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Research Article

CLINICAL AND LABORATORY PROFILE OF HOSPITALISED SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS - A RETROSPECTIVE REVIEW OF CASE RECORDS INVOLVING

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A B S T R A C T

We have analysed the case records of Systemic Lupus Erythematosus patients admitted in a tertiary care hospital from July 2015 to June 2018.Clinical, laboratory profile and various reasons for the hospitalisation were analysed in 78 patients with 80 hospitalisations. Active SLE was seen in 51 patients. Hematological manifestations were seen in 37 patients and renal involvement in 33 patients. Thrombocytopenia was the commonest haematological abnormality. Twenty six patients had infection. Urinary tract infection was the commonest infection There were 2 deaths. We have compared our observations with the world data.

INTRODUCTION

Systemic Lupus erythematosus (SLE) is an auto immune disease of unknown etiology which affects multiple systems. It can present with serious manifestations which require hospitalisation. The reasons for hospitalisations may be either the active disease or its complications. As these patients are immuno compromised either due to the nature of the disease or due to the medicines used for treating the disease manifestations, they are more prone for infections and may need hospitalisation. Various clinical presentations of SLE which may mimic other diseases are sometimes misdiagnosed and may have impact on the survival of the patient.

Aim of the study

To analyse the clinico laboratory profile and reasons for hospitalisation in patients with Systemic Lupus Erythematosus.

MATERIALS AND METHODS

A retrospective review of case records of SLE Patients diagnosed using SLICC 2012 (Systemic Lupus International Colloboration Clinics) Criteria who were admitted in Rheumatology unit in a teaching hospital in South India, during the period July 2015-June 2018 was done. Patients with the diagnosis of overlap syndrome were excluded. We have analysed the demographic, clinical and laboratory parameters and compared our data with the other studies done in various parts of the world. Profile of patients is given in Table 1.

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Table 1 Profile of hospitalised SLE patients

Number of patients	78
Number of hospitalisations	80
Sex	Male -4 , Female 74
Mean Age (yrs)	27.8 ± 10.1
Mean duration of SLE (months)	37 ± 7.5
Mean Duration of hospital stay (days)	13.9 ± 6.7
Flare	63%
Mucocutaneous	34 %
MSK	18.4 %
Renal	42 %
Hematological	47.3 %
Neuro Psychiatric	9.2%
Serositis	18.4 %
Infections	33 %
Acute Coronary Syndrome	0
Thromboembolic events	1%

RESULTS

Totally there were 78patients with 80 hospitalisations. There were 74 females and 4 males. There were six Childhood SLE patients. Mean age was 27.8 ±10.1SD yrs. Fifty four patients were known SLE patients and 24patients were diagnosed to have SLE after hospitalisation. The mean duration of SLE before the hospitalisation was37±7.5 SD months. Mean duration of hospital stay was 13.9 ± 6.7 SD days.

Active SLE was seen in 51 patients. Mucocutaneous lesions in the form of skin rashes, oral ulcers were noted in 27 patients. Acute cutaneous lupus erythematosus (ACLE) lesions were noted in 16 patients, Subacute cutaneous lupus erythematosus lesions (SCLE) in 4 and Discoid Lupus erythematosus lesion in 2 patients were noted. Musculoskeletal manifestations were noted in 17 patients. Fever and other constitutional symptoms were noted in 14 patients.

Hematological abnormalities were seen in 37 patients. Among those 12 patients had anemia. Two patients had hemolytic anemia. Both Anemia and Thrombocytopenia were seen in 7, Anemia and Leucopenia in 4 and pancytopenia was seen in 8. Leucopenia alone was seen in 4 and isolated thrombocytopenia in 1. Splenomegaly was seen in 8 patients. One patient was treated as a case of Myelodysplastic syndrome before the hospitalisation.

Renal involvement was seen in 33 patients .Renal involvement in the form of proteinuria more than 500 mg per day was seen in 33 patients. Microscopic hematuria was seen in 4, active sediments were seen in 12. Renal Biopsy was done in 3 patients. Class III and Class V lupus nephritis were diagnosed in one patient each and one patient had both Class III and IV lupus nephritis. Seven patients with nephritis were diagnosed to have SLE after admission. Biopsy could not be done in other patients because of the presence of either sepsis or the presence of other serious complications of SLE. Rest of the patients refused to give consent for the renal biopsy.

Cardio vascular involvement was noted in 19 .Pericardial effusion was seen in 6. Three patients had pulmonary hypertension,4 had Mitral valvular regurgitation and peripheral vasculitis was seen in 7. One patient had Dilated Cardiomyopathy.

Neuropsychiatric manifestations were noted in 9. Meningitis was seen in 4. Two patients had non tuberculous meningitis ,2 had TB meningitis. Cerebral vasculitis was seen in 2,Chorea in 1 and Psychosis was seen in 2.Two patients were admitted for seizures who had no organic lesions in the brain on MR imaging.

Respiratory system involvement was seen in 14.Ten patients had pleural effusion, 2 had Diffuse alveolar haemorrhage and 2 had Lupus pneumonitis. One patient presented with epistaxis for which the cause could not be ascertained.

Hepatitis was seen in 7. Non alcoholic fatty liver disease was seen in 4 patients. Lupus enteritis was seen in one patient.

Infection was the reason for admission in 26 patients. Urinary tract infection in 10, Respiratory infection in 9, Herpes Zoster skin infection in 1,oral candidiasis in 3,esophageal candidiasis in 1,Tuberculous meningitis in 2. Urine culture showed growth of Staphylococcal aureus in 2, Klebsiella species in 2, Citrobacter and Enterococcus in one each. Blood Culture showed growth of Staphylococcus aureus in 2.Pseudomonas aeruginosa was the commonest organism grown in the sputum of patients with respiratory infection.

Avascular necrosis of hip joints was seen in one patient.

ANA profile by immunoblot was done in 18 patients. Anti ds DNA, anti histone antibodies and anti nucleosomal antibodies were positive in 6 patients, Anti Ribosomal P and Anti Sm RNP antibodies were seen in 5 patients, Anti SS-A -Ro 52 kd and Anti Sm antibodies were seen in 4 .Direct antiglobulin test was positive in 2 patients who had hemolytic anemia. Hypothyroidism was seen in 6 patients. There were two deaths, one due to Diffuse alveolar haemorrhage and another due to septicaemia.

DISCUSSION

We have analysed the demographic, clinical , laboratory profile and comorbid conditions of the hospitalised SLE patients and compared with the other studies .In our study active Lupus was the commonest reason for admission. SLE was diagnosed after hospitalisation in 30 percent of patients. Poor compliance of treatment was one of the reasons for the development of flare in our patients. Hematological complications were seen as a common presentation followed by renal involvement in our patients.

Lee J *et al* reported an average annual hospitalisation rate to be 7.6% (range 6.6-8.9%). In there study most common reasons for hospitalization were hematologic (22.1%), serositis (20.6%), musculoskeletal (MSK) (16.2%), and renal (14.7%) in a Lupus Canadian cohort (1)**.** Lee JW *et al* reported that arthritis, pericarditis, and anti-SS A antibody positivity at the time of diagnosis were risk factors for frequent hospitalization in Korean patients (2)**.**In our study only 2 patients were re admitted during the study period. One patient with recurrent peripheral vasculitis and the other one for recurrent respiratory infection.

Renal involvement was seen in around 40% of our patients. Hematological complications were seen as common association with renal involvement in our study. Anemia was the commonest association. Serositis in the form of pleural effusion and pericardial effusion were seen in 7 patients who had renal involvement. Huong DL *et al* reported renal involvement in 36% among the 180 patients they have studied .Renal involvement was noted 5 years after the diagnosis of SLE in 30.7% of patients. They have observed more frequent renal involvement in young male patients of non-French non-white origin. Malar rash, psychosis, myocarditis, pericarditis, lymphadenopathy, hypertension, anemia, low serum complement, and raised anti-dsDNA antibodies were reported to be more frequently associated with renal involvement (3).

Infections were more common in our study population when compared to other studies. The reason may be that most of our patients are from poor socioeconomic background. Urinary tract infection was the most common infection followed by respiratory infection. Siripaitoon B *et al* reported that the overall mortality rate during ICU hospitalization was 57% and the most common cause of death was infection, especially in the lower respiratory tract in Thai patients (4). Teh CL *et al* reported pulmonary infection as the most common one followed by septicemia (5). South African study done by Dubula *et al* reported pneumonia as the commonest infection followed by cutaneous sepsis, tuberculosis, urinary tract infections and septicaemia(6). In-hospital mortality was higher among patients with SLE and opportunistic infections and those with pneumonia or sepsis who required mechanical ventilation (7). M Jallouli *et al* reported, acute infections as the cause for 9.4% of admissions in Tunisian population. The commonest infection was pulmonary followed by urinary tract and cutaneous infections(8).

Hematological manifestations in SLE include leucopenia, auto immune haemolytic anemia, thrombocytopenia, thrombotic thrombocytopenic purpura and myelofibrosis.

Reduction in the number of granulocytes as well as lymphocytes contribute for the leucopenia. Studies have found greater absolute deficiency of granulocytes than lymphocytes (9). Although leucopenia occurs in 50-60% of patients with SLE, only 17% have a WBC count <1000/mm (10,11).The pathogenesis of neutropenia in SLE is not entirely understood. Both humoral and cellular immune mechanisms are reported to be involved. Three potential mechanisms reported to be the cause for neutropenia in SLE are (i) increased peripheral destruction of granulocytes; (ii) changes in marginal and splenic pool, or increased margination and (iii) decreased marrow production (12).Yamasaki *et al* studied the pathogenesis of granulopoietic failure in SLE. A decreased number of colony-forming units (CFU) in the bone marrow was demonstrated in 16 women with SLE which correlated with the peripheral granulocyte/monocyte count. This study also found peripheral blood T lymphocytes from three patients which tended to suppress the CFU growth from allogenic normal bone marrow (13).Haematological manifestations were more prevalent in our study patients (47%) when compared to the other studies. Thrombocytopenia was the commonest haematological abnormality seen in our patients.SLE patients positive for anti-Ro autoantibodies were found to have significantly lower neutrophil counts than patients without anti-Ro. Cross-reactivity of anti-Ro with a 64 kD protein on neutrophil cell surfaces may facilitate neutropenia in patients with SLE(14). Miranda Hernandez *et al* reported thrombocytopenia as the most common finding followed by haemolytic anaemia and neutropenia in their study, and found that only haematological manifestations were associated with intra-hospital death(15). Isolated idiopathic thrombocytopenic purpura maybe the first manifestation of SLE which can precede other manifestations by months or even years.In general thrombocytopenia is seen in 10-15% of patients with SLE .SLE developed in 12% in one series of 115 patients with ITP (16). In our study thrombocytopenia was found in 20% of our patients.

Neuropsychiatric manifestations were seen in 11.3 % of our patients which is comparable to the study done by Borhani Haghighi *et al* which reported the same prevalence of neuro psychiatric manifestations (17). The most frequent findings in their study were seizure followed by headache ,decreased level of consciousness, Cerebrovascular disease and acute confusional state in the order of frequency. Meningitis was the commonest presentation in our patients followed by Cerebral vasculitis and seizures.

NPSLE (Neuropsychiatric systemic Lupus erythematosus) can not be ruled out even when there is no active disease involving other systems .In a recent study of MRI in patients with NPSLE, 34% had normal brain scans [18]

Gastrointestinal manifestations in SLE was reported to be 42.5% in a study done by Fawzy *et al*. The authors have observed acute abdominal pain due to pleurisy and peritonitis in 6%,diffuse abdominal pain in 23.5%,epigastric pain in 29%, epigastric pain with vomiting in 23.5%; epigastric pain with chronic constipation, and diffuse abdominal pain with bleeding per rectum in 6% each (19).A study which included 86 SLE patients found liver abnormalities in 23.2% of patients and non alcoholic fatty liver was the commonest cause (20). In our study only 9% had liver abnormalities .Chronic active hepatitis in SLE is reported to be up to 4.7% which correlated strongly with the presence of anti ribosomal P antibody (21).

CONCLUSION

In our study active Lupus was the commonest reason for hospitalisation of the patients. Poor compliance for the treatment was one of the reasons for the disease flare .Infections were more commonly seen in our patients when compared to other studies. Hematological complications were seen commonly followed by renal involvement in our patients. About one third of patients were diagnosed after the admission who attended the hospital with serious complications like nephritis. The reason was the late referral because most of them had no specific skin lesions. Education programmes on the awareness of SLE symptoms, varied presentations of SLE and on early detection for the general practitioners will bring down the number of serious complications of SLE. Patient support programmes stressing on early consultation, therapeutic compliance will bring down the morbidity and mortality in the society.

Authors declare that there is no conflict of interest

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