of salivary siglec-5 was not correlated with ESSDAI or focus score. On ROC analysis, area under the curve was 0.774(0.724-0.826). With cut off value 400pg/mL, sensitivity and specificity was 0.69 and 0.70 respectively. In validation cohort (45 pSS patients and 45 non SS sicca patients) where patients without sicca symptom but have 1 or more positive items in ESSDAI were included, sensitivity and specificity of siglec-5 was 64.4% and 77.8%, respectively.

Conclusion: The level of soluble siglec-5 is significantly increased in the saliva of pSS patients and reflects the severity of hyposalivation and ocular surface damage. Although the mechanism of the contribution to gland dysfunction is unclear yet, this easily obtainable salivary biomarker may add benefits on the diagnosis of pSS.

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AB0533 POSITIVE RATE OF SMALL INTESTINAL BACTERIAL OVERGROWTH TEST (SIBO) WAS SIGNIFICANT CORRELATIONS TO DISEASE ACTIVITY OF PRIMARY SJOGREN'S SYNDROME (PSS)

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Background: Primary Sjogren's syndrome (pSS) is a chronic inflammatory autoimmune disease that primarily affects the exocrine glands, which is involved in gastrointestinal unavoidably. Once intestinal flora imbalance, it will have a major impact on health. The Small intestinal bacterial overgrowth test (SIBO) is an important method for detecting bacterial growth in the small intestine.

Objectives: To investigate the difference in the positive rate of SIBO between disease active and stable patients with pSS, and to retrospectively analyze the correlation between disease activity and SIBO.

Methods: Total 51 patients with pSS diagnosed and treated in our hospital were selected as subjects of this study from October 2018 to December 2018, according to the PSS Disease Activity Rating System (SSDAI) scores. They were divided into Group A: active period (point≥5 points), 25 cases and group B: stable period (point<5 points), 26 cases. Two sets of clinical data were collected, including SSDAI scores and SIBO. The difference between the percentage of active and stable SIBO positive patients was compared. The maximum sum of hydrogen and methane in the two groups was tested by rank sum test, and the correlation between pSS disease activity and SIBO positive rate was analyzed.

Results: The positive rate of SIBO in patients with active pSS was significantly higher than that in stable phase, and the difference was statistically significant (P=0.026), as shown in Table 1. The two groups were compared with H2MaX or CH4MaX, and the Mann-Whitney U test results were statistically significant (P=0.001, P=0.006), as shown in Table 2.

Conclusion: SIBO positive rate was significant correlations to pSS disease activity. So, correcting intestinal flora imbalance combined with conventional treatment may bring greater benefits to patients with Sjogren's syndrome.

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Table 1. Comparison of SIBO positive rate between active period and stable period [n (%)]

SIBO positive	SIBO negative	total
active period 23(92.00%)	2 (8.00%)	25(100%)
stable period 16(61.50%)	10 (38.50%)	26(100%)
Total 39 (76.50%)	12 (23.50%)	51(100%)

Table 2. Mann-Whitney U test of two sets of H2MaX or CH4MaX independent samples

Disease active(25 cases)	Disease stable(26 cases)	difference
H2MAX 51.00(50.50)	17.50(22.50)	P=0.001
CH4MaX 6.00(2.00)	5.00(2.00)	P=0.006

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AB0534 DEVELOPMENT OF A MULTI-MODALITY IMAGING APPROACH TO EVALUATE LUPUS NEPHRITIS AND INITIAL RESULTS

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Background: Lupus nephritis (LN) remains a significant cause of morbidity and mortality in subjects with Systemic Lupus Erythematosus (SLE). The gold standard for evaluation of LN remains the kidney biopsy, whereas renal function is usually evaluated by eGFR and urinary protein: creatinine ratio. More effective and sensitive methodology is needed to assess LN and also the response to treatment. Functional imaging of the kidney using quantitative techniques has great potential, as it can assess kidney function and pathologic changes non-invasively by evaluating perfusion, oxygenation, cellular density and fibrosis.

Objectives: To develop a multi-modality imaging approach for the evaluation of the spectrum of pathologic changes in LN.

Methods: In this multi-center study, subjects who were having a standard of care renal biopsy for LN were asked to participate in the imaging evaluation. Local Institutional Review Board approval was obtained, and subjects signed an Informed Consent Form. Dynamic contrast enhanced MRI (DCE-MRI) was employed to detect changes in vascularization and perfusion[1], Diffusion Weighted Imaging (DWI) to assess interstitial diffusion, T2*Map/BOLD - the tissue oxygenation and T1rho to evaluate fibrosis[2]. The imaging scores will be compared to renal biopsy, including ISN/RPS classification of LN, activity index and chronicity index.

Results: Five patients have been evaluated to date and their imaging data assessed for quality. The initial results have demonstrated the feasibility of acquiring multi-modality imaging data, including dynamic imaging sequences, in the multi-center trial setting. Figure 1 illustrates scans from a representative patient. This study will determine whether multi-modality imaging could become an effective, non-invasive tool to assess renal function and pathology in LN.

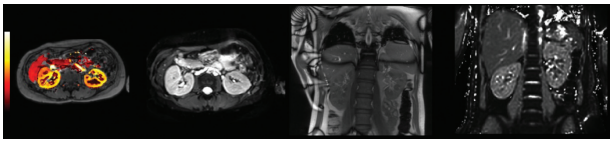

Figure 1. Multi-modality imaging from a representative LN patient. Left: Map of the initial rate of enhancement (DYNAMIKA™) from DCE-MRI showing the degree of perfusion (the white-yellow colors correspond to increased and the redder colors decreased perfusion) in which decreased perfusion can be seen in the anterior pole of the right kidney (arrow); Left center: DWI sequence that shows diffusion; Right center: T1rho illustrating fibrosis; and Right:T2*Map/BOLD to investigate tissue oxygenation within the renal medullary tissue.

Conclusion: The initial assessment of 5 LN subjects has established the feasibility of multi-modality imaging as a tool to evaluate LN in a multi-center study. By assessing functional and structural MRI outcomes and correlating them to clinical data, this study will provide essential preliminary evidence on the value of multi-modality imaging in diagnosis and evaluating the response to treatment of LN patients.

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AB0535 FACTORS RELATED TO FATIGUE IN SYSTEMIC LUPUS ERYTHEMATOSUS: A COHORT CROSS-SECTIONAL STUDY

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Background: Fatigue is the most prevalent symptom in Systemic Lupus Erythematosus (SLE) as it is present in up to 90% of patients; it is considered to be the most disabling symptom in around half of the patients [1,2]. Its aetiology is multi-factorial and there is conflicting evidence on the relationship between fatigue and SLE disease activity, and between fatigue and vitamin D deficiency. The Ad Hoc Committee on Systemic Lupus Erythematosus Response Criteria for Fatigue recommended the Fatigue Severity Scale (FSS) for the measurement of fatigue in SLE [2,3].
Objectives: The aim of the study was to characterise the relationship between fatigue and other factors, including disease activity, vitamin D level, pain, depression, anxiety, sleep quality and exercise in SLE. Moreover the prevalence of fatigue in the Maltese population of SLE patients was established.
Methods: 92 SLE patients, who fulfilled the SLICC classification criteria for SLE, gave informed consent to participate in the study. This consisted of an interview, blood and urine tests, and filling the questionnaires: Fatigue Severity Scale (FSS), visual analogue scale (VAS) for fatigue, Hospital Anxiety and Depression Scale (HADS), VAS for pain, Pittsburgh Sleep Quality Index (PSQI) and modified Health Assessment Questionnaire (mHAQ). SLE disease activity was measured by SLE disease activity index-2K (SLEDAI-2K). Approval to carry out this study was obtained from the University Research Ethics Committee.
Results: The mean age of the cohort studied was 46.9 years. 92.4% were females and the median disease duration was 13 years. 56.5% had an abnormal level of fatigue (FSS >3.7) and the median FSS was 4.17. Fatigue measured by FSS, had a significant correlation with VAS Pain ($R=0.536$, $p<0.001$), HADS-D ($R=0.535$, $p<0.001$), HADS-A ($R=0.395$, $p<0.001$), PSQI ($R=0.551$, $p<0.001$) and mHAQ ($R=0.435$, $p<0.001$). VAS fatigue had a significant correlation with SLEDAI-2K ($R=0.247$, $p=0.018$). There was no significant relationship between fatigue and vitamin D level or regular exercise. ANCOVA analysis showed that fatigue measured by FSS and VAS fatigue was significantly dependant on depression measured by HADS-D ($p<0.001$) and VAS pain ($p<0.001$).
Conclusion: Fatigue is highly prevalent in SLE patients. This study identified a number of factors that are significantly related to fatigue; of these it is most strongly dependent on depression and pain. This suggests that the aetiology of fatigue in SLE is multi-factorial and that in SLE patients reporting fatigue, the underlying cause needs to be identified and treated.

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AB0536 PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND LYMPHOMA AT A TERTIARY HOSPITAL: DESCRIPTIVE ANALYSIS OF NINE PATIENTS

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Background: Evidence of an increased risk to develop haematological malignancy, and especially non-Hodgkin's lymphoma (NHL) in autoimmune diseases, has been gathered since the 1970s. In the last decade studies from SLE cohorts have consistently shown a markedly increased risk of NHL.
Objectives: To analyze clinical and disease characteristics in SLE patients who developed a lymphoma during follow-up, as well as to define characteristics of the lymphoma and its evolution.
Methods: Retrospective observational, longitudinal study conducted in a tertiary hospital. Medical records of 362 patients with $\geq$4 SLICC classification criteria of SLE were reviewed, including those with lymphoma diagnosis. Demographic and clinical data, comorbidities, SLE manifestations and therapy, data related to lymphoma and outcome were collected. Descriptive statistic analysis with measures of central tendency and measures of variability was performed.
Results: Of the 362 SLE patients, 9 (2.5%) were diagnosed of lymphoma, of which 100% female. Mean age at SLE diagnosis was 34 y.o (SD 11) and average duration from SLE diagnosis to lymphoma was 17 years (SD 14). 7 patients were caucasian and 2 hispanic. Observed comorbidities were hypertension (6 pt, 67%), diabetes (2 pt, 22%), dyslipidemia (3 pt, 33%), HBV infection (1 pt, 11%) and active smoking (6 pt). No malignancy history was detected. Most frequent SLE features were haematological (9 pt, 100%), joint (5 pt, 56%) and skin (5 pt) involvement. The serious ones were: 3 patients with haemolytic anaemia (1 of them, platelets <20000), 2 epilepsia (1 of them with CNS vasculitis), 1 glomerulonephritis, 1 pulmonary hypertension and 1 hemophagocytic syndrome. Only 1 patient had overlap with Sjögren's syndrome. At the time of lymphoma diagnosis, 7 patients were on steroids, 4 on immunosuppressants (2 mycophenolate, 1 azathioprine and 1 rituximab) and 3 on antimalarials (Table 1). Mean age at lymphoma diagnosis was 51 y.o (SD 10). 5 patients (56%) had diffuse large B-cell lymphoma (DLBCL), 1 had NHL, 1 had Hodgkin's lymphoma, 1 had mantle B-cell lymphoma and 1 had MALT lymphoma. Only 1 patient, of 4 with available data, had EBV positive in the tissue. 7 patients (78%) received chemotherapy and 2 patients completed treatment with autologous peripheral stem-cell transplantation. Three patients died, 2 due to lymphoma and one due to other causes (severe flaccid paralysis, Miller Fisher syndrome). Overall survival after lymphoma diagnosis was 8 years (SD 6).
Conclusion: In our patients, unlike that reported in the literature, lymphoma diagnosis was in SLE with longer duration of the disease, and all cases were female. Most frequent subtype was NHL, and all patients had previous haematological manifestations. Regarding previous SLE treatments, 5 patients had been exposed to immunosuppressants.