

Socioeconomic Status And Systemic Lupus Erythematosus In Iranian Patients: A cross- sectional study

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Aim

- **Lupus** is a systemic and autoimmune disease with complex pathology.
- The difference between clinical manifestations and the disease course is due to the complex interaction of genes and environment, and it is often difficult to determine which factor is more prominent.
- Low socioeconomic status is associated with a worse prognosis, such as higher disease activity and increased organ damage.
- As socioeconomic status (SES) seems to be a crucial part of environmental factors, we designed a study looking for the relation between SES and first manifestation of the disease in Iran.

METHOD

- In this cross sectional retrospective study, 191 lupus patients, over 18 years of age, whom their diagnosis were confirmed with ACR criteria and presented to Rheumatology clinic of Shariati university hospital between 2009 until 2019 were enrolled.
- Information about clinical manifestations and their Socioeconomic status was collected from the clinical file of the patient's electronic registry system of lupus patients (RHEUMATRY file) and patients standard questionnaire including the level of education (less or more than 12 years), employment and housing status (housing ownership, private or rented house, housing area) and assets.
- Information on SES was analyzed by PCA (principle component analysis) statistical method. PCA is examined through data gathered via questionnaire in which weights are given to each asset and property index (house, vehicles, and household appliances) so that it is possible to divide individuals into different social categories.

Description of patient characteristics

Variables	Medium (mid-quarter range) / number (%)
Gender	Female 169 (88.9%)
Age groups	≤20 37 (19.4%)
	21-30 70 (36.7%)
	31-40 49 (25.7%)
	>40 35 (18.3%)
Marital status	Married 123 (64.4%)
Ethnicity	Persian 76 (41.8%)
	Turk 60 (33%)
	Lor 30 (16.5%)
	Other 16 (8.7%)
Employment at the onset of the disease	Employed 61 (31.9%)
	Retired 2 (1.1%)
	Unemployed 3 (1.6%)
	Housewife 98 (51.3%)
	Student 18 (9.4%)
Head of household employment at the onset of the disease	Employed 165 (90.2%)
	Retired 15 (8.2%)
	Unemployed 2 (1.1%)
	Other 1 (0.5%)
Insurance at the beginning of the disease	Yes 178 (93.2%)
Supplemental insurance at the beginning of the disease	Yes 48 (25.1%)
Place of residence (city/village)	City 170 (89.0%)
Years of education	≤12 116 (60.7%)
	>12 75 (39.3%)
Socio-economic status	Low 66 (34.5%)
	Middle 62 (32.5%)
	High 63 (33%)
Duration of illness	7 (4-10)

Patients' symptoms

Row	Symptoms	Number%
1	Joint	137 (71.7%)
	• Arthritis	110 (57.6%)
	• Arthralgia	27 (14.1%)
2	mucocutaneous	119 (62.3%)
	• Malar Rash	60 (31.4%)
	• Photosensitivity	39 (20.4%)
	• Hair loss	12 (6.3%)
	• Mouth ulcers	39 (20.4%)
	• Discoid Rash	15 (7.8%)
3	Hematologic	89 (46.6%)
	• Leukopenia	42 (22.0%)
	• Thrombocytopenia	37 (19.4%)
	• Lymphopenia	30 (15.7%)
	• Pancytopenia	10 (5.2%)
	• Hemolytic anemia	6 (3.1%)
4	constitutional	82 (42.9%)
	• Fever	31 (16.2%)
	• Fatigue	30 (15.7%)
	• Weight Loss	14 (7.3%)
5	Nephritis	58 (30.4%)
6	Serositis	31 (16.2%)
7	Vascular	12 (6.3%)
8	Reticuloendothelial	11 (5.8%)
9	NPSLE	10 (5.2%)
10	Cutaneous Vasculitis	9 (4.7%)
11	Gastrointestinal	5 (2.6%)
12	Eye	3 (1.6%)

RESULTS

- In this study, 66 (34/5%) patients were low SES, 62 (32/5%) Patients intermediate were SES and 63(33%) patients were high SES.
- There was no statically significant difference between clinical manifestation and different SES groups.
- It was found that the constitutional symptoms and leukopenia are significantly more common in the educated population (>12 years)(P-value <0/050).
- Also, mucocutaneous symptoms, especially malar rash, and joint symptoms are significantly more common in the rural population(P-value < 0/05).

(Status of symptoms between the three socioeconomic levels of high, middle, and low)

Variables	Numbers %			P-value
	High	Middle	Low	
mucocutaneous	36 (57.1%)	36 (58.1%)	37 (58.5%)	>0.05
• Malar Rash	16 (25.4%)	17 (27.1%)	17 (26.9%)	>0.05
• Photosensitivity	11 (17.5%)	10 (16.1%)	18 (28.1%)	>0.05
• Mouth ulcers	10 (15.9%)	11 (17.7%)	15 (23.4%)	>0.05
• Discoid rash	3 (4.7%)	4 (6.3%)	5 (7.7%)	>0.05
• Hair loss	16 (25.4%)	14 (22.6%)	9 (14.1%)	>0.05
Musculoskeletal	45 (71.4%)	42 (65.6%)	49 (75.4%)	>0.05
• Arthritis	37 (58.5%)	33 (51.6%)	40 (61.5%)	>0.05
• Arthralgia	8 (12.5%)	9 (14.0%)	11 (16.9%)	>0.05
Nephritis	30 (47.1%)	17 (26.6%)	21 (32.3%)	>0.05
Serositis	8 (12.5%)	3 (4.7%)	10 (15.4%)	>0.05
Hematologic	28 (44.1%)	29 (45.3%)	32 (49.3%)	>0.05
• Hemolytic anemia	3 (4.7%)	1 (1.6%)	2 (3.1%)	>0.05
• Leukopenia	20 (31.2%)	11 (17.1%)	12 (18.3%)	>0.05
• Lymphopenia	6 (9.4%)	5 (7.7%)	9 (13.8%)	>0.05
• Thrombocytopenia	10 (15.9%)	16 (24.8%)	11 (16.9%)	>0.05
• Pancytopenia	5 (7.7%)	4 (6.2%)	2 (3.1%)	>0.05
Reticuloendothelial	4 (6.2%)	2 (3.1%)	5 (7.7%)	>0.05
Constitutional	28 (44.1%)	29 (45.3%)	30 (46.2%)	>0.05
• Fever	13 (20.3%)	13 (20.3%)	15 (23.1%)	>0.05
• Fatigue	10 (15.9%)	9 (14.0%)	6 (9.1%)	>0.05
• Weight Loss	5 (7.7%)	6 (9.4%)	3 (4.7%)	>0.05
Vascular	4 (6.2%)	5 (7.7%)	3 (4.7%)	>0.05
NPSLE	1 (1.6%)	4 (6.2%)	5 (7.7%)	>0.05
Gastrointestinal	2 (3.1%)	2 (3.1%)	1 (1.5%)	>0.05
Vasculitis	2 (3.1%)	3 (4.7%)	4 (6.2%)	>0.05
Eye	1 (1.6%)	1 (1.6%)	1 (1.5%)	>0.05

CONCLUSION

According to the results of the study, the clinical symptoms of the disease at the time of diagnosis are not related to the socio-economic level. Therefore, it can be concluded that in clinical symptoms, the issue of genetics and race is more important.

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