Intercurrent infections (major and minor) were associated with the occurrence of SLE flares (major and minor; HR 1.9, 95% CI: 1.3–2.9) (Figure 1). The hazard ratio for a major SLE flare following a major infection was 7.4 (95% CI 2.2–24.6). Major infections were not associated with the occurrence of minor flares.

Conclusions The results of the present study confirm a high frequency of infections in SLE patients and suggest that intercurrent infection is a risk factor for SLE flares. These findings underline the importance of prevention and treatment of infections in SLE patients and create awareness of infections as potential triggers of SLE flares.

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PO.8.168 THE THIRD DOSE OF MRNA COVID 19 VACCINE IS SAFE AND EFFICACIOUS FOR SLE PATIENTS RECEIVING BELIMUMAB

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Introduction In the era of COVID-19 pandemic, data on safety and efficacy of anti-COVID vaccines in SLE patients is needed and scarce. Belimumab is a monoclonal antibody directed at BAFF, an essential cytokine in B cell survival, though it does not impair efficacy of some traditional vaccines. Thus, the aim of our study was to assess immunogenicity and safety of BNT162b2 Pfizer mRNA vaccine in SLE patients treated with Belimumab.

Methods SLE patients treated with Belimumab for at least 6 months in the Sheba Medical Center were included in this study. All were recommended to receive the BNT162b2 COVID-19 mRNA vaccine according to Ministry of Health recommendations, and thereafter to perform a serologic test for CoV-2 IgG 2–6 weeks after receiving the 2nd or 3rd doses. Clinical data included demographics, SLE treatments, adverse effects to the vaccine as well as SLEDAI scores performed 2 weeks before receiving 1st dose and 6 to 8 weeks after receiving 2nd and 3rd doses of the vaccine.

Results Our cohort included 17 patients, 15(88.2%) were females, median age was 50±14.2 years, and disease duration was 12±10.57 years. Median Belimumab treatment time was 6±2.5 years. In our cohort 2/17 received only 2 vaccine doses as thereafter the suffered mild COVID-19 infection, while 15/17 patients received 3-doses. Serologic assessment was performed for 10 patients, 7/10(70%) became seropositive following the second dose, while 2/3 patients seroconverted only after the 3rd dose. Vaccination was well tolerated with minimal adverse events and no disease flares (e,g. SLEDAI 7.7 ±5.19 and 7.82±5.2 before vaccination and post 3rd dose respectively).

Conclusions Immunization with 3 doses of BNT vaccine is safe and efficacious for SLE patients treated with Belimumab. Only following the 3rd dose immunogenicity of SLE patients in this cohort mounted to 90%, thereby approximating the general healthy population. Assessment of seroconversion and consideration of subsequent boosters' vaccine should be considered for SLE patients treated with Belimumab.

PO.8.169 IMMUNE RESPONSES TO MRNA VACCINES AGAINST SARS-COV-2 IN PATIENTS WITH IMMUNE-MEDIATED INFLAMMATORY RHEUMATIC DISEASES

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Aims To fully characterise B-cell and T-cell immune responses elicited by mRNA SARS-CoV-2 vaccines in patients with rheumatic diseases under immunotherapies, and to identify which drugs reduce vaccine's immunogenicity.

Methods Humoral, CD4 and CD8 immune responses were investigated in 100 naïve patients with SARS-CoV-2 with selected rheumatic diseases under immunosuppression after a two-dose regimen of SARS-CoV-2 mRNA vaccine. Responses were compared with age, gender and disease-matched patients with IMRD not receiving immunosuppressors and with healthy controls.

Results Patients with IMRD showed decreased seroconversion rates (80% vs 100%, p=0.03) and cellular immune responses (75% vs 100%, p=0.02). Patients on methotrexate achieved seroconversion in 62% of cases and cellular responses in 80% of cases. Abatacept decreased humoral and cellular responses. Rituximab (31% responders) and belimumab (50% responders) showed impaired humoral responses, but cellular responses were often preserved. Antibody titres were reduced with mycophenolate and azathioprine but preserved with leflunomide and anticytokines.

Abstract PO.8.169 Table 1 Multivariant analysis

Table 1: Multivariant analysis

	Abatacept	HCQ	Cumulative Glucorticoid dose	Cumulative methotrexate dose	Age >65 years	Disease Duration >10 years
Seronversion	β - 0.1 ρ = 0.04	β 0.22 ρ = 0.01	β - 0.26 ρ = 0.44	β - 0.19 ρ = 0.03	β - 0.27 ρ = 0.002	β - 0.10 ρ = 0.22
IgG anti-spike levels	β - 0.13 ρ = 0.001	β 0.27 ρ = 0.01	β - 0.25 ρ = 0.004	β - 0.29 ρ = 0.001	β - 0.19 ρ = 0.02	β - 0.14 ρ = 0.04
CD4 T-cell response	β - 0.1 ρ = 0.03	β 0.10 ρ = 0.24	β - 0.04 ρ = 0.61	β - 0.03 ρ = 0.64	β - 0.05 ρ = 0.56	β - 0.14 ρ = 0.11
CD8 T-cell response	β - 0.08 ρ = 0.02	β 0.20 ρ = 0.12	β - 0.1 ρ = 0.43	β - 0.02 ρ = 0.24	β - 0.1 ρ = 0.56	β - 0.1 ρ = 0.15

Conclusions Patients with IMRD exhibit impaired SARS-CoV-2 vaccine immunogenicity, variably reduced with immunosuppressors. Among commonly used therapies, abatacept and B-cell depleting therapies show deleterious effects, while anticytokines preserved immunogenicity. The effects of cumulative methotrexate and glucocorticoid doses on immunogenicity should be considered. Humoral and cellular responses are weakly correlated, but CD4 and CD8 tightly correlate. Seroconversion alone might not reflect the vaccine's immunogenicity.