months after vaccination. During the observation period, none of the patients had an exacerbation of the disease, reliably associated with the vaccination. There was no recurrence of thrombosis, both in patients receiving anti-coagulant ther-

apy and without it. No new autoimmune phenomena, both clinical and laboratory, were identified. The dynamics of the production of anti-streptococcal antibodies during the year was followed in 16 patients. One year after vaccination, 31% of patients showed a significant (more than 2-fold compared to the initial) increase in the concentration of antibodies to polysaccharides of the cell wall of S. pneu-
moniae ("responders"), 69% of patients were "non-responders" to the vaccine. At the same time, all 5 patients with PAPS were "non-responders," and 45.5% "responders" with sAPS.

Conclusion: Preliminary results show that patients with APS tolerate PPV-23 vaccination well. In the next post-vaccination period, exacerbations of the dis-

ease, thrombosis were not recorded. Attention is drawn to the large number of "non-responders" in PAPS, however, to obtain statistically reliable results, it is necessary to continue the study and recruit more patients.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.1447

AB0311 INCREASED LEVELS OF SERUM WISTERIA FLORIBUNDA AGGLUTININPOSITIVE MAC-2 BINDING PROTEIN IN RHEUMATIC DISEASES INCLUDING SLE

T. Yoshikawa1, K. Azuma1, T. Furukawa1, M. Tamura1, T. Hashimoto1, M. Morimoto1, N. Azuma1, K. Matsui1. Hyogo College of Medicine College Hospital, Division of Allergology and Rheumatology, Department of Internal Medicine, Nishinomiya-City, Japan

Background: Mac-2 binding protein is a cell-adhesive glycoprotein of the extracellular matrix secreted as a ligand of galectin-3 (Mac-2). Recently, a Wisteria floribunda agglutinin positive-M2BP (M2BP) assay developed using a lectin-antibody sandwich immunocassay has shown promise as a new fibrotic marker in liver fibrosis and interstitial lung disease (ILD) to detect unique fibrosis-related glycoalteration. Objectives: The aim of this study is to evaluate the utility of serum Mac-2 binding protein glycosylation isomer (M2BPGi) levels in patients with rheumatic diseases (RD).

Methods: We retrospectively measured serum M2BPGi levels in 68 patients with RD and 16 healthy controls (HC). There were no patients of cirrhosis and active hepatitis. Serum levels of M2BPGi were measured using HISCL M2BP glycosyl-

ation Assay Kit. We examined the relationship between serum M2BPGi levels and clinical parameters in patients with RD.

Results: In patients with RD, the median age was 62.0 years and 79.4% of them were female. Serum M2BPGi levels were significantly higher in patients with RD than in HC (median 0.98 cutoff index [COI], 0.32 COI, respectively; P < 0.00001). Patients with SLE tended to have higher serum M2BPGi levels than other rheumatic diseases. In patients with RD, a significant correlation was not found between serum M2BPGi levels and inflammation markers such as CRP or ferritin. However, serum M2BPGi levels were significantly correlated with B cell activation markers such as immunoglobulin free light chain and IgG (r = 0.588, 0.504) and T cell activa-

tion marker such as sIL-2R (r = 0.408).

Conclusion: Most of the rheumatic diseases in this study were considered to be type I interferonopathy diseases such as rheumatoid arthritis, Sjogren's syn-
drome, inflammatory myositis, scleroderma and SLE. Serum M2BPGi was reported to have a significant correlation with SLE disease activity [SS Aih et al. Lupus. 2018; 27: 771], and also to have a significant cor-

relation with Gakelitn-9, a novel biomarker for IFN signature [Lucas L van den Hoogen et al. Ann Rheum Dis. 2018; 77: 1810]. So, it was suggested that serum M2BPGi may be a novel biomarker that indi-
rectly indicates how much IFN is activated in rheumatic diseases.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.1494

AB0312 INCREASED PREVALENCE OF OBSTRUCTIVE SLEEP APNEA IN INDIVIDUALS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

R. Meidan1,2, D. Paran1,2, R. Tauman1,4, V. Fure2,3, T. Eviatar1,2, D. Levartovsky1,2, A. Polachek1,2, J. Wollman1,3, H. Padova1,2, M. Zisapel1,2, M. Anouk2,3, E. Seymour1,2, O. Elkayam2,3, O. Eilatouf1,2, 1Tel Aviv Sourasky Medical Center, Internal Ward B, Tel Aviv, Israel; 2Tel Aviv University, Sackler Faculty of Medicine, Tel Aviv, Israel; 3Tel Aviv Sourasky Medical Center, 4T el Aviv Sourasky Medical Center, Tel Aviv, Israel; 5Tel Aviv Sourasky Medical Center, Tel Aviv, Israel

Background: Sleep disturbances are common in individuals with rheumatolog-

cal diseases in general and systemic lupus erythematosus (SLE) in particular. Studies suggest that obstructive sleep apnea (OSA) might correlate with SLE disease activity and the presence of additional symptoms such as pain, fatigue, affective symptoms and steroid use. Sleep disturbances symptomatology such as fatigue and increased pain overlap with constitutional inflammatory symptoms of SLE and may mimic or mask disease related relapses. Therein lies the impor-
tance of diagnosing and treating such disorders in SLE.

Objectives: To determine whether patients with SLE have increased prevalence of OSA as assessed by the apnea hypopnea index (AHI) and to explore possible contributors to OSA including SLE disease activity and accrued damage, medi-
cations, secondary fibromyalgia and depression.

Methods: 42 consecutive patients with SLE (38 women, 4 men) and 20 healthy, sex, body mass index (BMI) and age matched controls (15 women, 5 men) were consecutively recruited and underwent an ambulatory sleep study using the WatchPAT device. All participants completed questionnaires including Pittsburgh Sleep Quality Index (PSQI), Epworth Sleepiness Scale (ESS), Functional Assessment of Chronic Illness Therapy (FACIT), Widespread Pain Index (WPI), Symptoms Severity Scale (SSS) and Beck Depression Inventory. SLE disease activity and damage were assessed using the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) and Systemic Lupus International Collaborating Clinics (SLICC) damage index.

Results: The mean AHI was 9.19 ± 6.79 in the SLE group and 3.95 ± 3.47 in the control group (p=0.04). Moderate-severe OSA (AHI≥15) was significantly more common in patients with SLE (23.6% vs. 0%, p=0.04). Patients with SLE had lower sleep efficiency (83.38 ± 6.15 vs. 87.22 ± 4.24, p=0.03), increased sleep arousals (7.72 ± 5.66 vs. 5.13 ± 2.29, p=0.001), higher PSQI and FACIT scores SLE (8.14 ± 3.47 vs. 5.10 ± 2.64, p=0.001, 16.89 ± 11.19 vs. 7.29 ± 5.93, p=0.0008 respectively) and had more fibromyalgia as assessed by WPI and SSS.

Conclusion: The mean AHI was 9.19 ± 6.79 in the SLE group and 3.95 ± 3.47 in the control group (p=0.004). Moderate-severe OSA (AHI≥15) was significantly more common in patients with SLE (23.6% vs. 0%, p=0.04). Patients with SLE had lower sleep efficiency (83.38 ± 6.15 vs. 87.22 ± 4.24, p=0.03), increased sleep arousals (7.72 ± 5.66 vs. 5.13 ± 2.29, p=0.001), higher PSQI and FACIT scores SLE (8.14 ± 3.47 vs. 5.10 ± 2.64, p=0.001, 16.89 ± 11.19 vs. 7.29 ± 5.93, p=0.0008 respectively) and had more fibromyalgia as assessed by WPI and SSS.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.1524
(19.5% vs. 0%, p=0.04). BMI and the SLICC score were independent predictors of OSA (p=0.03 and p=0.02 respectively). A correlation between SLEDAI and moderate-severe OSA was found (p=0.03), although an association to medications, secondary fibromyalgia and depression was not found.

**Conclusion:** Patients with SLE have increased prevalence of OSA with lower sleep quality compared to healthy controls. Our findings suggest a possible correlation between accrued damage as assessed by the SLE damage index and OSA.

**REFERENCES:**


Table 1. WatchPAT sleep parameters analysis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Group A (N=42)</th>
<th>Group B (N=20)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDI ± SD</td>
<td>13.52 ± 6.54</td>
<td>9.72 ± 3.60</td>
<td>0.04</td>
</tr>
<tr>
<td>AH1 ± SD</td>
<td>9.18 ± 5.79</td>
<td>3.95 ± 3.47</td>
<td>0.004</td>
</tr>
<tr>
<td>ODI ± SD</td>
<td>2.54 ± 2.72</td>
<td>1.27 ± 1.45</td>
<td>0.04</td>
</tr>
<tr>
<td>Sleep efficiency (%) ± SD</td>
<td>83.38 ± 6.15</td>
<td>87.22 ± 4.24</td>
<td>0.03</td>
</tr>
<tr>
<td>Number of arousals ± SD</td>
<td>7.72 ± 5.66</td>
<td>5.13 ± 2.29</td>
<td>0.01</td>
</tr>
<tr>
<td>Saturation (%) ± SD</td>
<td>96.10 ± 1.37</td>
<td>95.75 ± 1.39</td>
<td>0.45</td>
</tr>
<tr>
<td>Sleep latency ± SD</td>
<td>25.35 ± 14.03</td>
<td>27.32 ± 6.79</td>
<td>0.15</td>
</tr>
<tr>
<td>REM latency ± SD</td>
<td>21.25 ± 9.33</td>
<td>18.46 ± 6.63</td>
<td>0.27</td>
</tr>
<tr>
<td>REM latency ± SD</td>
<td>87.88 ± 49.06</td>
<td>73.60 ± 46.21</td>
<td>0.09</td>
</tr>
<tr>
<td>Deep sleep ± SD</td>
<td>57.63 ± 12.37</td>
<td>52.70 ± 11.63</td>
<td>0.18</td>
</tr>
</tbody>
</table>

**SLE, Systemic Lupus Erythematosus; RDI, Respiratory Disturbance Index; SD, Standard Deviation; AH1, Apnea Hypopnea Index; ODI, Oxygen Desaturation Index; REM, Rapid Eye Movement.**

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2021-eular.1524

### AB0314 SEMAPHORIN 3A LEVELS IN LUPUS WITH AND WITHOUT SECONDARY ANTIPHOSPHOLIPID ANTIBODY SYNDROME AND RENAL INVOLVEMENT


**Background:** In this study, we aimed to evaluate sema3A levels in SLE patients with and without renal involvement/secondary antiphospholipid antibody syndrome (APS), to further elucidate the contribution of sema3A in etiopathogenesis of these conditions.

**Objectives:** Aim of this study is to evaluate sema3A levels in systemic lupus erythematosus patients (SLE) with and without renal involvement and secondary antiphospholipid antibody syndrome (APS).

**Methods:** SLE patients were grouped according to presence of secondary APS or renal involvement. The control group consisted of age-matched, non-smoker, healthy volunteers. Sema3A levels were compared among groups. All SLE patients were regrouped according to presence of thrombotic events, miscarriages and proteinuria and sema3A levels were investigated. Finally, sema3A levels of all SLE patients as a single group were compared to controls.

**Results:** The mean sema3A values were 16.16±2.84 ng/dL in the control group, 11.28±5.23 ng/dL in SLE patients without nephritis and APS, 9.05±5.65 ng/dL in SLE with APS group, and 8.53±5.11 ng/dL in lupus nephritis group. When all three patient groups were examined as a single group, mean sema3A value was significantly lower than that of the control group. Sema3A was reduced in SLE patients with thromboembolism and/or miscarriage.

**Conclusion:** Sema3A levels were lower in all patient groups compared to the control group. Moreover, the reduced sema3A levels in patients with a history of thromboembolism and/or miscarriage suggests that sema3A may play an important role in the pathogenesis of vasculopathy.

### Table 1. Comparison of sema3A levels between SLE patient groups and control subjects

<table>
<thead>
<tr>
<th>Sema3A, ng/dL</th>
<th>Group A vs control&lt;0.001</th>
<th>Group B vs control&lt;0.001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A (N=20)</td>
<td>9.05 ± 5.65</td>
<td>5.65</td>
</tr>
<tr>
<td>Group B (N=20)</td>
<td>11.28 ± 5.23</td>
<td>8.53 ± 5.11</td>
</tr>
<tr>
<td>Group C (N=19)</td>
<td>16.16 ± 2.84</td>
<td>9.64 ± 5.38</td>
</tr>
<tr>
<td>Control (N=19)</td>
<td>5.65</td>
<td>9.05 ± 5.09</td>
</tr>
</tbody>
</table>

**All patients (N=59) 16.16 ± 2.84**

**Patients with thrombotic events and/or miscarriages (N=31) 9.64 ± 5.38**

**Patients without thrombotic events and/or miscarriages (N=48) 5.65**

**Patients with proteinuria and/or thrombotic events and/or miscarriages (N=34) 9.05 ± 5.09**

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2021-eular.1806

### AB0315 DISEASE DAMAGE ACCRUAL AND LOW BONE MINERAL DENSITY IN FEMALE PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

M. Corea Rodríguez1,2, G. Pocovi-Gerardino2, J. L. Callejas-Rubio2, R. Rios Fernández1,2, S. Delomio-Romero1, N. Ortego1, R. Bueda-Medina1,2

1University of Granada, Nursing, Granada, Spain; 2Biotech Research Institute

**Objectives:** An increase in bone density in female patients with SLE has been reported. In this study, we aimed to find new bone markers in SLE related to bone mineral density (BMD) in female patients with SLE and establish an association between bone mineral density and clinical and laboratory parameters.

**Methods:** 107 female patients with SLE were included. Among them, 62 were non-menopausal, and 45 were menopausal. Their mean age was 49.3 years (months 23–84). All patients were divided into three groups: group A, 30 patients with low bone density (T ≤ -2.5); group B, 34 patients with normal bone density (T ≥ -1); and group C, 43 patients with high bone density (T > -1). The following were determined in all patients: BMD values, disease activity, damage accrual, laboratory parameters, and smoking status.

**Results:** The mean T-score was -0.82 ± 2.74 in group A, -0.60 ± 2.32 in group B, and -0.25 ± 2.40 in group C. The mean disease duration was 15.4 ± 11.9 years. The mean damage accrual was 9.4 ± 6.2 in group A, 7.2 ± 5.9 in group B, and 5.2 ± 4.8 in group C. The mean number of months of smoking was 35 ± 97.5 months. The mean number of autoantibodies was 1.6 ± 1.3 in group A, 1.4 ± 1.2 in group B, and 1.0 ± 1.2 in group C. The mean number of medications was 7 ± 2 in group A, 7 ± 2 in group B, and 7 ± 2 in group C.

**Conclusion:** The mean BMD values were lower in SLE patients with low bone density as compared to those with normal and high bone density. Higher values of smoking and autoantibodies were found in SLE patients with low bone density.

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2021-eular.1864