addition, anti PS/PT (IgG and IgM), aCL (IgG and IgM) and anti B2GP1 (IgG and IgM) were measured at the same time by ELISA techniques (QUANTA Lite, Inova Diagnostics). Lupus anticoagulant was detected according to the guidelines of the International Society on Thrombosis and Haemostasis. Differences in mean values between groups were analysed with the Mann-Whitney U test for comparison of 2 groups

Results: One hundred and seventy three patients were included, 87% of patients were female with a mean age of 33 ± 12 years. 150 patients had SLE and 23 patients primary APS. Fifty five (31%) out of 177 had history of thrombosis and 41 (23%) of pregnancy losses. Levels of IgM aCL, IgM B2GP1, IgM Anti PS/PT and total antibodies against Anti-D1 B2GP1 were significantly higher in patients with primary APS than in patients with SLE and thrombosis (see figure 1). IgG anti PS/PT (75.9 ± 91.3 vs 27.4 ± 39.3 IU, $p < 0.001$) and total anti-D1 B2GP1 (65.2 ± 152 vs 16.4 ± 65.1 IU, $p < 0.001$) were significantly higher in patients with SLE with thrombosis than in patients with SLE without thrombosis. Obstetric morbidity (66.7% vs 21.7%, $p = 0.016$) and *livedo reticularis* (22% vs 0%, $p > 0.07$) were more common in patients with primary APS than SLE with thrombosis. No significant differences were found in terms of thrombotic events among both groups

Abstract SAT0439 – Figure 1. aPL levels according diagnosis (IgM for aCL, anti B2GP1 and anti PS/PT and total antibodies against Anti-D1 B2GP1)

Conclusions: Patients with primary APS have significant higher serum levels of anti PS/PT and anti-D1 B2GP1 antibodies and “classic” aPL (aCL and anti B2GP1) antibodies than patients with SLE with thrombosis. Whether if these titers are useful to differentiate patients with primary and secondary APS requires further analysis in prospective studies.

Acknowledgements: Anti D1- B2GP1 antibodies were provided by Inova, Werfen, Colombia

Disclosure of Interest: J. A. Gómez-Puerta Speakers bureau: Werfen/Inova, T. Urrego: None declared, A. Hernández: None declared, S. Ruiz: None declared, S. M. Osorno: None declared, C. Rua: None declared, J. Duque Botero: None declared, A. Vanegas-García: None declared, C. H. Muñoz: None declared, L. A. González: None declared, G. Vásquez: None declared
DOI: 10.1136/annrheumdis-2018-eular.4588

SAT0440 PHENOTYPIC FEATURES AND PREDICTORS OF THE CLINICAL SEVERITY OF KERATOCONJUNCTIVITIS SICCA AND SALIVARY GLAND DYSFUNCTION IN PATIENTS WITH SJÖGREN'S SYNDROME: A LONGITUDINAL ANALYSIS OF THE KISS COHORT

J.H. Koh¹, Y.S. Suh², J. Lee³, S.-K. Kwok⁴, S.-H. Park³. ¹Division of Rheumatology, Department of internal medicine, Pusan National University Hospital, Pusan; ²Division of Rheumatology, Department of internal medicine, Gyeongsang National University Changwon Hospital, Changwon; ³Division of Rheumatology, Department of Internal medicine; ⁴Division of Rheumatology, Department of Internal medicine, Seoul St.Mary's hospital, the Catholic University of Korea, Seoul, Korea, Republic Of

Background: Hyposecretion of tears and saliva is the main phenotype of primary Sjögren's syndrome (PSS). However, the prevalence and degree of ocular and oral involvement in PSS is highly variable.

Objectives: The aims of this study were 1) to investigate oral and ocular signs and changes in primary SS patients, and 2) to explore possible predisposing factors for moderate to severe oral or ocular signs in primary SS.

Methods: We analysed 140 participants from the Korean Initiative of PSS cohort who completed a two-year follow-up oral and ocular sign test. The severity of keratoconjunctivitis sicca (KCS) was determined by the Schirmer I test (Moderate-to-severe [MS], ≤ 5 mm/5 min; mild [Mi], > 5 mm/5 min). Salivary gland dysfunction (SGD) was determined by unstimulated whole salivary flow rate (UWS) (MS, UWS < 0.1 ml/min; Mi ≥ 0.1 ml/min). Subgroups were divided into three groups according to the severity of KCS and SGD: MS-KCS/MS-SGD, MS-KCS/Mi-SGD, and Mi-KCS/MS-SGD group. We analysed the severity of changes in KCS and SGD during the follow-up period.

Results: Among the 140 participants enrolled in this study, 108 (61%) were placed in the MS-KCS/MS-SGD group, 17 (24%) were in the MS-KCS/Mi-SGD, 15 (16%) were in the Mi-KCS/MS-SGD at the two-year follow-up. The MS-KCS/Mi-SGD group was younger than the other two groups, had a lower xerostomia inventory, and lower level of $\beta 2$ microglobulin. Participants in the Mi-KCS/MS-SGD group had less hyperimmunoglobulinemia, rheumatoid factor (RF), antinuclear antibodies, anti-Ro, and anti-La antibodies. Older patients and those with positive RF, anti-Ro, or anti-La antibodies at baseline were more likely to have moderate to severe KCS at the two-year follow-up.

Conclusions: Patients with PSS and positive RF, anti-Ro, or anti-La antibodies at baseline may benefit from regular ophthalmology exams, even if they do not have KCS at baseline or dry eye symptoms.

REFERENCES:

- [1] Le Gall M, Cornec D, Pers J-O, Saraux A, Jousse-Joulin S, Cochener B, et al. A prospective evaluation of dental and periodontal status in patients with suspected Sjögren's syndrome. *Joint Bone Spine*. doi:http://dx.doi.org/10.1016/j.jbspin.2015.02.015.
- [2] Lim SA, Nam S, Kwok SK, Park SH, Chung SH. Serologic Markers Are Associated With Ocular Staining Score in Primary Sjogren Syndrome. *Cornea* 2015;34:1466–70.
- [3] Shiboski CH, Baer AN, Shiboski SC, Lam M, Challacombe S, Lanfranchi HE, et al. Natural History and Predictors of Progression to Sjogren's Syndrome Among Participants of the Sjogren's International Collaborative Clinical Alliance Registry. *Arthritis Care Res (Hoboken)* 2017. doi:10.1002/acr.23264.

Acknowledgements: We wish to thank So Young Kim, the research nurse for the KISS cohort, for her excellent support.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3615

SAT0441

PREDICTIVE VALUE OF ANTIPHOSPHOLIPID ANTIBODIES IN THE ACUTE PHASE OF DEEP VEIN THROMBOSIS

K. Perdan Pirkmajer¹, A. Boc², S. Čučnik¹, A. Mavri³, P. Žigon¹, E. Podovšnik⁴, M. Štalc⁵, N. Vene³, A. Ambrožič¹. ¹Department of Rheumatology, University Medical Centre Ljubljana; ²Institute of Anatomy, Faculty of Medicine; University of Ljubljana; ³Department of Vascular Diseases, University Medical Centre Ljubljana; ⁴Faculty for Tourism Studies University of Primorska, Capodistria; ⁵Department of Nuclear Medicine, University Medical Centre Ljubljana, Ljubljana, Slovenia

Background: Deep vein thrombosis (DVT) is frequent and potentially life threatening disease with tendency to reoccur. Anticoagulant treatment of the first episode of DVT usually lasts 3 months. Antiphospholipid syndrome (APS) is an important cause of DVT. However, the APS can be confirmed only 24 weeks after DVT according to the current APS classification criteria.¹ Thus, undiagnosed APS patients, who cease anticoagulant therapy after 3 months, might be exposed to a greater risk for recurrent venous thromboembolism. Studies evaluating the significance of positive antiphospholipid antibody (aPL) test in the acute phase of DVT are lacking.

Objectives: To evaluate whether positive aPL test at the time of acute DVT diagnosis is predictive of APS.

Methods: Patients with acute DVT were included into a 24 month prospective study. All patients were given anticoagulants. aCL IgG/IgM and anti-β2GPI IgG/IgM/IgA antibodies were determined by our in-house ELISA² at inclusion and then every 4 weeks for the first 24 weeks. The last aPL measurement was performed 24 months after inclusion into the study. APS was confirmed if a patient tested positive (medium or high positive aCL and/or presence of anti-β2GPI) 12 and 24 weeks after DVT. Lupus anticoagulants (LA) were tested after cessation of anticoagulation.

Results: 196 patients (111 male, 85 female, age 54±2 years) included in the study had aPL titer assessed at least 5 times. Ultimately, 20/196 (10.2%) patients fulfilled APS classification criteria. Among these, 15/20 (75%) patients had medium or high titer aPL at the time of acute DVT (1 of them had double positive aPL and 2 of them had multiple positive aPL at first aPL determination). Two patients (10%) had low positive aCL IgG and one had low titer aCL IgM. Two patients (10%) were negative for aPL, but had later fulfilled APS criteria due to positive LA. APS was not established in 176/196 (89.8%) patients. Among these, 146/176 (83%) patients were negative for aPL at inclusion, while 30/176 (17%) had low titer aCL IgM or aCL IgG. Altogether, diagnostically important aCL IgG/IgM and/or anti-β2GPI titer at the time of acute DVT had 83% specificity and 90.5% sensitivity for APS. Isolated low titer aCL IgG were more frequent in patients with APS than in patients without APS ($\chi^2=125.6$; $p<0.001$). Completely negative aCL IgG/IgM and anti-β2GPI in the acute phase of DVT had a negative predictive value of 98.6%.

Conclusions: Here we show that in acute phase of DVT, positive medium or high titer aCL IgG/IgM or anti-β2GPI is suggestive of APS. In these patients continuation of anticoagulation beyond the initial 3 months should be considered. Patients with negative aPL in the acute phase of DVT do not need further aPL testing; however, LA should be determined. Low aPL titre at the time of acute DVT deems further testing imperative.

REFERENCES:

- [1] Miyakis S, et al. *Thromb Haemost* 2006;4:295–306.2.
- [2] Cucnik S, et al. *Clin Chem Lab Med* 2000;38:777–783.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3912

SAT0442

RISK FACTORS FOR HEART VALVE DISEASES IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME

K. Hiramoto, J. Kikuchi, Y. Kaneko, T. Takeuchi. *Division of Rheumatology, Department of Internal Medicine, Keio University School of Medicine, Tokyo, Japan*

Background: Antiphospholipid syndrome (APS) patients are known to be at a high risk of heart valve diseases (HVDs), however, risk factors of HVDs in APS patients is unclear.

Objectives: The purpose of this study is to elucidate risk factors for HVDs in patients with APS.

Methods: We reviewed consecutive APS patients diagnosed according to the Sydney criteria in 2006 who had been followed in Keio University Hospital in October 2017. The presence of HVDs was identified by the latest transthoracic and/or transesophageal echocardiography. HVDs were defined any kind of valve diseases such as mitral valve regurgitation (MR) and stenosis more than mild degree, aortic valve regurgitation (AR) and stenosis more than mild degree and Libman-Sacks endocarditis. Antiphospholipid antibodies (aPLs) included lupus

anticoagulant (LA), anticardiolipin antibodies (aCL), and anticardiolipin β2-glycoprotein I complex antibodies (aCL-β2GPI). We divided the patients into two groups by the presence of HVDs, and evaluated the risk factors of them.

Results: Fifty-five APS patients were identified. Among them, 43 patients underwent echocardiography and enrolled in the analysis. Six patients were primary APS, 36 were secondary APS with systemic lupus erythematosus, and one with Sjögren syndrome. HVDs were detected in 26 (60.5%) patients including 20 patients with MR, 8 patients with AR and a patient with Libman-Sacks endocarditis. The use of prednisolone, miscarriage episodes and the presence of arterial or venous thrombosis in patients with HVDs did not differ from those without HVDs. Immunologically, there was no significant difference in anti-double-stranded DNA antibody, anti-Smith antibody, anti-ribonucleoprotein antibody, anti-SSA/La antibody and anti-SSB/Lo antibody between patients with or without HVDs. While the positivity of aCL or aCL-β2GPI was not different between patients with HVDs and those without, positive LA was much higher in patients with HVDs and in patients with MR than those without (88.5% vs 35.3%, $p<0.01$; 85.0% vs 52.2%, $p=0.027$, respectively). In addition, patients with HVDs had double and triple positive tests of aPLs significantly more frequently than those without HVDs ($p=0.010$ and $p=0.023$, respectively[Y1]). Hospitalisation risk in patients with HVDs because of heart failure or syncope were 0.011/patient year.

The proportions of positive aPLs in APS patients with HVDs and without them.

Conclusions: Positive LA test and positivity for 2 or more tests of aPLs are risk factors for HVDs in patients with APS. Regular monitoring cardiac ultrasonography is needed in those patients.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5448

SAT0443

DIAGNOSTIC AND PREDICTIVE EVALUATION USING SALIVARY GLAND ULTRASONOGRAPHY IN PRIMARY SJOGREN'S SYNDROME

K.-A. Lee, S.-H. Lee, H.-R. Kim. *Konkuk University Medical Center, Seoul, Korea, Republic Of*

Background: There is an increasing need for alternative, non-invasive and reliable diagnostic tools with the potential to improve and simplify the diagnostic process for primary Sjogren's syndrome (pSS). The main advantage of salivary gland ultrasonography (SGUS) is the direct visualisation of structural abnormalities of the salivary glands. Despite these advantages of SGUS, a number of obstacles remain. Different SGUS scoring systems in B-mode were used in previous studies. The diagnostic usefulness of Doppler analysis and glandular size measurement has not been established. Indeed there is no proven prognostic factor for glandular damage in pSS, although a number of studies have revealed the risk factors for lymphoma.

Objectives: We aimed to assess the diagnostic value of SGUS as a single test for the detection of pSS in an integrated manner. We assessed the diagnostic accuracy of three SGUS parameters: the ultrasound (US) grey-scale scoring system, glandular volume measurement, and intraglandular power Doppler US. The secondary aim was to examine the prognostic factors for severe structural changes in major salivary glands based on the SGUS scoring system.

Methods: Patients with pSS (n=94) and idiopathic sicca syndrome (n=44) were evaluated using the SGUS 0–48 scoring system, which comprises five parameters: parenchymal echogenicity, homogeneity, hypoechoic areas, hyperechoic reflections, and clearness of posterior borders (figure 1). The salivary gland volume and intraglandular power Doppler signal (PDS) were also assessed. A multivariate linear regression analysis was performed to determine the factors associated with SGUS score.