to define SLE remission and other disease activity states.

Methods: Cross-sectional study of SLE patients fulfilling the ACR'97 and/or SLICC'12 classification criteria and followed at the Padua Lupus Clinic from March to June 2018. At each outpatient visit, the attending clinician scored SLE disease activity (in the last 30 days) using Physician Global