serositis ($p=0.034$), pulmonary hypertension ($p=0.021$), history of alveolar haemorrhage ($p<0.001$) and cardiac valve involvement ($p=0.002$) were associated with ICU hospitalization.

Conclusion: Disease activity, infections and damage are the leading causes of hospitalization in patients with SLE. Damage increases the frequency of hospitalizations, prolongs the duration of stay, and increases the need for follow-up in the ICU. Tight control of disease activity with rational use of immunosuppressive treatment is important to reduce damage and hospitalizations.

Graphic 1. Distribution of damage according to organs/systems in hospitalized patients

REFERENCES:

- Gu K, Gladman DD, Su J, Urowitz MB. Hospitalizations in patients with systemic lupus erythematosus in an academic health science center. *The Journal of rheumatology* 2017;44:1173-8.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.529

POS0711

SUICIDAL BEHAVIOUR IN SLE PATIENTS: A SYSTEMATIC LITERATURE REVIEW

A. Kyriakou¹, A. Chatzittofis¹, K. Parperis^{1,2}, ¹University of Cyprus, Medical School, Nicosia, Cyprus; ²The University of Arizona College of Medicine - Phoenix, Rheumatology, Phoenix, United States of America

Background: Previous studies have demonstrated that SLE patients have a higher risk of suicidal behaviour, including suicidal ideation, attempt and complete suicide (1,2). Data describing the SLE patients' clinical characteristics and risk factors of suicidal behaviour are lacking.

Objectives: To determine the magnitude of suicidal behaviour among SLE patients and to examine predictors associated with suicidal behaviour.

Methods: According to the PRISMA guidelines, we conducted a systematic literature review of the online databases, PubMed/Medline, EMBASE, and Web of Science, from inception to December 2020 (Figure 1). Full-text original articles that examined the relationship between SLE patients with suicidal behaviour were eligible for our review. Two reviewers independently review articles to assess eligibility using the Newcastle-Ottawa Scale and the Joanna Briggs Institute tools. Systematic reviews, metaanalysis, narrative review, case reports, case series, including less than 10 patients and conference abstracts, were excluded.

Results: Of the 64 articles identified, 22 were relevant to the study question; cross-sectional ($n=8$) and prospective cohorts ($n=6$) were the most frequently retrieved studies. Among the 27106 SLE patients with SLE, 802 had suicidal behaviour (2.9%), and of those, 87.9% were female. Suicide attempt occurred in 573/802 (71.4%) and complete suicide in 18/802 (2.3%). Major depressive disorder (MDD) was the most frequently reported coexisting psychiatric condition associated with suicidal behavior, followed by psychosis and social phobia. Several clinical manifestations were linked to suicidal behaviour, particularly neuropsychiatric lupus, mucocutaneous, renal involvement and serositis. Further, high scores in disease activity and damage indices were associated with suicidal behaviour.

Conclusion: Suicidal behavior in SLE patients was associated with MDD, NPSLE, active disease and damage. Awareness of these findings can guide clinicians to recognize suicide behavior promptly and prevent suicide attempts.

REFERENCES:

- Hajduk A, Nowicka-Sauer K, Smoleńska Z, Czuszyńska Z, Zdrojewski Z. Prevalence and correlates of suicidal thoughts in patients with neuropsychiatric lupus. *Lupus*. 2016 Feb;25(2):185-92. doi: 10.1177/0961203315603136.
- Buji RI, Abdul Murad NA, Chan LF, Maniam T, Mohd Shahrir MS, Rozita M, Shamsul AS, Mohamad Hussain R, Abdullah N, Jamal R, Nik Jaafar NR. Suicidal ideation in systemic lupus erythematosus: NR2A gene polymorphism, clinical and psychosocial factors. *Lupus*. 2018 Apr;27(5):744-752. doi: 10.1177/0961203317742711.

Figure 1. A PRISMA chart describing the inclusion/exclusion process

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.741

POS0712

"EXTRA"- CRITERIA ANTIPHOSPHOLIPID ANTIBODIES IN PATIENTS WITH ANTIPHOSPHOLIPID SYNDROME AND SYSTEMIC LUPUS ERYTHEMATOSUS (PRELIMINARY DATA)

F. Cheldieva^{1,2}, T. Reshetnyak^{1,2}, M. Cherkasova¹, N. Seredavkina¹, A. Lila^{1,2}, ¹V.A. Nasonova Research Institute of Rheumatology, Laboratory of Vascular Rheumatology, Moscow, Russian Federation; ²Russian Medical Academy of Continuing Professional Education, Ministry of Health of Russia, Department of Rheumatology, Moscow, Russian Federation

Background: The study of antiphospholipid antibodies (aPL), not included in the Sydney diagnostic criteria, in antiphospholipid syndrome (APS) and systemic lupus erythematosus (SLE) is poorly understood.

Objectives: To determine the frequency of detection of IgA-aCL and IgA-aβ2GP1 and IgG antibodies to β2GP1 domain 1 (IgG-aβ2GP1-D1) in patients with APS with and without SLE.

Methods: ELISA and chemiluminescence assays (CMA) were used to test 63 sera of patients: 22 (35%) with primary APS (pAPS) and 41 (65%) patients with APS and with SLE (secondary APS (sAPS)), with mean age 38,0 [33,0 – 43,0] years and disease duration 4,0 [0,1 – 9,9]. Both methods were used to test of IgG/IgM-aCL and IgG/IgM-aβ2GP1. CMA was used for research IgG/IgM/IgA-aCL, IgG/IgM/IgA-aβ2GP1 and IgG-aβ2GP1-D1. Of them 49 (78%) (18 – with pAPS; 31 – with sAPS) displayed major thrombotic events and 18 of 22 pregnant women had pregnancy morbidity in past history. Lupus anticoagulant (LA) positivity was in 9 out of 12 patients who had it determined. LA was not investigated due to anticoagulant therapy in the remaining 52 patients.

Results: IgG/IgM-aCL and IgG/IgM-aβ2GP1 were recorded in 44/18 and 50/17 patients by ELISA and in 55/19 and 59/16 by CMA, respectively. IgA-aCL positivity was found in 35 (56%) of 63 patients. Thirty IgA-positive patients were positive for IgG-aCL by ELISA: 22 – IgG-aCL – highly positive, 6 – medium positive and 2 – low positive patients. IgM-aCL by ELISA was detected in 13 (37%) of 35 IgA-aCL positive patients: 11 – highly positive, 1 – medium positive and 1 – low positive. IgA-aCL was combined with IgG-aCL in 34 patients and with IgM-aCL in 16 patients in the CMA. IgG-aβ2GP1 in ELISA was detected in 32 patients with IgA-aCL (24 – highly positive, 5 – medium positive and 3 – low

positive) and in 34 – in CMA. IgM- α 2GP1 was combined with IgA- α 2GP1 with the same frequency in both methods (in 13 patients).

IgA- α 2GP1 was detected in 30 (48%) of 63 patients. They were combined with both IgG-aCL and IgG- α 2GP1 in all cases in both methods. IgM-aCL and IgM- α 2GP1 were detected in 14 and 11 of 30 patients with IgA- α 2GP1, respectively. The combination of IgA- α 2GP1 with IgG-aCL by ELISA was in 27 (in most cases highly positive – 20) and with IgM-aCL – in 10 (highly positive – 8). IgG- α 2GP1 was detected in 28 patients with IgA- α 2GP1 (high positive – 21) and in 11 patients with IgM- α 2GP1 (high positive – 7).

IgG- α 2GP1-D1 was revealed in 48 (76%) patients. It was combined with IgG-aCL – in 38, with IgM-aCL – in 15 patients by the ELISA. The combination of IgG- α 2GP1-D1 by CMA was as follows: with IgG-aCL – in 46, with IgM-aCL – in 17, and with IgA-aCL – in 33 patients. In most cases, IgG- α 2GP1-D1 was combined with highly positive aCL levels. IgG- α 2GP1-D1 positivity was associated with IgG- α 2GP1 positivity in 42 – by ELISA and 47 – by CMA, IgM- α 2GP1 – in 13 and 14 patients by ELISA and CMA, respectively, and IgA- α 2GP1 – in 29. Isolated IgG- α 2GP1-D1 positivity was not observed.

Conclusion: The frequency of IgA-aCL detection was 56% (35 patients out of 63), IgA- α 2GP1 – 48% (30 patients out of 63), IgG- α 2GP1-D1 – 76% (48 patients out of 63). There was not isolated positivity of this “extra” criterial antibodies. The presence of IgA-aCL, IgA- α 2GP1, IgG- α 2GP1-D1 was associated with highly positivity of IgG/IgM-aCL and IgG/IgM- α 2GP1.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.818

POS0713

PREDICTORS OF HOSPITALIZATION IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS: A 10-YEAR COHORT STUDY OF 398 PATIENTS FROM A TERTIARY CENTRE

H. Assunção¹, M. Rodrigues², A. R. Prata³, J. A. P. Da Silva^{1,4}, L. Inês^{1,5}.

¹Centro Hospitalar e Universitário de Coimbra, Rheumatology, Coimbra, Portugal; ²Hospital Distrital de Leiria, Rheumatology, Leiria, Portugal; ³Centro Hospitalar e Universitário de Coimbra, Rheumatology, Coimbra, Portugal;

⁴University of Coimbra, Coimbra Institute for Clinical and Biomedical Research (iCBR), Faculty of Medicine, Coimbra, Portugal; ⁵University of Beira Interior, School of Health Sciences, Covilhã, Portugal

Background: Patients with systemic lupus erythematosus (SLE) often require hospitalization. The cause of admission may vary, but active disease and infection are consistently reported as the main reasons for hospitalization and are associated with worse survival and damage accrual. Recent improvements in the standard of care, including minimization of glucocorticoid dose and more effective and safe immunosuppressive regimens, may have changed the incidence and risk factors for hospitalization due to these causes. Hence, it is useful to identify predictors of hospitalization to further reduce the risk of admission for disease activity and severe infection in patients with SLE.

Objectives: To identify predictors of hospitalization in patients with SLE, according to the underlying cause.

Methods: Patients with SLE fulfilling classification criteria (ACR'97 and/or SLICC), regularly followed at an academic lupus clinic from January 2009 to December 2020 and with at least two outpatient visits were included in this cohort study. Time to first hospitalization up to 120 months was identified separately for the following admission causes: (a) any cause; (b) active SLE; (c) infection. Predictors of hospitalization were sought through survival analysis, with distinct models for each of the major admission causes. Univariate analysis was performed using Kaplan-Meier curves and Log-Rank tests. Tested variables assessed at baseline included: gender; age at SLE onset; age; disease duration; SLE Disease Activity Index (SLEDAI-2K) score; ongoing antimalarial use; ongoing immunosuppressants; ongoing prednisolone daily dose; lupus nephritis up to baseline; SLICC Damage Index (SDI) score. Variables with $p < 0.1$ were further tested in multivariate Cox regression models. Hazard ratios (HR) were determined with 95% confidence intervals (95%CI).

Results: We included 398 patients (female: 86.2%, mean age: 41.2 ± 15.1 years, mean disease duration: 10.1 ± 9.2 years; previous lupus nephritis: 28.9%; mean SLEDAI-2K score: 3.4 ± 2.7 ; ongoing antimalarials: 78.9%; ongoing immunosuppressant: 29.9%; ongoing prednisolone > 7.5 mg/day: 17.1%; SDI score ≥ 1 : 28.4%). During the follow-up period, 50.5%, 23.6% and 17.3% were hospitalized at least once for any cause, active SLE or infection, respectively.

In the multivariate model, significant baseline predictors for hospitalization due to active disease were (table 1): SLEDAI-2K score > 5 ; disease duration ≤ 2 years; ongoing immunosuppressants; SDI score ≥ 1 . Baseline independent predictors of

hospitalization for infection included (table 1): male gender; SDI score ≥ 1 ; ongoing antimalarials were protective.

Table 1. Predictors of hospitalization in multivariate Cox regression according to the admission cause

Predictors	Hospitalization for active SLE	Hospitalization for infection
SLEDAI-2K score > 5	2.43 (1.53-3.88)	n.s.
SLE duration ≤ 2 years	1.70 (1.04-2.77)	n.s.
Ongoing immunosuppressant	1.91 (1.24-2.95)	n.s.
SDI score ≥ 1	1.82 (1.16-2.86)	2.14 (1.33-3.45)
Male gender	n.s.	2.19 (1.23-3.89)
No antimalarial treatment	n.s.	2.20 (1.34-3.60)

Risk for each predictor reported as Hazard Ratio (95% Confidence Interval); n.s.: non-significant

Conclusion: Tight control of disease activity, prevention of damage accrual, and treatment with antimalarials may contribute to minimize the risk of hospitalization for these two major causes of admission in patients with SLE.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.832

POS0714

WHITE MATTER HYPERINTENSITIES LEAD TO REDUCED PSYCHOMOTOR SPEED IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND NEUROPSYCHIATRIC SYMPTOMS

R. Monahan¹, F. Inglese², H. Middelkoop³, M. Van Buchem², T. Huizinga¹, M. Kloppenburg^{1,4}, I. Ronen², G. M. Steup-Beekman¹, J. De Bresse². ¹Leiden University Medical Center, Department of Rheumatology, Leiden, Netherlands; ²Leiden University Medical Center, Department of Radiology, Leiden, Netherlands; ³Leiden University Medical Center, Department of Neurology, Leiden, Netherlands; ⁴Leiden University Medical Center, Department of Clinical Epidemiology, Leiden, Netherlands

Background: Cognitive impairment is common in patients with systemic lupus erythematosus (SLE) and neuropsychiatric (NP) symptoms, but the exact underlying structural brain correlates are unknown.

Objectives: We aimed to compare cognitive function between groups of patients with different phenotypes of (NP)SLE and assessed the association between brain volumes, white matter hyperintensity (WMH) volume and cognitive function.

Methods: Patients who visited the NPSLE clinic of the Leiden University Medical Center between 2007-2015 were included in this study ($n=151$; 42 ± 13 years, 91% female). In a multidisciplinary consensus meeting, phenotypes were established and neuropsychiatric symptoms were attributed to SLE (NPSLE, inflammatory ($n=24$) or ischemic ($n=12$)) or to minor involvement of SLE or other causes (minor/non-NPSLE ($n=115$)). All patients underwent standardized cognitive assessment of the four cognitive domains: global cognitive functioning (GCF), learning and memory (LM), executive functioning and complex attention (EFCA) and psychomotor speed (PS)). Cognitive dysfunction was defined as a T-score < 40 , with age, sex, gender and education matched individuals of the Dutch population as reference. In addition, automated volume measurements on brain MRI (white matter, grey matter, white matter hyperintensities (WMH) and total brain volume (TBV)) were performed. Patients with brain infarcts > 1.5 cm were excluded. Cognitive function (Z-score) was compared between different NPSLE phenotypes using multiple regression analyses corrected for age, sex and education. Associations between brain volumes, WMH and cognitive function were assessed per phenotype using multiple regression analyses corrected for age, sex and intracranial volume.

Results: Global cognitive functioning was impaired in 5%, learning & memory in 46%, and executive functioning & complex attention in 39% and psychomotor speed in 46% of all patients. Patients with inflammatory NPSLE showed the most cognitive impairment and reduced cognitive function compared to ischemic NPSLE (all domains) and minor/non-NPSLE (EFCA) ($p < 0.05$).

Lower total brain volume and grey matter volume were associated with lower cognitive functioning in all domains (β : 0.00/0.01 (0.00; 0.01)) and lower white matter volume associated with lower LM, EFCA and PS (β : 0.00/0.01 (0.00; 0.01)) in all patients. Higher WMH volume associated with lower psychomotor speed (β : -0.14 (-0.32; -0.02)), especially in patients with inflammatory NPSLE (β : -0.36 (-0.60; -0.12)).

Conclusion: Reduced brain volume leads to reduced cognitive function in multiple cognitive domains in all patients with SLE and neuropsychiatric symptoms. Increased WMH volume leads to reduced psychomotor speed, especially in patients with inflammatory NPSLE.