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CONFERENCE PROCEEDING

Clinical and Immunological Profile of Patients with Systemic Lupus Erythematous presenting to AIIMS Patna

Abhiraj Paul[1], Anjani Kumar[1]

[1]Department of Medicine, AIIMS Patna, Bihar, India

ABSTRACT

Introduction-SLE is a disorder which shows marked geographical variation in its clinical manifestations, immunological markers and pathological findings. Owing to the differential expression of both clinical and histopathological manifestations of SLE with respect to geography, it is important to have data about the same from different regions. There is paucity of data from the Eastern part of Bharat (India). This study is a small attempt to address the issue.

Methods- This is a hospital based observational, cross-sectional study done on patients of SLE, diagnosed by SLICC criteria and presenting to AIIMS Patna. The primary objective of the study was to find out the proportions of different clinical manifestations of SLE in the study population. Secondary objective was to find out the pattern of antibody profile in these patients.

Results- The median age of the study participants was 27 (range 16–53). Majority of the study participants were female (97.7%). Renal involvement (88.8%) was the most common manifestastion, followed by musculoskeletal manifestation (71.1%),fever(66.7%), mucocutaneous manifeatation(62.2%),malar rash (53.3%), alopecia (55.6%),serositis (48.9%), discoid rash (15.6%) and neurological manifestation (17.7%).

ANA screening result was available for 40 patients. Speckled and homogeneous patterns were seen in 52.5% and 50.0% respectively. Out of the 41 patients who underwent test for ANA profile, anti-SmD1, anti-histone and anti-dsDNA were the most frequent antibodies with frequencies being 70.7%, 68.3%, 65.8% respectively. anti-U1snRNP (56.1%), anti-Ku (56.1%), anti-Ro 60 (51.2)%, and anti-Nucleosome antibody (48.8%)were the other commonly detected antibodies.

Conclusion– Renal involvement was the commonest clinical manifestation while anti-SmD1 was the commonest extractable nuclear antigen antibody in the study population.

Keywords: Immunological markers, Renal involvement

INTRODUCTION

SLE is a disorder which shows marked geographical variation in its clinical manifestations as well as immunological markers. Many studies have been done across the globe confirming the same. However, there is paucity of datafrom Bharat, especially its eastern part. Knowledge of the common manifestations of the disease in the region where they are practicing is important for clinicians so that they can suspect the condition in appropriate patients. It gives the local clinicians an insight into the prevalences of different clinical manifestations and adds to the predictive value of each manifestation in diagnosing a case of SLE and further prognostication and management.

This study was carried out at the All India Institute of Medical Sciences (AIIMS), Patna which is a large tertiary teaching hospital in the state of Bihar in Eastern Bharat. It receives referred patients as well as those who present themselves to the outpatient clinic or the emergency department. Though this is a hospital based study we believe it gives a reasonable local representation of patients with SLE.

MATERIALS AND METHODS

Aims and objectives- To find out proportion of different clinical manifestations and antibody profile of SLE patients presenting in AIIMS Patna.

Corresponding email: abhirajpaul2015@gmail.com

Study design- Hospital Based Observational, cross-sectional Study.

Study setting- The study has been conducted in in the In-patient department (IPD) of General Medicine of AIIMS Patna.

Study population- Adult patients above the age of 18 diagnosed with SLE by SLICC criteria who were admitted at AIIMS Patna.

Study duration- The study period was from July, 2023 to December 2024.

Inclusion criteria-

(1) Patient aged 16 to 60 years diagnosed as a case of SLE by SLICC Criteria.

(2) Presenting in AIIMS Patna.

Exclusion criteria

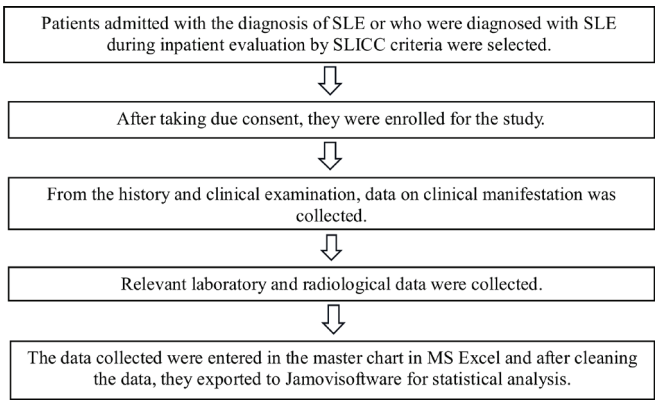
(1) Patient who did not give consent to be included in the study

Sample size calculation- The number of persons with SLE getting admitted to AIIMS Patna Medicine ward was found to be 50 per year from the admission register of these wards.

Using Taro Yamane formula, $n=N/1+Ne^2$, where e is taken to be 0.05, N is presumed to be 50 (n= sample size, N= population size, e= margin of error), the sample size was estimated as 45.

Sampling technique- Non probability convenience sampling. Patients admitted in the IPD of AIIMS Patna and meeting the suitable criteria were included.

Flow of the Study-



RESULTS

A total of 45 patients were included in the study. The median age of the study participants was 27 (range 16 – 53) (Table 1). Renal involvement (88.8%) was the most common clinical manifestastion (Figure 1). Thrombocytopenia was found to be present in 14 (31%) out of 45 cases. (Figure 2) Combined small and large joint involvement was the most common form of joint involvement involving 42.2% participants (Table 2). Isolated proteinuria (51.1%) was the commonest renal manifestation (Table 3). Bilateral pleural effusion with ascites (22.2%) was the commonest form of serosal involvement (Table 4). Neurological involvement was less common with 11.1% participants presenting with seizures as the most common neurological manifestation(Table 5). Among 40 patients undergoing ANA Screening, speckled and homogeneous pattern were found to be the most frequent with frequencies being 52.5% and 50.0%, respectively (Figure 3). Among the 41 patients who underwent test for ANA profile, anti-SmD1 (70.7%), anti-histone (63.8%) and anti dsDNA (65.8%) were found to be the most frequent antibodies (Figure 4).

Table 1: Distribution of age.

	Age
N	45
Mean	26.8
Median	27
Standard deviation	8.82
Minimum	16
Maximum	53

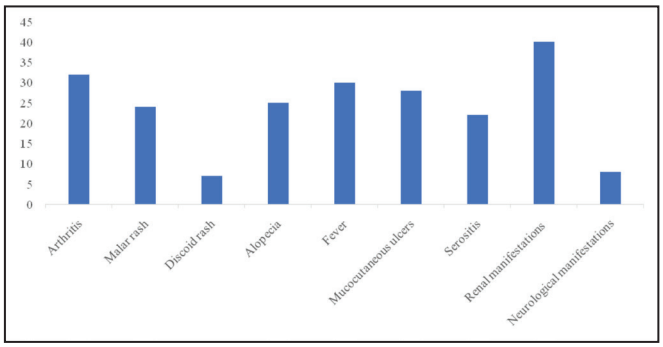


Figure 1: Frequencies of different clinical manifestations.

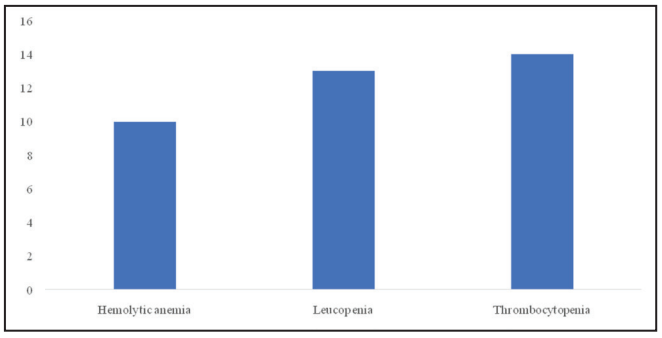


Figure 2: Frequencies of hematological manifestations.

Table 2: Frequencies of arthritis distribution.

Arthritis distribution	Counts	% of Total	Cumulative %
No joint involvement	13	28.9 %	28.9 %
Small joint involvement	8	17.8 %	46.7 %
Both small & large joint involvement	19	42.2 %	88.9 %
Large joint involvement	5	11.1 %	100.0 %

Table 3: Frequencies of renal manifestations distribution.

Renal manifestations distribution	Counts	% of Total	Cumulative %
No renal manifestation	5	11.1 %	11.1 %
Isolated proteinuria	23	51.1 %	62.2 %
Active urinary sediments	14	31.1 %	93.3 %
AKI with proteinuria	1	2.2 %	95.6 %
CKD with active urinary sediments	2	4.4 %	100.0 %

Table 4: Frequencies of serositis distribution.

Serositis distribution	Counts	% of Total	Cumulative %
No serositis	23	51.1 %	51.1 %
Bilateral pleural effusion	5	11.1 %	62.2 %
Bilateral pleural effusion with ascites	10	22.2 %	84.4 %
Ascites	3	6.7 %	91.1 %
Pericardial effusion	4	8.9 %	100.0 %

Table 5: Frequencies of neurological manifestations

Neurological manifestations	Counts	% of Total	Cumulative %
No neurological involvement	37	82.2 %	82.2 %
Seizures	4	8.9 %	91.1 %
Seizures and psychosis	1	2.2 %	93.3 %
Psychosis	2	4.4 %	97.8 %
Transverse myelitis	1	2.2 %	100.0 %

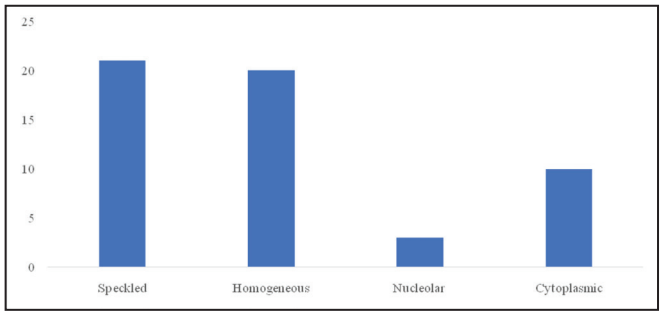


Figure 3: ANA screening pattern.

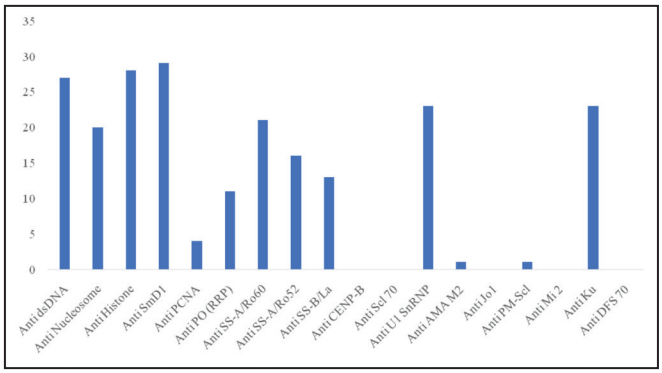


Figure 4: Antibodies in ANA profile.

DISCUSSION

The mean age of presentation in our study was 26.8 with standard deviation of 8.82 years, which indicates SLE involvement in younger age group. This finding is comparable to a previous Bhartiya study showing the mean Age to be 23.3 years.[1]

Renal involvement was found to be the most common clinical manifestation in this study with 40 out of 45 (88.9%) participants showing renal involvement. A study from a Caribbean island found the prevalence as 78%.[2] Frequency of renal involvement is found to be lower in European and American studies, with 39% and 34% prevalence respectively.[3,4]

Joint manifestation has been found in 32 out of 45 patients (71.1%) in this study. An American study also noteda comparable frequency of 75%.[4] Another European study found the prevalence to be 83%.[3]

Constitutional symptom in the form of fever was found in 30 (66.7%) out of 45 patients in this study. An American study reported this symptom in 75% of the patients.[4]A Chennai based Bhartiya study reported fever in 81%.[5]

Malar rash was found in 24 (53.3%) out of 45 patients with a prevalence of 53.3%. This is comparable to other studies from Europe(3) and Africa.(6) Discoid rash was found to be 15.6%.This is similar to a Chinese study showing a prevalence of 14.7%.[7]

Alopecia was found to be in 25 out of 45 patients making a prevalence of 55.6%. Nearly half of the participants in a Middle Eastern study reported having hair loss, indicating a similar pattern.[8]

Mucocutaneous ulcer was noted in 28 participants (62.2%). A study from Uganda found a prevalence of 41.1%.[(6)]while another study from Nigeria reported a prevalence of 42.3%.[(9)]

Serositis was found in 22 patients with a prevalence of 48.9% with pleural effusion in 33%, ascites in 29% and pericardial effusion in 8%. A study conducted in Tunisia reported a comparable prevalence of serositis, with 45% of individuals having serosal involvement and 29% having pleural involvement. The same study reported pericardial effusion in 16% of the patients.[10] A Senegalese study reported pericardial effusion in 43%.[11]

Neurological involvement was found in 8 patients with a prevalence of 17.7%. Seizures were reported in 5 patients, psychosis in 3 patients and transverse myelitis in 1 patient. A study conducted in south Bharat reported neurological involvement in 13.3%.[12] A South African study reported neurological involvement in 13% .[13]

Hematological manifestations were seen in 26 participants (57.7%) in this study.Hemolytic anemia was seen in 10 patients (22.2%), leucopenia in 13 patients (28.8%) and thrombocytopenia in 12 patients (26.6%). A research conducted in South Africa found that 61% of people had hematological involvement, which is comparable to the findings of this study.[13] According to a study conducted in Nigeria, the frequency was 69.2%.[9]

Of the 40 patients undergoing ANA screening all were ANA positive. Speckled and homogeneous pattern were the most frequent with frequencies being 52.5% and 50.0%, respectively. Nucleolar pattern was seen in 7.5% of the patients while the cytoplasmic pattern was noted in 25% cases. Similar findings were found in other studies fromBharat.[5,1] Additionally, a Nigerian study found that 100% of patients had antinuclear antibodies.[9]According to a Moroccan study, 88% had ANA.[14]According to a different Nigerian study, 95.7% of the patients had ANA, and the majority of them had high titres with a speckled immuno fluorescence staining pattern.[15] Speckled patterns are the most prevalent, appearing in 56.7% of cases, according to another Bhartiya study.[1] According to a study conducted in South Bharat, the most prevalent pattern was homogenous.[12]

Regarding the type of autoantibody, among 41 patients who underwent test for ANA profile, anti-SmD1, anti-histone and anti-dsDNA were found to be the most frequent with frequencies being 70.7%, 68.3% and 65.8% respectively. Besides that, Anti U1 snRNP, Anti Ku, Anti Ro 60, Anti Nucleosome antibody were found in significant proportion of patient (56.1%, 56.1%, 51.2%, 48.8%, respectively). According to a study conducted in South Bharat, anti-Smith antibody was seen in 49% of the participants followed by anti-Ro (47%), anti-ds DNA (45%) and anti-U1 RNP (42%).Reduced complements levels were reported in 72% of the patients. Anti-dsDNA was reported to be positive in 89.36% of individuals with a clinical diagnosis of SLE in another study conducted in south India.[12]

This study is not without limitations. It was a single canter study with a small sample size. Furthermore, the participants were all admitted patients. Hence the findings may not ne generalizable to patients in the community who may have a milder form of the disease. Nonetheless, it gives a useful insight into the pattern of clinical and serological manifestations of SLE in the region.

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