partial renal remission, or poor renal outcome, including chronic kidney disease (CKD) or end stage renal disease (ESRD).

Results: 499 patients were included (85.6% females) with a median follow-up of 10.6 years (IQR 4–18). We observed an increase in both age at diagnosis of LN (P1 28.4±10.4; P2 29±11.5; P3 34.4±13.3 years) and disease duration before LN diagnosis (P1 1.3±1.3; P2 2.6±4.5; P3 4.6±6.3 years) from 1970 to 2016 ($p<0.001$ for both). At clinical presentation, renal insufficiency and acute nephritic syndrome became less common (P1 14.2%; P2 3.9%; P3 3.4% and P1 29%, P2 20.3%; P3 12.4%, respectively, $p<0.0001$) while isolated urinary abnormalities became significantly more prevalent from P1 to P3 (P1 26.4%; P2 38%; P3 48.9%; $p<0.0001$). Outcome was available in 95.8% of patients. Frequency of partial and complete renal remission progressively increased (P1 6.9%; P2 28%; P3 32% and P1 49.6%; P2 48%; P3 58.5%; $p<0.001$ and $p=0.01$, respectively) while CKD, ESRD and death decreased (P1 7.9%; P2 8.5%; P3 4.5%; P1 24.8% P2 9%; P3 1.3%; P1 19.8%; P2 5.9%; P3 3.6%, respectively, $p<0.001$ for all). Survival without ESRD at 10 and at 20 years was 87% and 80% in P1, 94% and 90% in P2% and 99% in P3 ($p=0.0019$). Induction therapy with immunosuppressants was more frequently performed over time (P1 71%; P2 82%; P3 94.6%, $p<0.0001$) and use of MMF significantly increased both as induction and maintenance treatment (P1 0, P2 2.7%; P3 33.8% and P1 1%; P2 15%; P3 54.8%, respectively, $p<0.0001$). At multivariate analysis, logarithm of serum creatinine (RR:2.72), male gender (RR:3.34), activity index (RR:1.1), chronicity index (RR:1.29), arterial hypertension (RR:5.95), and lack of maintenance immunosuppressive therapy (RR:3.04) predicted ESRD. No significant changes in histological classes or active lesions at the time of renal biopsy were observed, while chronicity index significantly decreased from P1 to P3 ($p=0.023$).

Conclusions: The clinical presentation of LN apparently became less severe in the last decades, likely due to earlier diagnosis and proper treatment, leading to an improved renal survival.

Disclosure of Interest: None declared

DOI: 10.1136/annrhumdis-2018-eular.7035

FRI0375

DELAYED LUPUS NEPHRITIS IN THE COURSE OF SYSTEMIC LUPUS ERYTHEMATOSUS PREDICTS A POORER RENAL RESPONSE TO INDUCTION THERAPY, RENAL FLARES, AND WORSE LONG-TERM RENAL OUTCOMES: A MULTICENTER, RETROSPECTIVE COHORT STUDY

M. Nakano^{1,2}, K. Kubo¹, Y. Shiota³, Y. Iwasaki¹, N. Tanaka², Y. Takahashi², S. Tateishi¹, H. Yamashita², M. Miyazaki³, H. Sato³, T. Igarashi¹, H. Kanda¹, H. Kaneo², T. Ishii³, K. Fujio¹, A. Mimori². ¹The University of Tokyo Hospital; ²National Center for Global Health and Medicine, Tokyo; ³Tohoku University Hospital, Sendai, Japan

Background: Some prognostic factors for lupus nephritis (LN) have been mentioned such as nephrotic syndrome, class 4 and chronicity on histology. In a previous single-centre study, we reported a potentially poorer renal response to induction therapy in LN that developed later after SLE onset (delayed, D-LN) compared with LN manifesting at SLE onset (early, E-LN) ¹. However, our study was limited by a small sample size and lack of long-term observation.

Objectives: This multicenter study aimed to validate whether D-LN was a useful predictor of a poor response to induction therapy with more detailed clinical and pathological parameters. Furthermore, we investigated whether D-LN was also a predictor of flares and long-term renal outcomes in addition to the established prognostic factors.

Methods: We retrospectively examined 215 biopsy-proven LN patients (136 E-LN, 79 D-LN) who attended 3 hospitals above between 1997 and 2014 and who were observed for 3–20 (median: 10.8) years from LN onset. We compared baseline clinical, pathological features and treatment options at LN onset between E-LN and D-LN. Then we compared the cumulative complete response (CR) rates, renal/extra-renal relapse rates, and the rates of renal insufficiency between the two groups. Renal insufficiency was defined as follows: ¹ serum creatinine (SCr) doubling or ESRD for severe insufficiency, and ² SCr increasing by 1.5 times and also >1.0 (female) or >1.2 mg/dl (male) for mild insufficiency. Moreover, we evaluated predictors of the response, flares and long-term renal outcomes with multivariate analysis.

Results: Anti-Sm/RNP antibodies and mixed proliferative and membranous nephritis (class 3+5 or 4+5) were significantly more prevalent in D-LN than E-LN (48.1 vs. 32.4%, 68.8 vs. 40.4%, 40.5 vs. 18.4%, respectively). Log-rank test showed that significantly lower cumulative CR rates over 3 years (65.8 vs. 83.1% at 12 months, 83.5 vs. 92.6% at 36 months, $p<0.01$) and significantly higher relapse rates (both renal and extra-renal) over 20 years in D-LN than E-LN. Mild renal insufficiency was significantly more likely to occur in D-LN over 20 years (21.5 vs. 12.5%, $p=0.04$). We performed multivariate Cox regression analysis for the response, flare, and renal outcomes including significant variables on univariate analysis. As independent predictors of CR, D-LN, nephrotic syndrome and chronicity index were identified. As those of renal flares, D-LN was detected.

Although D-LN was not associated with severe renal insufficiency, D-LN was identified as an independent predictor of mild renal insufficiency as well as some other factors (table 1).

Univariate analysis	Hazard ratio	P-value	Multivariate analysis	Hazard ratio	P-value
Predictors of CR					
D-LN	0.66(0.49–0.89)	0.006	D-LN	0.50(0.36–0.69)	<0.001
Serum creatinine	0.61(0.46–0.81)	0.001			
Nephrotic syndrome	0.54(0.40–0.73)	<0.001	Nephrotic syndrome	0.51(0.37–0.70)	<0.001
Class IV	0.66(0.49–0.87)	0.004			
Activity Index	0.94(0.90–0.97)	0.001			
Chronicity index	0.75(0.66–0.84)	<0.001	Chronicity index	0.81(0.70–0.92)	0.002
Predictors of renal flare					
D-LN	2.50(1.55–4.03)	<0.001	D-LN	2.17(1.30–3.65)	0.003
Anti-RNP antibodies	1.71(1.05–2.78)	0.030			
Non-CR at 12months after induction therapy	2.05(1.25–3.37)	0.005			
Predictors of extra-renal flare					
D-LN	1.92(1.05–3.52)	0.035	D-LN	1.64(0.88–3.05)	0.122
Anti-Sm antibodies	2.49(1.34–4.65)	0.004	Anti-Sm antibodies	2.31(1.23–4.34)	0.009
Predictors of severe renal insufficiency					
D-LN	2.31(0.89–5.99)	0.085			
Anti-RNP antibodies	9.41(2.14–41.3)	0.003	Anti-RNP antibodies	10.1(2.27–44.6)	0.002
Chronicity index	1.42(1.03–1.97)	0.032			
Non-CR at 6months after induction therapy	4.38(1.54–12.4)	<0.001	Non-CR at 6months after induction therapy	3.21(1.06–9.75)	0.039
Predictors of mild renal insufficiency					
D-LN	2.00(1.02–3.92)	0.044	D-LN	2.12(1.03–4.34)	0.041
Male	2.14(1.02–4.48)	0.044	Male	2.87(1.31–6.27)	0.008
Serum creatinine	1.97(1.45–2.67)	<0.001	Serum creatinine	1.97(1.30–2.99)	0.002
Nephrotic syndrome	2.48(1.28–4.88)	0.009			
Activity index	1.14(1.04–1.24)	0.003			
Chronicity index	1.77(1.42–2.19)	<0.001	Chronicity index	1.61(1.25–2.09)	<0.001
Non-CR at 6months after induction therapy	5.24(2.50–11.0)	<0.001	Non-CR at 6months after induction therapy	3.29(1.46–7.41)	0.004

Conclusions: D-LN might be a novel predictor of a poorer treatment response, renal flares and long-term renal outcomes independent of the established prognostic factors. The distinct differences in the autoantibody profiles between E-LN and D-LN groups suggest that D-LN patients might reflect a refractory SLE subset with a specific immunological profile.

REFERENCE:

- [1] Nakano M, et al. Different responses to induction therapy in two onset categories of lupus nephritis. EULAR 2017 THU 0251.

Acknowledgements: None

Disclosure of Interest: None declared

DOI: 10.1136/annrhumdis-2018-eular.4665

FRI0376

DYSLIPIDEMIA AS A NEWLY RECOGNISED FACTOR ASSOCIATED WITH DAMAGE ACCRUAL IN EARLY DIAGNOSED SLE: RESULTS FROM THE MULTICENTER EARLY LUPUS PROJECT INCEPTION COHORT

M. Piga¹, A. Zanetti², G. Carrara², C.A. Scire², I. Prevete³, G.D. Sebastiani³, L. Coladonato⁴, F. Iannone⁵, A. Bortoluzzi⁵, M. Govoni⁵, C. Tani⁶, M. Mosca⁶, L. Iaccarino⁷, A. Doria⁷, M. Fredi⁸, A. Tincani⁸, F.R. Spinelli⁹, F. Conti⁹, F. Bellisai¹⁰, M. Galeazzi¹⁰, A. Mathieu¹. ¹Università di Cagliari, Cagliari; ²Italian Society for Rheumatology, Milano; ³Ospedale San Camillo, Roma; ⁴Università di Bari, Bari; ⁵Università di Ferrara, Ferrara; ⁶Università di Pisa, Pisa; ⁷Università di Padova, Padova; ⁸Università di Brescia, Brescia; ⁹Università Sapienza, Roma; ¹⁰Università di Siena, Siena, Italy

Background: Preventing organ damage is a major challenge in Systemic Lupus Erythematosus (SLE).

Objectives: To evaluate factors associated with development of damage in a prospectively followed cohort of early diagnosed SLE patients.

Methods: The Early Lupus Project¹ encompasses 9 Italian centres recruiting, from the 1 st January 2012, an inception cohort of consecutive patients diagnosed with SLE within 12 months from appearance of four or more 1997 ACR classification criteria. At study entry and then every 6 months a large panel of data was recorded.

Here, we report on factors associated with the development of damage assessed by the SLICC/ACR Damage Index (SDI). Using univariate analysis, we assessed the contribution of covariates collected at baseline (demographic, comorbidities, serological, clinical by BILAG2004 domains, disease activity by ECLAM, HRQoL by visual analogic scale) in the development of damage (SDI from 0 to ≥ 1). Forward-Backward Cox-regression models were fitted with covariates with $p<0.05$ to identify factors independently associated with increased risk of damage development.

Results: Overall, 279 patients were enrolled in the Early Lupus Project inception cohort up to the 31th of December 2017; 230 patients (89.6% Caucasians, 13.4% males) were eligible for this study having SDI=0 at enrolment and at least 6

months of follow-up. Mean ($\pm$ SD) age at recognition of 4 ACR criteria was 36.5 ($\pm$ 14.4) years, median disease duration at recruitment was 1.1 months (interquartile range 0.0–4.8) and median follow-up duration was 27.4 months (interquartile range 7.2–48.0). At last follow-up visit 84 patients (36.5%) had an SDI score ≥ 1 (median=0; interquartile range 0–1); see figure 1A for overall SDI domains involved. Baseline dyslipidemia ($p<0.001$; HR 2.7 95% CI 1.5–4.8), higher number of BILAG domain involved ($p<0.001$; HR 1.4 95% CI 1.2–1.7) and older age (>35 year) at baseline ($p=0.001$; HR 2.3 95% CI 1.4–4.0) together with total dose of corticosteroids ($p=0.015$; HR 1.06 per gram of prednisone equivalent; 95% CI 1.01–1.11) during follow-up were the factors independently associated with increased risk of developing damage in this cohort (figure 1B). Their effect was confirmed after stratification for antimalarials (yes/no) and immunosuppressants (yes/no) use.

Conclusions: The early development of organ damage in this SLE patients cohort was associated with modifiable risk factors as baseline dyslipidemia and higher corticosteroid dose. Addressing them since the very early stages of the disease, and treating disease activity to target remission or minimal disease activity, may reduce damage and improve patients outcome.

REFERENCE:

[1] Sebastiani GD, et al. Early Lupus Project – A multicentre Italian study on systemic lupus erythematosus of recent onset. *Lupus* 2015 Oct;24 (12):1276–82.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2018-eular.4296

FRI0377 THE RELATIONSHIP BETWEEN REMISSION AND HEALTH RELATED QUALITY OF LIFE IN A COHORT OF SLE PATIENTS

M.W.P. Tsang-A-Sjoe, I.E.M. Bultink, M. Heslinga, L.H. van Tuyl, R.F. van Vollenhoven, A.E. Voskuyl. *Amsterdam Rheumatology and immunology Center, VU University Medical Center, Amsterdam, Netherlands*

Background: a treat-to-target approach for SLE was suggested by an international board of experts to further improve outcome in SLE. Remission was specifically identified as a suitable target. The Definition of Remission in SLE (DORIS) task force recently achieved international consensus on criteria for remission.
Objectives: to investigate the relationship between remission and health-related quality of life (HRQoL) in patients with systemic lupus erythematosus (SLE) in a longitudinal observational cohort.

Methods: retrospective analysis of prospectively obtained data. HRQoL was assessed using the physical and mental component score (PCS and MCS, respectively) of the Short Form 36 (SF-36) questionnaire. DORIS remission categories (no remission/remission on therapy/remission off therapy) were applied. Determinants of PCS and MCS were identified with simple linear regression analyses. Association between remission and HRQoL was assessed using Generalised Estimating Equation (GEE) models.

Results: Data from 154 patients with 2 years of follow-up were analysed. At baseline 70/154 (45.5%) of patients were in either form of remission. Patients in remission had higher SF-36 scores in all subdomains compared to patients not in remission (figure 1). PCS was positively associated with remission and having employment and negatively associated with erythrocyte sedimentation rate, patient global assessment, SLICC damage index, prednisone use, immunosuppressant use, and body mass index. MCS was positively associated with Caucasian ethnicity and negatively associated with patient global assessment. In GEE analysis, a gradual and significant increase of PCS was observed from patients not in remission (mean PCS 36.0) to remission on therapy (41.8) to remission off therapy (44.8) (table 1). No significant difference in MCS was found between remission states.

Abstract FRI0377 – Table 1. GEE analysis of the association between PCS or MCS and remission in patients with SLE

	Mean PCS ($\pm$ SD)	Unadjusted		Adjusted*	
		B (95% CI)	p-value	B (95% CI)	p-value
No remission	36.0 (10.9)	Ref.		Ref.	
Remission on therapy	41.8 (10.0)	6.3 (3.2–9.3)	<0.001	6.2 (3.3–9.0)	<0.001
Remission off therapy	44.8 (10.4)	8.2 (5.3–11.2)	<0.001	8.3 (5.4–11.1)	<0.001

*Adjusted for age and SDI

	Mean MCS ($\pm$ SD)	Unadjusted		Adjusted**	
		B (95% CI)	p-value	B (95% CI)	p-value
No remission	46.1 (10.6)	Ref.		Ref.	
Remission on therapy	49.3 (10.5)	2.9 (0.1–5.7)	0.041	2.3 (–0.5–5.1)	0.112
Remission off therapy	46.8 (10.1)	0.8 (–1.7–3.4)	0.52	0.4 (–2.1–3.0)	0.739

**Adjusted ethnicity

Abstract FRI0377 – Figure 1. Mean SF-36 subdomain scores in 154 patients at baseline, categorised between SLE patients in remission (n=60) or not in remission (n=94). Patients in remission at baseline have higher mean scores in all SF-36 subdomains compared to patients not in remission.

Conclusions: we show a strong and persistent association between remission and PCS, but not MCS. These results support the relevance (construct validity) of