percent (r=0.282, p=0.007), ration of Th1/Th2(r=0.385, p=0.004) and ration of Th17/Tregs(r=0.385, p=0.004) (Table 2).
Conclusion: The level of serum VD in PSS patients was significantly lower than that in normal controls, which was negatively correlated to secretion of tears, IgG, the absolute number of B, Th1, and Th17, the percentage of B and Th17, and radios of Th1/Th2 and Th17/Tregs. Raising serum VD levels by supplementation of VD, may be a potential Therapy for Sjogren's syndrome.

REFERENCES

[1] Garcia-Carrasco M, Jimenez-Herrera EA, Galvez-Romero JL, de Lara LV, Mendoza-Pinto C, Etchegaray-Morales I, et al. Vitamin D and Sjogren syndrome. Autoimmun Rev. 2017;16(6):587-93.

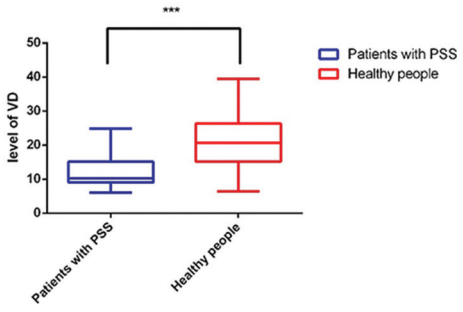

Figure 1. Comparison of VD levels(ng/ml) between patients with PSS and healthy people

Results are given as median (P_{25},P_{75}), ***patients with PSS*** 10.2 0 (9.00,15.11), ***healthy people*** 20.71(15.16,26.41) Z=-7.37 P<0.001
Disclosure of Interests: None declared
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SAT0204 LUPUS LOW-DISEASE ACTIVITY STATE VS SLE RESPONDER INDEX IN A "REAL-LIFE" SETTING

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Background: Systemic lupus erythematosus (SLE) is a chronic multi-organ autoimmune disease characterised by a heterogeneous pathogenic background and by protean clinical manifestations. Recent efforts in identifying novel agents for therapeutic interventions have led to disappointing results and designing a reliable way to assess drug efficacy and verify the achievement of remission, has become itself a major challenge. The SLE responder index (SRI) is a composite tool developed and validated in clinical trials to define in patients with active disease an acceptable response to investigational agents. The role of SRI outside clinical trials has not been defined. The lupus low disease activity state (LLDAS) has been originally validated in a cohort-based setting and it focuses on the achievement of fixed conditions rather than variations from baseline. A formal comparison of these tools outside clinical trials has not been performed.
Objectives: To prospectively assess the performance of SRI and LLDAS in a "real world" observational setting.
Methods: One hundred-thirty-one consecutive patients SLE were subdivided into two groups based on the need or not to escalate their immune suppressive treatment. Clinimetrics including Physician Global Assessment scale (PGA), SLE Disease Activity Index 2000 (SLEDAI-2K) and British Isles Lupus Assessment Group index (BILAG) 2004 version were measured at baseline and at six and 12 months, together with laboratory data and treatment changes. LLDAS and SRI were calculated at each time point.
Results: LLDAS achievement correlated with treatment de-escalation over 12 months (χ2=5.2, p=0.034, OR=4.1 with 95%CI=1.2-14.4), whereas SRI-4 achievement did not. LLDAS responses were more frequent in patients with lower basal SLEDAI-2K (i.e SLEDAI-2K<6; χ2=21.5, p<0.001, RR=8.4 with 95%CI=3.2-25.0), while SRI-4 responses were more prevalent among patients with higher basal SLEDAI-2K and/or severe renal activity at baseline (χ2=5.9, p=0.025, RR=10.8 with 95%CI=1.1-103.1). Positive anti-DNA antibodies associated with non-achievement of LLDAS at any time point. Serositis was associated with lack of LLDAS at baseline, but did not affect LLDAS achievement at 12 months. Normalising complement levels anticipated the achievement of LLDAS and SRI-4.
Conclusion: LLDAS is a valuable tool for assessing response to treatment in the daily rheumatology practice. SRI might be less informative, at least in patients with low basal SLEDAI.

REFERENCES

[1] Franklyn K, et al. Ann Rheum Dis. 2016
[2] Luijten KM, et al. Autoimmunity reviews. 2012
[3] Piga M, et al. Arthritis Res Ther. 2017

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SAT0205 A CYTOKINE "SCAR SIGNATURE" CHARACTERIZES PATIENTS WITH FATIGUE IN SYSTEMIC LUPUS ERYTHEMATOSUS AND SJOGREN'S SYNDROME

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Background: Fatigue is highly prevalent in systemic lupus erythematosus patients (SLE) and primary Sjoegren's syndrome (pSS) and represents one of its unmet needs.[1] Its pathogenesis is multifactorial, with the activity of the underlying disease exerting a prominent role, along with psychological factors and co-morbid conditions. Previous studies evaluating fatigue and cytokines in patients with SLE and pSS have yielded inconclusive results.
Objectives: We aimed to evaluate patient-reported outcome measures reflecting fatigue and their correlation to serum cytokines in patients with SLE and pSS and healthy volunteers (HV). A panel of circulating cytokines, chemokines and growth factors was compared between groups, correlated to the level of fatigue and within SLE and pSS to global disease activity. The objective was to identify cytokines reflecting the degree of fatigue, which could be exploited as biomarkers and therapeutic targets.
Methods: We performed a cross-sectional study on subjects included in the Swiss SLE Cohort Study (SSCS). All subjects were evaluated clinically and had a serum sample taken. Fatigue was assessed by FAS (Fatigue Assessment Scale) and by the vitality subscale (VT) of the Medical Outcomes Study 36-Items Short Form Healthy Survey. Clinical activity in SLE and pSS patients was determined by a 4-point Likert-scale Physician's Global Assessment (PGA). SLE activity was assessed with the SLE Disease Activity Index score with the Safety of Estrogens in SLE National Assessment modification (SELENA-SLEDAI). Serum cytokines were assessed by multiplex bead array analysis (ProcartaPlex, Thermofischer Scientific, USA). P values were adjusted for multiple comparisons.
Results: Fifty-six patients with SLE, 18 with pSS and 18 healthy volunteers (HV) were included between November 2015 and June 2016. There were no significant differences between groups regarding to age, gender and body mass index (BMI). FAS and VT correlated strongly (Spearman's rho -0.87, p<0.01). FAS was significantly higher in patients than in healthy individuals (median FAS 23 [16-31], 28[20.5-35], 17 [15-27] in SLE, pSS and HV respectively; p=0.02). Patients with SLE and pSS displayed higher serum levels of interferon (IFN)-gamma (median [IQR] 10.29 [4.94-15.25] pg/mL in SLE, 9.64 [6.25-13.86] pg/mL, undetectable in HV; p <0.01). Interleukin (IL)-10 also was only detected in pSS and SLE. Hepatocyte growth factor (HGF) was more expressed in patients than in controls (p= 0.01). The levels of most other cytokines (IFN-alpha, IL-1 alpha, IL-2, IL-4, IL-6, IL-17, IL-21 and IL-23) were not detectable. Only HGF displayed a significant correlation with FAS (P Pearson 0.29, p< 0.01).
Conclusion: Patients with SLE and pSS display a molecular pattern of chronic inflammatory conditions, with higher serum levels of IFN-gamma, IL-10 and HGF. The latter two are both involved in regeneration and tissue repair ("scar signature")[2]. HGF levels correlated independently with

the degree of fatigue. More studies are needed to understand the role of this pleiotropic growth factor in self-perceived fatigue in SLE and pSS.

REFERENCES

[1] Chaigne B, Chizzolini C, Perneger T, Trendelenburg M, Huynh-Do U, Dayer E, Stoll T, von Kempis J, Ribi C, Swiss Systemic Lupus Erythematosus Cohort Study G: Impact of disease activity on health-related quality of life in systemic lupus erythematosus - a cross-sectional analysis of the Swiss Systemic Lupus Erythematosus Cohort Study (SSCS). BMC Immunol 2017, 18(1):17.
[2] Fukushima T, Uchiyama S, Tanaka H, Kataoka H: Hepatocyte Growth Factor Activator: A Proteinase Linking Tissue Injury with Repair. Int J Mol Sci 2018, 19(11).

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SAT0206 FACTORS ASSOCIATED WITH HYDROXYCHLOROQUINE USE IN SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS WITH END STAGE RENAL DISEASE

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Background: Hydroxychloroquine (HCQ) use in SLE has been associated with a lower risk of end-organ damage, SLE flares, and thrombosis, with potential mortality benefit among SLE with end stage renal disease (ESRD)[1, 2, 3]. However, fewer than 30% of SLE continue HCQ after ESRD onset[3]. On the other hand, there is an increased risk of HCQ toxicity among SLE-ESRD[4]. It has not been studied what factors are associated with HCQ use after ESRD. Understanding these factors may inform future studies assessing the safety and efficacy of HCQ in SLE-ESRD and address the "confounding by-indication" bias (i.e. different treatments are intentionally chosen for patients with different prognoses) when analyzing retrospective data regarding HCQ use in SLE patients with ESRD.
Objectives: To determine the factors associated with HCQ use among SLE patients with ESRD.
Methods: We performed a retrospective chart review of SLE patients with ESRD at a single tertiary care center between 2010-2017. All included patients met ACR and/or SLICC criteria for SLE and had at least one visit with rheumatology, nephrology, or primary care, before and after the development of ESRD. SLE-related symptoms, serologic markers of disease activity, and rheumatology visits were identified, both pre- and post-ESRD onset. Transplanted patients were excluded at the time of their first renal transplant.
Results: A total of 69 patients were included, 58 had pre-ESRD data. Of these patients, 33/58 (57%) were taking HCQ prior to ESRD onset. Following the diagnosis of ESRD, 40/69 (58%) were prescribed HCQ within six months after ESRD onset. Of these, six discontinued HCQ by the last documented visit, and one patient initiated HCQ six months after ESRD onset (prescribed by a rheumatologist). At the last documented visit, 35/69 patients (51%) had an active HCQ prescription. Patients taking HCQ were younger, more likely to be followed by a rheumatologist, had a higher frequency of documented arthritis, higher frequency of corticosteroid use and immunosuppressive medication use (Table 1). A history of oral ulcers, cytopenias, and elevated levels of dsDNA at any point (either pre or post-ESRD onset) was not significantly associated with HCQ use at the last visit.
Conclusion: HCQ is more likely to be continued among patients with signs of persistently active SLE. HCQ was more likely to be prescribed by a rheumatologist and was associated with the presence of arthritis. Limited systemic evaluation and documentation by the different providers may have resulted in under-reporting of some of the SLE symptoms. However, these findings reflect the "real-world" experience with HCQ use after ESRD in a large tertiary care center.

Table 1. Factors associated with HCQ use at the last visit post-ESRD*

	HCQ+ last ESRD visit N=35	HCQ- last ESRD visit N=34	p-value
Age at ESRD onset, median (IQR)	33 (26, 46)	46 (29, 53)	**0.05**
Time from ESRD onset to the last visit, months, median (IQR)	40 (21, 72)	59 (11, 99)	0.3
Women, n(%)	29 (83)	28 (82)	0.95
Arthritis, n(%)	7 (20)	0	**0.01**
Rash, n(%)	2 (6)	1 (3)	0.61
Oral ulcers, n(%)	1 (3)	0	0.33
Alopecia, n(%)	1 (3)	2 (6)	0.52
Serositis, n(%)	2 (6)	3 (10)	0.59
Cytopenia, n(%)	27 (82)	26 (79)	0.75
Low complement, n(%)	16 (50)	19 (58)	0.54
Elevated dsDNA, n(%)	12 (39)	10 (31)	0.54
Corticosteroid use, n(%)	31 (89)	23 (72)	**0.08**
Immunosuppressive use, n(%)	25 (71)	14 (42)	**0.02**
Rheum visit post ESRD at least once, n(%)	29 (85)	20 (59)	**0.02**

*Symptoms and medications recorded as "ever" after ESRD onset

REFERENCES

[1] Jung H, et al. Arthritis and rheumatism. 2010;62(3):863-8.
[2] Ruiz-Irastorza G, et al. Annals of the rheumatic diseases. 2010;69(1):20-8.
[3] Broder A, et al. The Journal of rheumatology. 2011;38(11):2382-9.
[4] Bertsias GK, et al. Annals of the rheumatic diseases. 2012;71(11):1771-82.

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SAT0207 DEVELOPMENT OF QUESTIONNAIRES TO ASSESS HEALTHCARE UTILIZATION AND ACCESS IN PATIENTSWITH PRIMARY SJÖGREN'S SYNDROME AT THE DIAGNOSIS AND DURING THE DISEASE COURSE

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Background: The geographic variation in healthcare spending, utilization and quality, across and within countries is well documented.
Objectives: In this study, we develop and validate a tool to collect comparable information in Europe to establish practice profiles in the diagnosis, management and treatment of patients with Primary Sjögren's Syndrome (pSS).
Methods: Two questionnaires, one to newly diagnosed patients and one for patients at their follow-up visits, have been developed and validated through a pilot survey. The questionnaires aim to assess the pSS patients' experience and satisfaction with the primary care and specialist services received. The questionnaires consist of 30 items and collect patient-reported data on: type and intensity of treatments and services received, costs, patients' satisfaction, patients' overall health, and socio-demographic characteristics. A narrative-based medicine section is also included to explore patients' journey to pSS diagnosis. The questionnaires are administered to a sample of pSS patients attending >20 clinical centers within the European Horizon2020 project "HarmonicSS". Additionally, a short questionnaire is administered to the specialists of the clinical centers to collect data on their organization.
Results: Preliminary results of pilot survey based on questionnaires administered to 164 pSS patients (157 F: 7 M, mean (SD) age = 60 (12.2) years) from 5 clinical centers have been analyzed. The majority of the respondents had a primary or secondary school (59%). Both the total number of specialists involved in the care other than the rheumatologist and the number of treatments received in the last 12 months before the interview varies among patients and across centers (p<0.001). Although, as expected, the most frequently involved specialists were the ophthalmologist (90%) followed by the gynecologist and the dentist. Additionally, patients with lower education have attended on average less specialists than those with a high school or university degree (p<0.001). Findings from the survey to clinicians also show significant geographic variations in the organization of the care to pSS in the participating centres and in the level of integration among different professionals and care settings. On average, 4 professionals (i.e. clinicians and nurses) per centre are involved in care of pSS patients although with significant differences among centre (min=1, max=10) also in the mix of the staff. In 80% of the centres clinicians use written documentation to exchange patients' information, followed by periodic meetings with colleagues (56%) and phone calls with the family doctor (37%). In 54% of the centres the newly diagnosed patients are provided with information pamphlet and