



# A Multicenter Longitudinal Study of the Prevalence and Mortality rate of Systemic Lupus Erythematosus patients in Oman: Oman Lupus Study.



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## Background

Systemic Lupus erythematosus (SLE) is a multi-systemic autoimmune disease that is associated with significant morbidity and mortality. It generally exhibits different phenotypic expressions and severities among different ethnic groups as was found in numerous observational studies.

The reported worldwide incidence and prevalence of SLE vary considerably, which may be attributed to ethnic and geographic differences in the populations being studied, the definition of SLE applied and the methods of case identification. Also, Lupus in Arab countries is quite common. Several studies describing the clinical and serologic features of SLE in Arab countries and few from Oman have been published, however the data about prevalence of this disease is scarce.

## Objectives

This study is the first multicenter study in the region conducted to estimate the prevalence of the disease in Oman and describe the mortality and survival rate in Omani lupus population. It will provide the basis for future therapeutic and genetic trials in the Arab world in addition to developing a national lupus registry with large cohort of patients that may aid survival analysis and better understanding of the disease outcomes in the region compared to international data.

## Methods

This is an observational study was ethically approved by the research and ethical review and approval committee, Ministry of health (MoH/CSR/17/6785).

All Omani pediatrics and adult SLE patients who fulfil at least 4 of 1997 ACR (American college of Rheumatology) classification criteria or SLICC (Systemic Lupus International Collaborating Clinics) classification criteria and were seen in all rheumatology centers in the Sultanate of Oman over a 14-year period between Jan 2006 till Feb 2020 were included in this study.

## Results

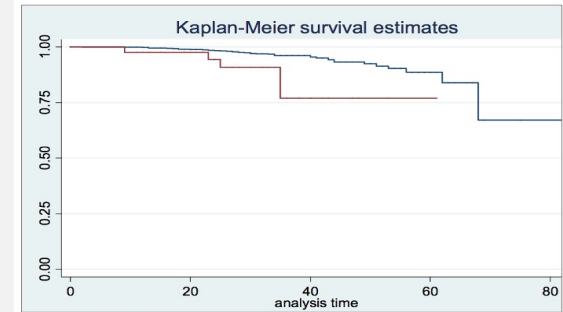
Clinical Characteristics Total (N= 1160)		Laboratory parameters from available data	
Variable	No. (%)	Variable	Frequency (%)
Average Age (years)	33 ± 12	Hemolytic anemia	442 (38)
Gender		Positive Direct Coomb's test	381 (33)
Female	MM 143 (12.3)	Thyroid Dysfunction	223 (19)
Male	FFe 1017 (87.7)	ANA	1121 (96.5)
Average Age at diagnosis	24 ± 12	Anti-dsDNA	833 (72)
Overlapping syndromes	169 (15)	Anti sm	350 (30)
•Rheumatoid Arthritis.	38 (22)	Anti Ro/SSA	450 (39)
•Scleroderma	22 (13)	Anti La/SSB	173 (15)
•Myositis.	17 (10)	ACL IgM	38 (3.2)
•Sjogren's Syndrome	39 (23)	ACL IgG	178 (15)
•Mixed Connective tissue diseases.	24 (14)	β2-glycoprotein I	151 (13)
•Others	30 (18)	Lupus anticoagulant	224 (19)
Arthritis/ Arthralgia	819 (70)	Complement C3	731 (64)
Discoid Rash	92 (8)	Complement C4	812 (71)
Malar Rash	340 (29)	Renal Involvement	607 (52)
Photosensitive Rash	364 (31)	Availability of Kidney Biopsy	376 (33)
Alopecia	343 (30)	Class I/II	44 (12)
Mucosal ulcers	230 (20)	Class III	81 (21)
Lymphadenopathy	211 (18)	Class IV	182 (48)
Cardiac Involvement	238 (21)	Class V	49 (13)
Neuropsychiatric Involvement	242 (21)	Class VI	3 (0.8)
Respiratory involvement	215 (19)	Difficult to classify	21 (5.5)
GI involvement	91 (8)	Lupus Nephritis (LN) class of repeated kidney Biopsy:	55 (9)
Eye Involvement	42 (4)	Class I/II	3 (5)
		Class III	6 (10)

Table 2: The Prevalence Rate of SLE patients of different age group in Oman Lupus Cohort

Age Group	The Prevalence (per 100,000 inhabitants)
Paediatric Patients up to 12 years	5.05
Adolescence Patients 13-18 years	31.6
Adult patients	
o Adult 19-24 years	35.1
o Adult 25-29 years	32.4
o Adult 30-39years	63.01
o Adult 40-49years	60.12
o Adult >50 years	39.28
o Mean for All Adult patients	45.96
Oman Lupus Cohort Overall Mean	38.08

Table 3: Mortality Rate and different risk factors that lead to death in Oman Lupus Cohort (n= 54)

Mortality Rate (5%)				
Common Causes of Death	No (%)	OR (95%CI)	P Value	Adjusted P
Sepsis.	34 (63)	2.13 (1.15-4.31)	0.000	0.008
Renal Diseases	19 (35)	3.73 (2.66-5.22)	0.000	0.003
Lung Diseases	17 (31)	6.87 (3.90-12.11)	0.000	0.000
Neurological Diseases.	13 (24)	2.96 (1.68-5.22)	0.000	0.000
Cardiovascular Diseases	12 (22)	8.62 (4.81-15.41)	0.000	0.000
Others	12 (22)	4.47 (1.23-6.09)	0.000	0.011



Negative ANA  
Positive ANA

## Conclusion

This study had shed some lights in the epidemiological and clinical characteristics of our patients.

The mortality rate (5%) was similar to what is reported by other groups. The coexistence of systemic sclerosis correlates significantly with death. Male patients had significantly higher mortality rate than females (7.6% vs 5.4%, P value = .04).

The mean prevalence of SLE among different age groups is varying according to different region. It was found in our cohort that the mean prevalence in Oman to be around 38.8 (Range 5 – 63 per 100,000 inhabitants). The highest prevalence was found for age group between 30-49 years (the average prevalence in this group is around 62 per 100,000 inhabitants).

Patients with positive ANA had 100% 10 years and 90% 40 years survival rate, but patient with negative ANA had lower survival outcome in comparison to ANA positive patients.