

Increased Neutrophil to Lymphocyte Ratio (NLR) is a sign of disease activity in Systemic Lupus Erythematosus patients with renal involvement

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•Aim: Systemic lupus erythematosus (SLE) is an idiopathic multi-systemic autoimmune disease that covers a wide array of clinical and laboratory findings. Up to half of the patients with SLE manifest with renal disease. Due to its variable clinical courses that named as remission, chronic activity and flares of the disease, accurate assessment of clinical activity is desirable. There are many complicated activity indexes which applied for SLE patients with multi-systemic involvement. Neutrophil to lymphocyte ratio (NLR) is a simple onsite available recently emerged inflammatory marker which is evaluated in different inflammatory conditions such as infection, athero-embolic disease, malignancies and autoimmune disease. In this study we aimed to investigate any relation between disease activity and NLR of the SLE patients with renal involvement.

•Materials and Methods: In this study we retrospectively analyzed hematological and laboratory parameters of SLE patients with renal involvement during both in active disease and in remission period. We exclude the patients with active documented infection, patients with hematological involvement, patients with diabetes mellitus, hypertension, patients with athero-embolic disease, any type of known oncologic or hematologic malignancy. We also excluded the patients had elevated C-reactive protein or leucocyte count over 10,000/ml in order to exclude possible undetected infection or inflammation for remission period of the patients. We investigated 36 SLE patients with renal involvement in their active and remission period of the disease.

•Results: 33 (91.7 %) of the patients were female and 3(8.3 %) of them were male. Female/male ratio was detected 11. Mean age of the patients is 33.30±9.57. Results are given at Table 1.

•Mean proteinuria and serum albumin level of the patients at active disease period were 5.26±2.92 gr/day, 2.58±0.71 gr/dl in orderly. Mean proteinuria and serum albumin level of the patients at remission period after cessation of intensive immunosuppression were 0.77±1.59 gr/day, 4.08±0.58 gr/dl in orderly. Mean NLR at active disease period of the patients was statistically significantly detected higher than at remission period (6.11±5.89, 2.65±1.53, p=0.007).

•Conclusion: Assessment of the disease activity is required for both decision for therapy intervention and cessation in SLE patients. As SLE is a multi-systemic disease it attract attention of many physicians from different specialty. There is no, sole widely acceptable disease activity index and most of them has too many questionnaire that makes them impractical. We detected that SLE patients with renal involvement has a high NLR during disease activation and statistically significantly lower NLR at remission period. We offer to investigate NLR as a disease activity marker for SLE patients with renal involvement via prospective randomized large scaled studies.

Key words: SLE, renal involvement, disease activity, NLR

Table 1: Laboratory results of SLE patients with renal involvement remission and activation periods of the disease.

	Patient characteristics	Period of the disease		P value
		Remission	Active disease	
Age	33.3±9.57			
Sex	3/33			p<0.001
male/female				
Body mass index kg/m ²	23.19±2.89			
White blood cell count x10 ³ /ml		6948.48±1891.77	7864.52±2744.2	
Neutrophil count x10 ³ /ml		4351.52±1462.68	5774.19±2475.6	
Lymphocyte count x10 ³ /ml		1915.15±790.61	1448.39±790.61	
Hb gr/dl		12.05±2.19	10.89±2.53	
Proteinuria gr/day		0.77±1.59	5.26±2.92	<0.001
Serum albumin gr/dl		4.08±0.58	2.58±0.71	<0.001
CRP		3.09±0.65	5.05±4.70	0.079
ESR		23.69±13.68	48.05±31.06	0.002
NLR		2.65±1.53	6.11±5.89	0.007

