Background: In Systemic Lupus Erythematosus (SLE) patients the incidence of lupus nephritis (LN) is about 40% [1]. The rate of progression to end stage renal disease (ESRD) is 4.3-10.1% [2] and renal involvement is a strong predictor of morbidity and mortality.

Objectives: To describe clinical, histological features and renal outcomes of LN patients included in our single-center registry reporting data from more than 30 years. Moreover, we examined the correlation between clinical features at LN diagnosis and therapeutic lines used during the course of a 24 years follow-up.

Methods: A total of 71 patients were diagnosed with LN from 1989 to 2020. Demographic features and laboratory abnormalities (serum creatinine, 24 hours urine protein, urinary sediment, ds-DNA) at the time of LN diagnosis and at last available follow-up, were evaluated. We also examined renal biopsy performed and the histological classes (proliferative vs non-proliferative). We considered the increase number of therapeutic lines adopted as a negative prognostic factor in response to therapy. Mean (SD) or median (IGFR) were used according the variable distribution. T-test and Chi square and Mann-Whitney were used and p-value <0.05 were considered significant.

Results: Among 71 patients with LN, 63 (88.7%) were females and 8 (11.3%) males, with a F:M ratio of 6. Median SLE duration was 180 (162) months. The median age at the onset of nephritis was 28 (19.5) years and occurred in median after 12 (60) months from SLE diagnosis. Sixty patients underwent a biopsy: the histology showed class III or IV proliferative glomerulonephritis in 19 patients (31.6%) and a non-proliferative class in 11 (18.3%) (p=0.0001). Median serum creatinine value, 24 hours urine protein, urinary sediment, anti-ds-DNA at LN onset are reported in Table 1. Induction therapy was performed with cyclofosfamide in 14.5% of cases, mycophenolate in 21.1%, rituximab in 1.3%, cyclosporine A in 1.9% and azathioprine in 4.6%. The lines of therapies adopted during the follow-up ranged between a minimum of 0 and a maximum of 6 lines with a median value of 1.

Overall, the median follow-up was 180 (111) months and 30 (21.3%) patients had at least 120 months of follow-up. Median serum creatinine value, 24 hours urine protein, urinary sediment and eGFR last available follow-up are reported in Table 1. Three patients underwent dialysis and 3 kidney transplantation. Eight patients underwent a re-biopsy: 7 (87.5%) had a proliferative class and 1 (12.5%) that had a membranous class (p=0.01). Median serum creatinine value, 24 hours urine protein, urinary sediment, anti-ds-DNA at LN onset are reported in Table 1. Induction therapy was performed with cyclofosfamide in 14.5% of cases, mycophenolate in 21.1%, rituximab in 1.3%, cyclosporine A in 1.9% and azathioprine in 4.6%. The lines of therapies adopted during the follow-up ranged between a minimum of 0 and a maximum of 6 lines with a median value of 1.

Conclusion: Among patients with LN the proliferative classes are the most common. At the 15-year follow-up 2.1% had renal transplantation and 2.1% dialysis. We did not detect any association between age at diagnosis, time from renal onset to the onset of the disease and the number of therapeutic lines adopted (Figure 1).

REFERENCES:

Table 1. Laboratory features in SLE patients at LN onset, at last available follow-up and in re-biopsied patients.

<table>
<thead>
<tr>
<th></th>
<th>LN onset (n=71)</th>
<th>After 10 years long FOLLOW-UP (n=30)</th>
<th>P value</th>
<th>Re-biopsied patients (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum creatinine (mg/dl)</td>
<td>0.81 (+/− 0.4)</td>
<td>0.83 (+/− 0.6)</td>
<td>0.07</td>
<td>1.05 +/− 0.45</td>
</tr>
<tr>
<td>24 hours urine protein</td>
<td>3000 (+/− 3707)</td>
<td>330 (+/− 793)</td>
<td>&lt;0.0001</td>
<td>5068 (2392)</td>
</tr>
<tr>
<td>Active urinary sediment</td>
<td>0.24h (mg/24h)</td>
<td>64 patients (45,44%)</td>
<td>&lt;0.0001</td>
<td>12 patients (3,6%)</td>
</tr>
<tr>
<td>Anti-ds-DNA + eGFR</td>
<td>30 patients</td>
<td>2 patients</td>
<td>&lt;0.0001</td>
<td>8 patients (100%)</td>
</tr>
</tbody>
</table>

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Figure 1. Otological manifestations in the study SLE patients (n=48) and the healthy controls (n=12).
and KEGG biological pathway analysis were performed to predict the functions of differentially expressed lncRNAs and co-expressed potential targeting genes. Subsequently, a ceRNA (lncRNA-miRNA-mRNA) network including 2320 ceRNA pairs were constructed based on predicted miRNAs shared by lncRNAs and mRNAs.

**Conclusion:** The expression profile provided a systematic perspective on the potential functions of IncRNAs miRNAs, mRNAs and circRNAs in the pathogenesis of SLE. Therefore, this study will aid in the development of new diagnostic biomarkers and drug therapies.

**REFERENCES:**


**Disclosure of Interests:** None declared. DOI: 10.1136/annrheumdis-2021-eular.3784

**POS0786**

Unmet Treatment Needs in Systemic Lupus Erythematosus (SLE): A Cross-Sectional Assessment of Disease Activity in SLE Patients During Their Last Visit


**Background:** The current goal of treatment in SLE is remission or low disease activity (LDA) and prevention of flares, achieved with the lowest possible dose of glucocorticoids. Nevertheless, in current clinical practice a significant number of patients still has active disease.

**Objective:** To assess the current disease activity state of SLE patients during their most recent visit in two centers (Department of Rheumatology in Asklepieio General Hospital and Department of Rheumatology in Attikon University Hospital, both in Athens, Greece). The study aims to describe the treatment regimens used and the remission status.

**Methods:** Cross-sectional study of patients with a diagnosis of SLE for at least one year. Patients were divided into four groups: 1) Remission off-therapy: SLE Disease Activity Index (SLEDAI) ≤4 without prednisone or immunosuppressive drugs (IS), 2) Remission on-therapy: SLEDAI ≤4, prednisone dose <60mg/day and/or IS (deviation from standard biological criteria, phase 1), 3) LDA: SLEDAI ≤6, prednisone dose ≤0.5mg/day and/or IS (maintenance phase), 4) Active disease: SLEDAI >6 and/or prednisone dose >75mg/day and/or IS (induction phase).

**Results:** 205 patients were included (95.1% female, mean (SD) age 48.4 (14.9) years and median disease duration (IQR) 6.2 (12.6) years). A history of lupus nephritis and neuropsychiatric SLE was present in 16.6% and 17.1% of our patients, respectively. Seventy-five patients (36.6%) had LDA, whereas 82 patients (40%) had active disease. More than 85% (86.3%) of patients were in treatment with hydroxychloroquine and 64.4% were receiving immunosuppressive drugs. Regarding glucocorticoids, 50.2% (n=103) were treated with prednisone dose ≤7.5mg/day and over 40% (42.4%, n=87) did not receive prednisone at all. A SLEDAI score 0 and 1-4 was achieved in 24.4% and 42.9% of patients, respectively, but only 3.9% had a SLEDAI >5, indicative of high disease activity.

**Conclusion:** Although the majority of our patients were treated with hydroxychloroquine and glucocorticoids in acceptable levels of daily dose, four out of ten patients in our practice have active disease during their last visit. Achieving treatment goals in SLE patients remains a challenge for future novel therapies.

**REFERENCES:**


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**POS0778**

Berberine Modulates Lupus Syndrome via the Regulation of Gut Microbiota in MRL/Lpr Mice

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**Background:** Intestinal flora disorder and immune abnormalities have been reported in systemic lupus erythematosus (SLE) patients. Berberine (BBR) showed significant effects in regulating the intestinal flora, repairing gut barriers and regulating immune cells. While few reports mentioned the abnormal gut microbiota and metabolites in Chinese SLE patients.

**Objectives:** Our investigation tried to illustrate the relationship between gut microbiota, intestinal metabolites and disease activity in Chinese SLE patients. And the effect of BBR to intestinal dysbacteriosis, multiple organ damages and over-activated immune system in MRL/Lpr mice.

**Methods:** 16S high-throughput (16S RNA) sequence, qRT-PCR and gas chromatography technology were used to determine the gut microbiota and metabolites in 104 SLE patients from Affiliated Hospital of Nantong University, China. BBR was orally treated to the MRL/Lpr mice in low, medium and high doses. After 6 weeks treatment, mice were sacrificed. Serum, faeces and organs were collected for further studies.

**Results:** Chinese SLE patients showed higher abundance of Bacteroidetes and lower abundance of Firmicutes. The results of qRT-PCR showed high Firmicutes/Bacteroidetes (F/B) ratio of SLE patients. The F/B ratio was negative correlated with SLE disease activity index (SLEDA) score. Almost all the tested short-chain fatty acids (SCFAs) found statistically significant results in SLE and LN (lupus nephritis) patients, especially the propionic acid and butyric. BBR altered the relative abundance of Bacteroidetes and Verrucomicrobia and the butyric acid content in colon of MRL/Lpr mice. The increase of tight junction protein also indicated the gut barrier was repaired by BBR. Treg and Tr1 cells in spleen and mesenteric lymph node (MLN) were increased. These results revealed a positive therapeutic effect of berberine on SLE from gut microbiota to immune status.

**Conclusion:** Our study highlights current status of intestinal dysbacteriosis in Chinese patients with SLE and differences in intestinal metabolites among patients with different disease states. The regulation of intestinal flora and the repairment of gut barrier by intestinal metabolites in BBR treated mice seemed to be the factor that directed the immune responses and disease outcomes. The ultimate goal of our study was to determine the beneficial effects of regulating the gut microbiota on the treatment of SLE. The application of berberine is a relatively safe and convenient way. In the coming investigations, we plan to focus on the study of berberine and its metabolites on intestinal function and systemic immunity.

**REFERENCES:**


**Figure 1.**