

Clinical Profile of Systemic Lupus Erythematosus in Tertiary Care Centre

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Abstract: Prevalence of SLE is 3.2/100, 000 population in India. SLE is more common in females, especially in childbearing age as compared to males with a ratio ranging from 7:1 to 15:15 due to role of estrogen. Very few studies conducted in Maharashtra regarding study of clinical profile of systemic lupus erythematosus in tertiary care center. So we are interested to find out the various risk factors of SLE, clinical profile, incidence of various SLE manifestations and complications. We are interested to study association and impact of risk factors. This disease is studied extensively in western world (over 65000 articles are there in Pub med) but not studied so well in Maharashtra. Regional variation has been observed regarding renal involvement in SLE patients ranging from 20% to 73%. Studies conducted from the northern 4 and western India 7 has shown higher prevalence of renal involvement as compared with south India. 8, 2 **Methods:** It is a prospective observational study carried out in tertiary care centre from October 2019 to December 2021. **Conclusion:** The majority of research participants were between the ages of 12 and 30. Majority of study participants were Females. Most common Hematological manifestations was Anaemia. Most common musculoskeletal manifestation was Polyarthrititis. Photosensitivity was the most common Mucocutaneous manifestation. Most common neurological features found in patients were depression. Pericardial effusion was most common cardiovascular manifestations. Proteinuria was most common Renal features. Ascites was common gastrointestinal manifestation. In cases of renal failure, the majority of fatalities was caused by sepsis.

Keywords: SLE, SLICC, ANA, ANTI dsDNA

1. Introduction

SLE (systemic lupus erythematosus) is an autoimmune illness in which tissue-binding autoantibodies and immune complexes cause damage to organs and tissues. Disease can manifest as mild to severe as rash, arthritis to critical renal failure and central nervous system involvement².

Hippocrates described cutaneous ulcerations calling them herpes esthiomenos; it has been proposed that SLE was included under this term. However, the first time the term lupus was used in the English literature was in the X century by Hebernus of Tours in his Miracles of St. Martin; he described the healing of Eraclius, bishop of Liège who was suffering from lupus, a serious disease.

It seems that in ancient times, the disease was characterized by serious cutaneous affections while in modern times, more parameters and criteria are added to the list. Kaposi in 1872 was the first to describe systemic nature of lupus. The relapsing/remitting course of lupus was first given by Osler between 1895 and 1904.

A review study conducted in Asia has shown the prevalence rate of disease from 30 to 50/100, 000 population³ which was found very low in rural India 3.2/100, 000 population. 4 SLE is more common in females of childbearing age group due to high levels of estrogen as compared to males with a ratio ranging from 7:1 to 15:1.5 Women exposed to estrogen containing oral contraceptives or hormone replacement has an increased risk of developing SLE. Estradiol binds to receptors on T

and B lymphocytes increasing activation and survival of those cells, especially autoreactive subsets, thus favouring prolonged immune responses.

Autoantibodies in excess of 100 were discovered in SLE patients. Antinuclear antibody (ANA), anti-dsDNA antibody, and anti-extractable nuclear antigen (ENA) antibody are all auto antibodies detected in SLE patients. Antibodies against anti-ENA include anti-smith (Sm), anti-ribonucleoprotein (RNP), anti-Ro, and anti-La.³

Chloroquine and hydroxychloroquine, in conjunction with other immunomodulatory medications, are the mainstays of SLE therapy. These medications' immunomodulatory and anti-inflammatory actions have been linked to a variety of positive outcomes in patients with SLE, including increased survival and remission rates, as well as decreased disease activity and the accumulation of new illness-related damage.⁶

Regional variation has been observed regarding renal involvement in SLE patients ranging from 20% to 73%. Study conducted from the northern 4 and western India 7 has shown high prevalence of renal involvement as compare with south India.^{2,8}

2. Materials and Methods

Study design: Prospective Observational Study.

Study setting: Diagnosed patients of SLE coming to outpatient as well as in patient wards of tertiary care hospital.

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Study duration: 2 years (from October 2019 to December 2021)

Study population: The study population included all the cases with SLE

Inclusion Criteria:

- Patients of 12 years or more age diagnosed of Systemic lupus erythematosus as per EULAR/ACR criteria 2019 coming to medicine OPD or wards of tertiary care centre taken for study.
- Those who have given consent for the study are taken.

Exclusion Criteria:

- Patients of paediatrics and obstetric department.
- Those who do not give consent for inclusion in study.

After obtaining informed verbal consent from all patients with the definitive diagnosis of SLE admitted to Medicine ward of tertiary care centre such cases were included in the study.

The data were entered in Microsoft Excel and data analysis was done by using SPSS demo version no 21 for windows. The analysis was performed by using percentages in frequency tables and correlation. $p < 0.05$ was considered as level of significance using the Chi-square test.

3.Observations

The present prospective study was done among 50 SLE cases admitted to tertiary care centre during study period.

Table 1: Age at inclusion of study

Age	No. Of patients (N)	Percentage (%)
12-30	18	36%
31-40	10	20%
41- 50	09	18%
51-60	8	16%
>60	5	10%
Total	50	50 (100%)

Youngest female patient of 13 years age was diagnosed 1 year back. 36% patients were below 30 years of age.

Table 2: Mucocutaneous manifestations

Mucocutaneous manifestations	Frequency (N)	Percentage (%)
Photosensitivity	38	76%
Alopecia	32	64%
Malar rash	24	48%
Oral ulcers	20	40%
Vasculitic rash	10	20%
Raynaud's phenomenon	8	16%

Photosensitivity was observed in maximum e.g. 38 (76%), followed by Alopecia 32 (64%), malar rash 24 (48%), Oral ulcers 20 (40%), Vasculitic rash found in 10 cases (20%) and Raynauds phenomenon 8 (16%).

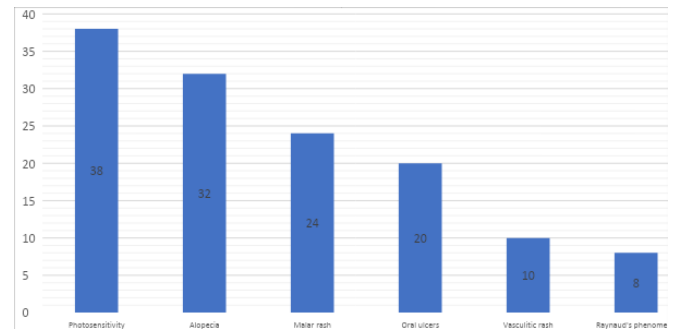


Figure 1: Mucocutaneous manifestations

Table 3: Distribution of cases according to musculoskeletal features

Musculoskeletal features	Frequency (N)	Percentage (%)
Polyarthritis	39	78%
Oligoarthritis	02	4%
Monoarthritis	01	2%
Myalgia	22	44%

The above table shows majority of patients presented with Polyarthritis e.g. 39 (78%), followed by Oligoarthritis 02 (4%), Monoarthritis 01 (2%) and Myalgia found in 22 cases.

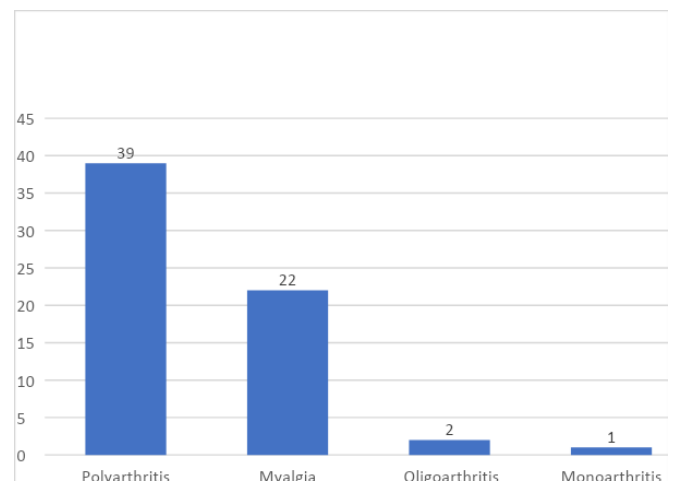


Figure 2: Distribution of cases according to musculoskeletal features (N=50)

Table 4: Distribution of cases according to Neurological features

Neurological features	Frequency	Percentage
Depression	06	12%
Seizures	03	6%
Peripheral Neuropathy	02	4%
CVA	02	4%

Majority of neurological features found in patients was Depression 06 (12%) followed by Seizures 3 (6%), peripheral neuropathy 02 (4%), and CVA was found in 2 cases. Among 3 patients of seizures 2 were having focal seizures and 1 was having generalized seizures.

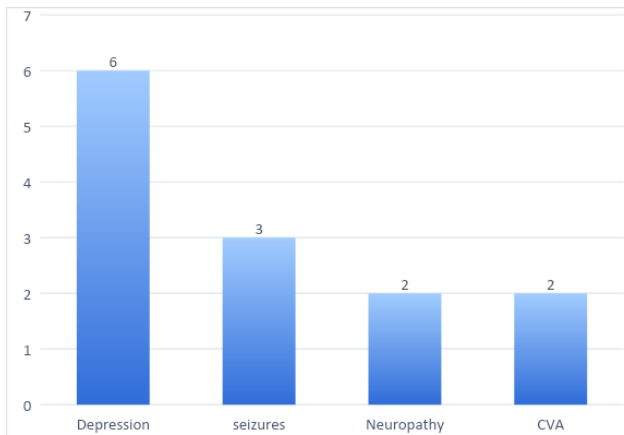


Figure 3: Distribution of cases according to Neurological features

Table 5: Cardiovascular manifestation

Cardiovascular manifestation	Frequency (N)	Percentage (%)
Pericardial effusion	02	4%
Valvular involvement	01	2%

2 cases presented with Pericardial effusion and 1 case was found with Valvular involvement that is mitral regurgitation.

Table 6: Hematological abnormalities observed

Hematological manifestation	No. of patients (N)	Percentage (%)
Hb < 10%	28	56%
TLC < 4000	12	24%
Platelets < 1 lakh	10	20%
Hb < 10 and TLC < 4000	8	16%
Hb < 10 and platelets < 1 lakh	9	18%
TLC < 4000 and platelets < 1 lakh	3	6%
Hb < 10% and TLC < 4000 and platelets < 1 lakh	4	8%

Anemia was observed in 56% cases followed by leucopenia 24% and thrombocytopenia 20%. Pancytopenia was observed in 4 patients out of 50 - 8% of cases.

Table 7: Distribution of study cases according to Renal manifestations

Renal manifestation	Frequency (N)	Percentage (%)
Proteinuria	29	58%
urinary sediment	10	20%
Creatinine > 1.5 to 3	10	20%
Creatinine 3.1 to 5	8	16%
Creatinine > 5	10	20%

28 patients had elevated creatinine at the time of presentation and 10 of them were on dialysis.

Table 8: Gastrointestinal manifestations

Gastrointestinal manifestation	Frequency (N)	Percentage (%)
Ascites	10	20%
Hepatomegaly	07	14%
Splenomegaly	05	10%
Pancreatitis	01	2%

10 cases presented with Ascites (20%) followed by Hepatomegaly 7 cases (14%) Splenomegaly in 5 cases (10%) and Pancreatitis in 1 case (2%).

Table 9: Complications leading to death

Total no. of deaths (15)	Complications observed
Renal failure with septicemia	5
Pneumonitis	3
Renal failure only	4
Diabetes and renal failure	2
CVA	1

It shows that majority patients requiring hemodialysis died due to renal failure (9) followed by septicemia. Renal failure was mostly chronic renal failure. CVA was ischemic type.

4. Conclusions

- The majority of research participants were between the ages of 12 and 30, while the majority of patients were diagnosed between the ages of 12 and 30.
- Majority of study participants were Females.
- Most common Hematological manifestations was Anaemia.
- Most common musculoskeletal manifestation was Polyarthrits.
- Photosensitivity was the most common Mucocutaneous manifestation.
- Most common neurological features found in patients was depression.
- Pericardial effusion was most common cardiovascular manifestations.
- Proteinuria was most common Renal features.
- Ascites was common gastrointestinal manifestation.
- In cases of renal failure, the majority of fatalities were caused by sepsis.

5. Discussion

The present prospective study was done among 50 SLE cases admitted in medicine wards and visited on opd basis to tertiary care centre during study period.

In current study maximum patients 18 (36%) were in the age group 12-30 years followed by 10 patients in the age group 31-40 years, 9 patients in the age group 41-50 years, 8 patients in age group 51-60 years and 5 patients were above the age of 60 years. Study conducted by Saigal R et al (2012) 19 reported the result similar to our study. 60 patients were studied. The mean age at onset of disease was 28 years (range 13 - 56 years). Study conducted by Kishor N et al (2016) 9 found that the most of the patients were of the age group 15-30 years. In present study maximum patients had onset of disease before 30 years of age 58% and 82% had onset before age of 40 years. Youngest female patient of 13 years was diagnosed 1 year back that is at the age of 12 years. Out of 5 patients which presented above 60 years of age 4 patients were diagnosed before 60 years of age only 1 patient was presented for the first time after 60 years of age. Hamijoyo L et al (2019) 12 revealed that the mean age at diagnosis was 27.7 ± 9.4 years. Similar result observed by Ahmed TA et al

(2002)15 found that the majority patients in age range 5-30 years (mean 21.6 years).

In present study 90% were females which prove that SLE is a disease of female. Statistically female affection is significantly observed due to hormonal effects. 5 patients were males. Similar results were found in other studies, Kishor N et al (2016) 9 found that the majority (85%) were females, Agrawal et al (2013)11 found that out of 87 SLE patients nearly, 98% patients were females. Hamijoyo L et al (2019) 12 revealed that the 813 patients, 95.6% were females. Albirdisi MR et al (2020)13 reported out of 112 patients, 103 (92%) were females and 9 (8%) were males. Study conducted by Saigal R et al (2012)19 reported the result similar to our study. 60 patients were studied over a one-year period, of which 55 were females and 5 were males. Male to female ratio was 1: 11. Similar study by Batool S et al (2016) 14 revealed that the out of 61 patients, 49 (80.3%) were females and 12 (19.7%) males, showing a female to male ratio of 4:1. Font J et al (1993) 16 observed that the A total 266 (89%) females and 34 (11%) males. Shamim R et al (2020) 17 found that there were 91.3% females.

Photosensitivity was observed in maximum 38 (76%) patients followed by Alopecia 32 (64%), Malar rash 24 (48%), Oral ulcers 20 (40%), Vasculitic rash 10 (20%), Raynauds phenomenon 8 (16%). Similar results were found in the study conducted by Agrawal et al (2013)11 found that common features present in these patients were mucocutaneous (83.9%), Malar rash was the most common clinical feature presented in 71.3% patients followed by photosensitivity (63.2%) and oral ulcers (42.5%). Another study conducted by Albirdisi MR et al (2020)13 reported that the 112 patients, Skin rash (69.6%), photosensitivity (61.6%), mucosal ulcerations (45.9%). Saigal R et al (2012)19 also found photosensitivity in maximum that is 45 patients.

In current study majority of patients presented with polyarthritis e.g. 39 (78%), followed by oligoarthritis 02 (4%), monoarthritis 01 (2%) and Myalgia founded in 22 cases. Similar result observed in the study conducted by Vasdev V et al (2017) 18 that out of total 226 SLE patients records were analysed the most common clinical manifestations at onset were polyarthralgia (66.2%) and myalgias (52.1%). Another study conducted by Ahmed TA et al (2002)15 found that the most common musculoskeletal manifestations was arthralgias/arthritis (98%). Kosaraju K et al (2010)10 Conducted study in South Indian population observed arthritis was the most common (64.58%).

In present study most common neurological feature found in patients was depression 6 (12%) followed by Seizures 3 (6%) of which two were having focal seizures and one was having generalized seizures, followed by Neuropathy 02 (4%) and CVA was found in 2 cases. Depression resulting from both the physical effect of autoimmunity on the nervous system and the suffering due to pain and disability.

Similar results observed in the study conducted by Saigal R et al (2012)19. Neuropsychiatric abnormalities were found in 8 patients (13.3%), seizures were seen in 3 patients (5%), 2 patients (3.3%) had peripheral neuropathy, 2 (3.3%) had psychosis and 2 (3.3%) suffered from ischaemic stroke.

In our study 2 cases were presented with pericardial effusion and 1 case was found with mitral regurgitation. Similar result found in the study conducted by Saigal R et al (2012)19 found that the Cardiac involvement was seen in 4 patients (6.7%). All 4 had pericardial effusion without any sign of tamponade. Two patients had both mitral and aortic regurgitation, whereas one patient had only non-rheumatic mitral regurgitation on 2D-Echo. No patient had significant ECG changes.

In our study most of study cases were presented with Anaemia 28 (56%) followed by Leucopenia 12 (24%) and Thrombocytopenia contributing 10 (20%). Anemia with leukopenia was found in 8 patients and anemia with thrombocytopenia was found in 3 patients. 4 patients were found to have pancytopenia. Similar result observed in the study conducted by Saigal R et al (2012)19. Anemia (Hb<10gm%) was found in 32 patients (53.33%). Leucopenia (TLC < 4, 000/cu mm) in 26 (43.3%) and thrombocytopenia (< 1, 00, 000/cu mm) in 20 patients (33.3%) Another study conducted by Shamim R et al (2020) 17 found that the presentation patients had hematological involvement 69.6%. Vasdev V et al (2017) 18 observed that the most common hematological manifestation was Anaemia (72.2%).

In present study renal manifestations 29 cases presented with proteinuria (58%) followed by urinary sediment was found in 10 cases (20%) and Elevated serum creatinine was found in 28 cases (56%). 10 patients were on hemodialysis. Similar result was found in the study Shamim R et al (2020) 17 found that the renal involvement 21.6%. In study conducted by Saigal R et al (2012)19 renal involvement was noted in 34 patients (56.7%). Proteinuria (> 0.2 gm/24 hours) was seen in 33 patients (55%). Abnormal urinary sediment was noted in 18 patients and elevated serum creatinine (> 1.5 mg/dl) was noted in eight. Renal biopsy was performed in 20 patients having indication for biopsy. Another study conducted by Albirdisi MR et al (2020)13 reported that the 97 (86.6%) out of 112 patients had recorded first visit 24hour urine protein level, out of those only 26 (23.2) patients presented with significant proteinuria of more than 0.5grams per day. 44 (39.2%) have undergone kidney biopsy. Class IV and III lupus nephritis are the most common reported biopsy results (43.18% and 27.28% respectively). During the study period, three patients (2.7%) developed end-stage kidney disease requiring dialysis and five (4.5%) had renal transplant.

Out of 15 deaths 5 deaths were due to septicemia with renal failure followed by deaths due to renal failure alone followed by pneumonitis (4) followed by diabetes (2). 1 patient died due to stroke. Sepsis was the most common cause of death. The patients who died were on

immunosuppressive therapy. In study conducted by Saigal R et al (2012) 19 out of 60 patients, 8 patients (13.3%) died.

Among 8 deaths, sepsis seen in 4 patients (50%) was the most common cause of death. In study conducted by Vasdev V et al (2017) 18. During the follow-up period, eight individuals died, the most prevalent reason being sepsis with underlying renal dysfunction.

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