Introduction:
Systemic Lupus Erythematosus (SLE) is a multisystem autoimmune disease with variable manifestations. Dysregulation of the immune system has led to wide interest in multiple therapeutic targets, including Rituximab. We aim to assess the response to Rituximab in our population with SLE.
Methods:
Patients diagnosed with SLE according to the ACR/EULAR criteria between Jan/2004 and July/2020 in Prince Sultan Military Medical City in Riyadh and King Faisal Specialist Hospital and Research Center in Jeddah were collected. Those who received Rituximab at the discretion of their primary Rheumatologist were included. Data regarding manifestations, C3 and C4, Anti-dsDNA, SLEDAI score, creatinine, CBC and proteinuria were assessed at baseline, 3, 6, and 12 months post Rituximab.
Results:
A total of 40 patients were included. Females represented 85% of the patients with a mean age of 39 years. A total of 15 patients (37.5%) had Lupus Nephritis (LN), 18 (40%) had arthritis, 4 (10%) had vasculitis and 5 (12.5%) had hematologic manifestations. There was a significant reduction of the SLEDAI score from baseline (8) to 6 (4) and 12 (2) months, $p<0.001$, Anti-dsDNA from baseline (897) to 6 (247) and 12 (193) months, $p<0.001$. A significant improvement in C3 level was also seen from baseline (0.65) to 6 (0.89) and 12 (0.93) months, $p<0.001$. However, the change in serum creatinine was insignificant from baseline (62.5) to 12 months (62), p-value 0.583. A subgroup analysis that included patients who received Rituximab for LN had a significant reduction of proteinuria level from a median baseline (1.47g/day) to a median of (0.24g/day) at 12 months, p: 0.028.
Conclusion:
In our population, Rituximab was effective in reducing SLEDAI score and improving the serologic markers. A subgroup analysis showed significant effect on proteinuria. Our findings support the use of Rituximab in SLE. However, larger trials might be needed.

Table 1. Indications for Rituximab.

	n (%)
Reason for Rituximab	
APS Nephropathy	1 (2.5)
Arthritis	15 (37.5)
Arthritis + Thrombocytopenia + AIHA	1 (2.5)
Arthritis + LN	1 (2.5)
CNS Demyelination	1 (2.5)
CNS Vasculitis	3 (7.5)
Leukopenia	1 (2.5)
LN	13 (32.5)
LN + AIHA	1 (2.5)
SLE Arthritis + Hematologic	1 (2.5)
Thrombocytopenia	1 (2.5)
Vasculitis	1 (2.5)

Table 2. Response to Rituximab.

	Baseline Median (25^{th} – 75^{th} quartile)	6 months Median (25^{th} – 75^{th} quartile)	12 months Median (25^{th} – 75^{th} quartile)	p-value
SLEDAI	8 (6 - 13)	4 (1.5 - 4)	2 (0 – 4)	<0.001*
Log anti-dsDNA antibody levels	897 (134 - 1259)	247 (65 – 572)	193 (79 – 492)	<0.001*
Complement C3	0.65 (0.40 – 0.96)	0.89 (0.66 – 1.14)	0.93 (0.71 – 1.25)	0.001*
Complement C4	0.10 (0.07 – 0.24)	0.17 (0.13 – 0.31)	0.19 (0.13 – 0.28)	<0.001*
Creatinine outcome in lupus patients with Lupus Nephritis	62.5 (48.5 – 92.5)	60.5 (50.3 – 80.8)	62 (54.3 – 86.8)	0.583

Table 3. Effects on proteinuria in patients with nephritis.

	Baseline Median (25^{th} – 75^{th} quartile)	12 months Median (25^{th} – 75^{th} quartile)	p-value
Proteinuria outcome in lupus patients	1.47 (0.63 – 3.91)	0.24 (0.10 – 0.51)	**0.028***