

CLINICAL PROFILE OF SYSTEMIC LUPUS ERYTHEMATOSUS (SLE) AND SPECTRUM OF ORGAN INVOLVEMENT: AN OBSERVATIONAL, CROSS-SECTIONAL, HOSPITAL BASED, SINGLE CENTER STUDYYasmeen Hynniewta^{*1}, Alakes Kumar Kole² and Anirban Jana³¹Senior Resident, North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Shillong.²Associate Professor, Internal Medicine, Nilratan Sircar Medical College and Hospital, Kolkata.³Assistant Professor, Internal Medicine, Nilratan Sircar Medical College and Hospital.***Corresponding Author: Yasmeen Hynniewta**

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ABSTRACT

Background: Systemic Lupus Erythematosus(SLE), an autoimmune disorder affecting various organs and tissues. This observational, cross-sectional, hospital based, single center study undertaken in Nilratan Sircar Medical College and Hospital, Kolkata, was aimed to assess the clinical profile of SLE and spectrum of organ involvement. **Materials and Methods:** Between December 2015 to June 2017, 60 patients who were diagnosed cases of SLE according to Systemic Lupus Collaborating Clinics (SLIC) Criteria attending either outpatient or admitted at the medicine department of Nilratan Sircar Medical College and Hospital, Kolkata were included in the study. A detailed history, a thorough laboratory investigation and clinical examination in respect of different organ involvement was evaluated for each visit. **Result:** In this study, mean age and median of study population was 23.75 and 23 years. Only 3 patients were male whereas 57 were females, with female to male ratio of 5:95. Around 88.3% presented with constitutional symptoms, with fever. Musculoskeletal symptoms were present in 41.66%. Renal system involvement was seen in 23.3% patients of which, 31.7% patients had shortness of breath at presentation and 30% had associated edema. **Conclusion:** The study findings showed significantly higher number of cases in females of child bearing age with constitutional symptoms and musculoskeletal involvement, followed by mucocutaneous and renal involvement.

KEYWORDS: Clinical profile, Musculoskeletal symptoms, Systemic Lupus Erythematosus.**INTRODUCTION**

Systemic Lupus Erythematosus (SLE) is the prototypic autoimmune disorder with multisystemic involvement.^[1]

It has a broad spectrum of clinical manifestations encompassing various organs and tissues. The disease starts with a preclinical phase which is characterized by various auto-antibodies and it proceeds with a more disease-specific clinically overt autoimmunity phase.^[2]

Women are affected up to 12 times more frequently than men. About 65% of patients with SLE have disease onset between the ages of 16 and 55, 20% present before the age of 16 and 15% after the age of 55 years. Genetic, epigenetic, environmental, and hormonal factors have been implicated in the pathogenesis of SLE.^[3]

Production of autoantigens during apoptosis, decreased disposal, deregulated handling, and presentation, is important for initiation of the autoimmune response. Clinical features of systemic lupus erythematosus have been described from different geographical regions in the world, with some clinical differences among different racial groups. An Indian study of 100 patients showed

that prolonged fever was the commonest presenting symptom.^[4]

Other presenting symptoms with decreased frequency were arthralgia, haemolytic anaemia, ITP, malar rash, GTCS, anasarca, splenomegaly, lymphadenopathy, hepatomegaly and goiter. UK studies show that in 85% of patients, the first definitive lupus feature was musculoskeletal and/or cutaneous.^[5]

In view of this, this observational, cross-sectional, hospital based, single center study undertaken in Nilratan Sircar Medical College and Hospital, Kolkata was aimed to assess the clinical profile of systemic lupus erythematosus (SLE) and spectrum of organ involvement.

MATERIALS AND METHODS

Between December 2015 to June 2017, this observational, cross-sectional, hospital based, single center study enrolled 60 patients who were diagnosed cases of SLE according to Systemic Lupus Collaborating Clinics (SLIC) Criteria attending either outpatient or

admitted at the medicine department of Nilratan Sircar Medical College and Hospital, Kolkata. Another inclusion criteria was age of cases should be more than 12 years. Exclusion criteria included (a) Patients with history of Chronic obstructive pulmonary disease (COPD), past h/o pulmonary tuberculosis or other airway diseases, (b) Patients with chronic liver disease or End stage renal disease(on RRT), (c) Patients with diagnosed structural and anatomical abnormalities of genitourinary tract, (d) Patients with diabetes mellitus and (e) Patients with HIV infection.

The SLE patients diagnosed according to the SLICC criteria presenting to the hospital (both outpatient and admitted cases) were included in the study after receiving proper consent. A detailed history of clinical features, treatment, disease duration, history of hospitalizations if any taken. A thorough clinical examination in respect of different organ involvement was evaluated for each visit.

The following laboratory investigations like Complete hemogram, Erythrocyte sedimentation rate, Slide for Malarial parasite/ Malarial parasite dual antigen, Dengue serology, Serum urea and creatinine, Liver function tests, Urine routine and microscopy examination, Urine culture and sensitivity, Chest x ray (pa view), Ultrasound abdomen and HIV status were included in this study.

The study protocol was performed in accordance with the principle of the declaration of Helsinki and after approval by the Institutional ethical review board.

Statistical analysis: The data was entered; tabulated and statistical analysis was performed by using Statistical

Package for the Social Sciences (SPSS 24.0) and Graph Pad Prism Version 5. Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Two-sample t-tests for a difference in mean involved independent samples or unpaired samples. Paired t-tests were a form of blocking and had greater power than unpaired tests. One-way analysis of variance (one-way ANOVA) was a technique used to compare means of three or more samples for numerical data (using the F distribution). A chi-squared test (χ^2 test) was any statistical hypothesis test wherein the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson's chi-squared test. Unpaired proportions were compared by Chi-square test or Fischer's exact test, as appropriate. A value of $p < 0.05$ was considered significant.

RESULTS

During a period of nineteen months from December 2015 to June 2017, 60 patients were enrolled in our study. Their mean age and median was 23.75 and 23.00 years (range, 13–48 years). Only 3 (5%) patients were male whereas 57 (95%) were females. The majority of patients (88%) were females with a female to male ratio of 5:95.

In our study, more than half of the patients were young females of reproductive age group, maximum being in the age group of 21-30 years (51.7%) with the mean age of 23.7 ± 7.03 years, and 95% of them were females, which was also corroborative with a study done in 2016 at Lahore.

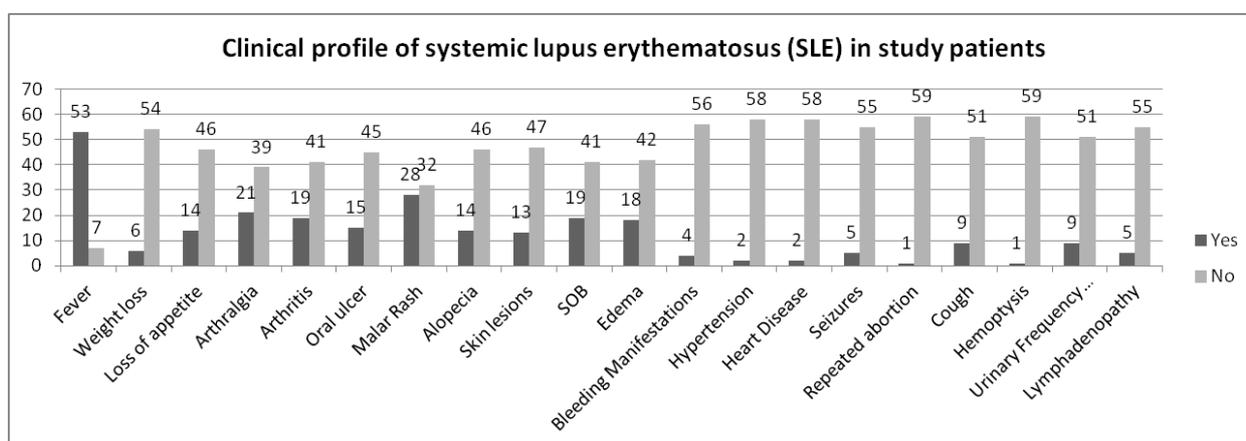


Figure 1: Tabulated view of clinical profile of systemic lupus erythematosus (SLE) in study patients.



Figure 2: Figure showing arthritis of right hand.

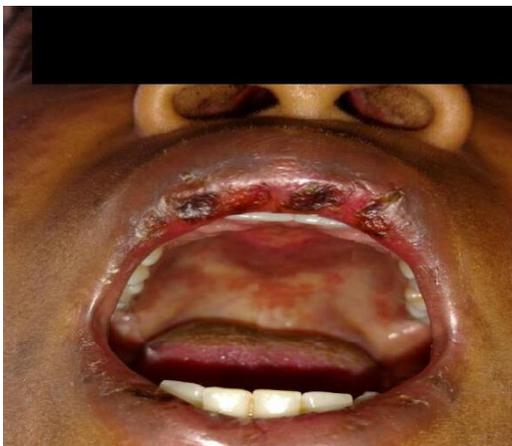


Figure 3: Figure showing patient with oral ulcer.



Figure 4: Figure showing Patient presenting with malar rashes.



Figure 5: Figure showing alopecia in one of the patients.

Table I: Distribution of organ involvement in the study patients.

Organ	Frequency	Percentage
Constitutional	53	88.30
Musculoskeletal	25	41.66
Mucocutaneous	20	33.33
Renal	14	23.33
Hematological	11	18.33
Pulmonary	9	15.00
Serositis	7	11.67
Neurological	4	6.67
Cardiovascular	3	5.00
Gastrointestinal	2	3.30

In our study among the different organ systems, 88.3% presented with constitutional symptoms, with fever, present in most of the patients 53.3 % of which was attributed to increased disease activity, while 25% was due to infections. In a previous retrospective analysis of 160 hospitalized patients with SLE, Stahl identified 83 febrile episodes in 63 patients. 33 Of these, 60% were attributed to active SLE, 23% to infections, and 17% to miscellaneous causes.

Musculoskeletal symptoms were present in 41.66%, with arthralgia contributing 35% and 31.7% presenting with arthritis. Mucocutaneous symptoms contributed 33.33%, of which malar rashes were seen in 46.7% of patients, oral ulcers seen in 25% of them, while, 23.3% patients had alopecia and 21.7 % had other skin lesions. Renal system involvement was seen in 23.3% patients of which, 31.7% patients had shortness of breath at presentation and 30% had associated edema. Hematological manifestations were present in about 18.33% with anemia (Hb: 9.5 ± 1.78), thrombocytopenia in 11.7%, leukocytosis and leucopenia 8.3 % each respectively. These symptoms were followed by serositis in the form of pleural effusion, pericardial effusion and ascites contributing about 11.67 %. Only 8.3% had episodes of seizures, 6.7% patients in our study presented with bleeding manifestations and only 3.3% had hypertension and heart disease respectively.

DISCUSSION

SLE is the prototypic autoimmune disease characterized by multisystem involvement and the production of an array of antibodies which is most commonly seen in females of childbearing age group (between puberty to menopause). In our study of SLE patients, we found that the disease was more common in female patients especially during the child bearing age group.^[6]

Also, our study showed higher frequency of immunological, musculoskeletal, renal & hematological involvement in SLE patients. Involvement of mucocutaneous, neurological, cardiovascular and respiratory system was found to be less common. Similar results were seen in study by Singh where they studied 305 SLE patients out of which around 85% patients were females.

Most common organ system involvement in our study was mucocutaneous (92%). Similar results were observed in study by Kole *et al.* where close to 90% patients has mucocutaneous involvement.

Present study underscores the importance of detail clinical examination and focused investigation in patients suspected to have SLE, particularly in female patients of child bearing age (20-40 years age group) which is in complete agreement with the recently done research work by Agrawal.^[9]

CONCLUSION

In this study, we had significantly higher number of cases in females of child bearing age with constitutional symptoms and musculoskeletal involvement, followed by mucocutaneous and renal involvement, findings similar to others studies. Among the patients one third had disease flare due to various organ involvement without any evidence of infection.

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