During treatment, 58% of patients (n=53) showed an improvement of $\geq 20\%$ and 23% of $\geq 50\%$, based on physicians' evaluation of disease activity. This was consistent with an improvement of SELENA-SLEDAI (mean) from 8.0 at therapy start to 3.6 after six months on the basis of all available data (n=27). Similar outcomes were observed for arthritis, fatigue, rash, dsDNA antibody and complement levels.

Among the 42 patients treated with GC at time of belimumab initiation, GC dose was reduced by 5.7 mg/day (mean) during treatment with belimumab (11.6 $\pm$ 5.9 mg/day at six months). During the six months before initiation of belimumab, GC dose was stable or had to be increased in the majority of patients; however, during the six months therapy with belimumab, GC dose could be reduced in the majority of patients and GCs was discontinued in two patients. The percentages of patients receiving SLE co-medication other than GC were stable over the first six months of belimumab therapy. Within the first six months of treatment, no included patient had discontinued therapy with belimumab.

Conclusions: Treatment with belimumab over six months after initiation led to clinical improvement in a significant number of patients in real life settings and had an overall steroid-sparing effect. Belimumab was well-tolerated; no included patient discontinued the treatment within the first six months.

Acknowledgements: COMMERCIAL SUPPORT GRANT DISCLOSURE: Research funded by GlaxoSmithKline, UK.

Disclosure of Interest: J. von Kempis: None declared, S. Dütsch Employee of: SD is an employee of GSK, N. Reuschling: None declared, D. Schaer: None declared, F. Vallelian: None declared, R. Villiger: None declared, P. Villiger: None declared, R. Mueller: None declared

DOI: 10.1136/annrheumdis-2018-eular.5575

AB0529 AN AUDIT FOR SCREENING OF OSTEOPOROSIS AND ITS MANAGEMENT IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

S.A. Syed, K. Sunmboye, S. Shaffu. *Rheumatology, University Hospitals of Leicester, NHS Trust, Leicester, UK*

Background: Systemic lupus erythematosus (SLE) is an autoimmune, multi-system, chronic inflammatory condition. It is managed with long-term immunosuppressive therapy which includes steroid use. SLE is therefore considered an independent risk factor for osteoporosis.

Objectives: This clinical audit was undertaken to evaluate the screening of osteoporosis in patients diagnosed with SLE and assess adherence to national guidelines for the management of patients with low bone mineral density (BMD) on prolonged steroid therapy.

Methods: We studied 64 SLE patients seen at the Leicester Royal Infirmary. Demographic and clinical data was collected from the clinic letters. Steroid use for a cumulative period of over 4 weeks per year was considered significant and use of bisphosphonates or calcium and vitamin D supplements alone were taken into account for bone protection. BMD measurements by dual X-ray absorptiometry were performed. Osteoporosis was defined as a T score less than -2.5 SD in at least 1 region of measurement.

Results: Of the 64 patients studied, 54 (84.4%) were female and 10 (15.6%) male with an age range of 23 to 86 years and mean age of 47.45 years. Steroids were used in 46 (71.9%) patients while 18 (28.1%) patients did not receive any steroids. Twenty-one (32.8%) patients had DEXA scans and whilst 43 (67.2%) had not. Of those who had received steroids, 20 (43.4%) patients underwent DEXA scans and 26 (56.5%) did not. Osteoporosis was diagnosed in 3 (14.3%) patients out of the 21 scanned. The therapies used are summarised in figure 1.

Abstract AB0529 – Figure 1. Bone protection (n=64)

Conclusions: Studies have shown that SLE is an independent risk factor for low BMD and use of corticosteroids is already a well-recognised risk for osteoporosis. Our study has shown that a large section of patients (43.8%) did not receive any form of bone protection although, a significant proportion (71.9%) were on oral steroids. Although a small section of those scanned demonstrated osteoporosis (14.3%), many patients were already initiated on bisphosphonates without a DEXA. There was also no exclusion criteria set for young patients (age <45 years) or those who were newly diagnosed. Despite this, our study demonstrates the need for robust guidelines for the screening and management of bone health in patients with SLE in order to improve morbidity and mortality rates in this patient cohort.

REFERENCES:

- [1] Mosca M,1 C Tani,1 M Aringer, et al. European League Against Rheumatism recommendations for monitoring patients with systemic lupus erythematosus in clinical practice and in observational studies.
- [2] Almeshed K, Forsblad d'Elia H, Kvist G, et al. Prevalence and risk factors of osteoporosis in female SLE patients-extended report. *Rheumatology (Oxford)* 2007;46:1185–1190.
- [3] Bultink IE, Lems WF, Kostense PJ, et al. Prevalence of and risk factors for low bone mineral density and vertebral fractures in patients with systemic lupus erythematosus. *Arthritis Rheum* 2005;52:2044–2050.
- [4] NOGG 2017: Clinical guideline for the prevention and treatment of osteoporosis.

Acknowledgements: We acknowledge the contribution of the clinical audit team at the University hospitals of Leicester NHS trust for their help in analysing the data.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7336

AB0530 TREATMENT OUTCOME IN LUPUS NEPHRITIS PATIENTS TREATED WITH MYCOPHENOLATE MOFETIL: FROM REAL-WORLD CLINICAL PRACTICE

S.M. Jung¹, D. Kim¹, H.W. Kim², S.-W. Lee¹, J.J. Song¹, Y.-B. Park¹. ¹Internal Medicine, Yonsei University College of Medicine; ²Internal Medicine, Seoul National University Bundang Hospital, Seoul, Korea, Republic of Ireland

Background: Systemic lupus erythematosus (SLE) is a systemic autoimmune disease often characterised by the development of glomerulonephritis.¹ There is a growing interest in the use of mycophenolate mofetil (MMF) as induction therapy and maintenance therapy for lupus nephritis.^{2,3}

Objectives: This study aimed to evaluate the therapeutic outcome of MMF in lupus nephritis from real-world clinical practice, and identify the predictors for failure of remission after MMF treatment.

Methods: Korean patients with pathologically proven lupus nephritis class III, IV, and V were recruited from rheumatology clinic in Severance Hospital, Yonsei University College of Medicine between Nov 2011 and Aug 2017. Patients who treated with MMF for at least 3 months were included in the analysis. The probability of remission after MMF therapy, and the difference between patients who achieved remission or failed to achieve remission were analysed using Kaplan-Meier analysis and Cox proportional hazards model.

Results: Of 153 patients with lupus nephritis, 116 patients were included in this study. Seventy two patients continued MMF until the last follow-up. The mean age of patients was 34.2 years, and the median duration of SLE was 5.7 months. Anti-dsDNA antibody was positive in 82.8% of patients, and 9.5% of patients showed a histological class with pure V pathology. Mean protein/creatinine ratio in spot urine was 4.6, and active urinary sediment was found in 82.8% of patients. During median follow-up period of 5 years, 80% of patients achieved clinical remission of lupus nephritis. Median time to remission was 4.2 months (IQR 0.9–9.1). Risk factors for failure of remission were nephrotic-range proteinuria and seronegativity of anti-dsDNA antibodies.

Conclusions: This study shows the real-world data on MMF treatment in patients with lupus nephritis. Patients with risk factors for failure to remission may require more intensive treatment and management.

REFERENCES:

- [1] Yu F, Haas M, Glasscock R, Zhao MH. Redefining lupus nephritis: clinical implications of pathophysiologic subtypes, *Nature reviews. Nephrology* 13 (2017) 483–495.
- [2] Ginzler EM, Dooley MA, Aranow C, Kim MY, Buyon J, Merrill JT, et al. Mycophenolate mofetil or intravenous cyclophosphamide for lupus nephritis. *The New England journal of medicine* 2005;353(2005):2219–2228.

- [3] Dooley MA, Jayne D, Ginzler EM, Isenberg D, Olsen NJ, Wofsy D, et al. Mycophenolate versus azathioprine as maintenance therapy for lupus nephritis. *The New England journal of medicine* 2011;365(2011):1886–1895.

Acknowledgements: None

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6609

AB0531 DECISION TO INITIATE IMMUNOSUPPRESSION IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME

S. Daia-Iliescu, C. Buzatu, T. Gudu, D. Zaharia, C. Purice, A. Borangiu, I. Saulescu, L. Groseanu, C. Constantinescu, M.M. Negru, V. Vlad, V. Bojinca, F. Berghia, A. Balanescu, D. Predeteanu, R. Ionescu, D. Opris-Belinski. *Internal Medicine and Rheumatology, SF. Maria Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania*

Background: There is limited data available (case series, small clinical trials and expert opinion) regarding the need to initiate immunosuppressive therapy in patients with primary Sjogren syndrome (pSS).

Objectives: The aim of this study is to determine the factors that correlate with physician's decision to start immunosuppressive therapy in pSS patients.

Methods: Subjects with pSS diagnosed according to the classification criteria in use at the time of their first presentation, were included in a monocentric cohort. A retrospective analysis was performed. The EULAR Sjogren's Syndrome Disease Activity Index (ESSDAI) at onset and Sjogren Syndrome Damage Index (SSDI) at the last evaluation were calculated. Treatment was given according to the physician's decision. Laboratory tests and Ultrasonography (US) of major salivary glands were performed in all cases. The data was analysed using Windows Excel/SPSS20.0.

Results: Corticotherapy was prescribed in 26/30 cases (86.6%), mean duration 50.65 months. Immunomodulatory treatment with hydroxychloroquine was given in 26/30 cases (86.6%). Immunosuppressive treatment was required in 10/30 patients (33.3%)- azathioprine 7 (23.3%) cases, methotrexate 3 (10%) cases. The mean ESSDAI score was $6.83 \pm SD 1.8$. In 19 (63.3%) cases disease activity was moderate or high (ESSDAI >5). The mean damage score value (SSDI) was $3.1 \pm SD 1.2$. There was a moderate correlation between the activity score ESSDAI and the damage score SSDI ($r=0.41$, $p<0.05$). The physician's decision to start immunosuppression correlated significantly with the presence of hypergammaglobulinemia ($r=0.4$, $p<0.05$). The duration of immunosuppressive treatment correlated moderately with specific Sjogren's US pattern of salivary glands ($r=0.40$, $p<0.05$). In contrast, immunosuppressive treatment duration did not correlate with the activity and damage scores (ESSDAI and SSDI).

Conclusions: An important number of patients received corticotherapy, immunomodulatory agents and immunosuppressive therapy. The decision to initiate and maintain immunosuppressive therapy correlated with hypergammaglobulinemia and specific Sjogren's US changes. The damage score (SSDI) does not correlate with immunosuppressive therapy duration.

REFERENCES:

- [1] Rischmueller M, Tieu J, Lester S. Primary Sjögren's syndrome. *Best Pract Res Clin Rheumatol* 2016 Feb 30.
- [2] Seror R, Bootsma H, Saraux A, et al. Defining disease activity states and clinically meaningful improvement in primary Sjögren's syndrome with EULAR primary Sjögren's syndrome disease activity (ESSDAI) and patient-reported indexes (ESSPRI). *Ann Rheum Dis* 2016.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4992

AB0532 THE EFFECTIVENESS OF EXERCISE THERAPY IN PATIENTS WITH SYSTEMIC SCLEROSIS: A SYSTEMATIC REVIEW

S.I.E. Liem¹, T.P.M. Vliet-Vlieland², J.W. Schoones³, J.K. de Vries-Bouwstra¹. ¹Rheumatology, ²Orthopaedics, ³Walaeus Medical Library, Leiden University Medical Centre, Leiden, Netherlands

Background: Exercise therapy is an important and relatively often used nonpharmacological intervention¹, yet its effectiveness based on studies where exercise therapy is evaluated as single intervention (and not part of a comprehensive program²) has not been determined.

Objectives: To evaluate the effectiveness of exercise therapy in SSc patients by means of a systematic review of the literature.

Methods: A systematic literature search was performed in February 2017 in ten databases including Pubmed and Embase from 1990 to February 2017. We included clinical studies with an observational or experimental design as long as the study population concerned ≥ 3 SSc patients, the intervention consisted only of exercise therapy (categorised into hand exercises, mouth opening exercises, and aerobic exercises either or not combined with other exercises) and its clinical outcome according to at least one assessment of effectiveness done before and after the intervention was reported. Studies where exercise therapy was part of a multidisciplinary intervention were excluded. The selection of studies, data extraction and assessment of methodological quality was done by two of the researchers independently.

Results: The search strategy yielded 636 titles and abstracts, with eventually six studies being included (2 randomised controlled trials (RCTs), 3 observational designs (ODs) and 1 single subject experimental design (SSED)). The total number of patients included per study ranged from 4 to 48, patients' mean age from 44.0 to 66.5 years and mean disease duration from 3.5 to 12.6 years. One study concerned hand exercises (an RCT comparing strengthening and mobility exercises using a telemedicine intervention consisting of a portable device guiding patients during workout and sending data to health professionals to no-telemedicine), two studies on mouth stretching and oral-augmentation exercises (an OD and a RCT), and three studies on aerobic exercise (two ODs and one SSED; one program with only aerobic training and two programs combining aerobic and resistance training, lasting 30–60 min, 2–3 days/week for 8–12 weeks). The study on hand exercises reported a greater improvement of hand function using the telemedicine intervention. The RCT on mouth exercises showed a statistically significant effect on maximum mouth opening in the exercise group compared to no exercise at 3 months but not at 6 months follow-up, whereas the OD showed improvement of mouth opening directly after the mouth exercise program. The three studies on aerobic exercise indicate effectiveness and no dropouts were observed. The program of solely aerobic exercise on a treadmill improved patient's exercise tolerance and aerobic capacity. The two programs combining aerobic and resistance exercise showed improvements of strength and muscle function in the OD and improvements of muscular endurance and aerobic capacity in the SSED.

Conclusions: The literature on the effect of exercise therapy in SSc patients is scanty. Collaborative efforts to conduct methodologically sound intervention studies with adequate reporting is needed.³

REFERENCES:

- [1] Meijis J, et al. *Clin Rheumatol* 2013;33(6):825–832.
- [2] Willems L, et al. *Arthritis Care & Res.* 2015;67(10):1426–1439.
- [3] Ravaud P, et al. *Nat Clin Pract Rheumatol* 2006;2(6):313–319.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.7037

AB0533 PATTERN OF DRUG USE IN SYSTEMIC LUPUS ERYTHEMATOSUS IN REAL WORLD CLINICAL PRACTICE

T. Costa¹, M. Eusébio², S. Falcão¹, F. Araújo³, P. Nero⁴, L. Inês⁵, M. Rodrigues⁵, D. Jesus⁵, S. Barreira⁶, C. Macieira⁶, M. Cabral⁷, G. Sequeira⁸, J. Branco¹, M. Santos⁹. ¹Hospital Egas Moniz; ²Sociedade Portuguesa Reumatologia; ³Hospital Sant'Ana; ⁴Hospital CUF Descobertas, Lisboa; ⁵Centro Hospitalar Universitário, Coimbra; ⁶Centro Hospitalar Lisboa Norte, Hospital de Santa Maria, Centro Académico de Medicina, Lisboa; ⁷Hospital Fernando Fonseca, Amadora; ⁸Centro Hospitalar Universitário do Algarve, Faro; ⁹Hospital Garcia de Orta, Almada, Portugal

Background: Pharmacological treatment for systemic lupus erythematosus (SLE) is aimed at reducing disease activity, preventing flares and minimising the damage. The use of medication varies widely and therapeutic strategies are well defined only for certain organ manifestations. Hydroxychloroquine is the standard treatment for most SLE patients during the entire disease course, while immunosuppressants are recommended for those with severe organ involvement. Belimumab is the only biological currently licensed for SLE, although others are used off-label in clinical practice.

Objectives: To describe the real-world patterns of drug use in SLE patients, and their relationship with disease phenotype.

Methods: Observational study of adult SLE patients registered in the Rheumatic Diseases Portuguese Registry, who have clinical diagnosis of SLE, followed for at least 1 year and with available data on medication, which was retrieved. Sociodemographic and clinical characteristics were compared among treatment groups defined as: group 1 antimalarials and/or glucocorticoids; group 2 immunosuppressants (azathioprine (AZA)/mycophenolate mofetil (MM)/methotrexate (MTX)) $\pm$ antimalarials and/or glucocorticoids; group 3 biologics $\pm$ immunosuppressants and/or antimalarials and/or glucocorticoids. To assess possible differences