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RESEARCH ARTICLE

EVIDENCE OF PATHOGENIC ROLE OF CD-154 IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS.

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Abstract

Objectives:- To detect the level of CD-154 in serum of SLE patients and its relation to disease activity.

Methods:- this cross sectional study 30 SLE patients and 15 apparently healthy control all patients subjected to full history taking, general and local examination, routine investigation and detection of serum level of CD-154

Results:- elevation of serum level of CD-154 in SLE patients than control, highly significant relation between serum CD-154 level and SLEDAI

Conclusion:- CD-154 may be a new marker of disease activity of SLE

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Introduction:-

CD154 is over expressed on CD4+ and CD8+ T cells from SLE Patients with active disease, and is ectopically expressed on monocytes and B cells[1].

B cell CD154 is functional, because CD154+ B cells from SLE patients spontaneously produce antibodies in vitro in a CD154-dependent manner (2).

Treatment with Rituximab, an anti-CD20 mAb which depletes B cells, decreases the frequency of remaining B cells expressing CD40 and T cells expressing CD154, suggesting that some of the benefit of this drug in treating lupus patients may be secondary to decreased activation of the CD-154 signaling pathway (3).

Subjects and methods:-

This study was carried out on 30 female SLE patients diagnosed according to the American college of Rheumatology revised criteria for the classification of SLE[4] [their ages ranged from (22-47) years and 15 apparently age-matched female controls attending out patients & inpatient clinic of Rheumatology and Rehabilitation department, Faculty of Medicine, Zagazig University hospitals.

All patients were subjected to the following:-

1. Full history taking.
2. General Examination.
3. Local examination of locomotor system.
4. Disease activity of SLE patients.

Laboratory Investigation:-

Routine investigation : CBC,ESR,CRB Anti dsDNA.ANA.serum complement Urine analysis Kidney function test

❖ Specific investigation: CD-154 in serum by ELISA.

Statistical analysis:-

All data were coded. Entered and analyzed using (SPSS version 19) software computer package special package for social science. Data were expressed as mean \pm SD for quantitative variables, number and percentage for qualitative variables.

Results:-

Our SLE patients was having the largest proportion clinical data was arthritis followed by oral ulcer and the smallest one was lupus headache and vasculitis.

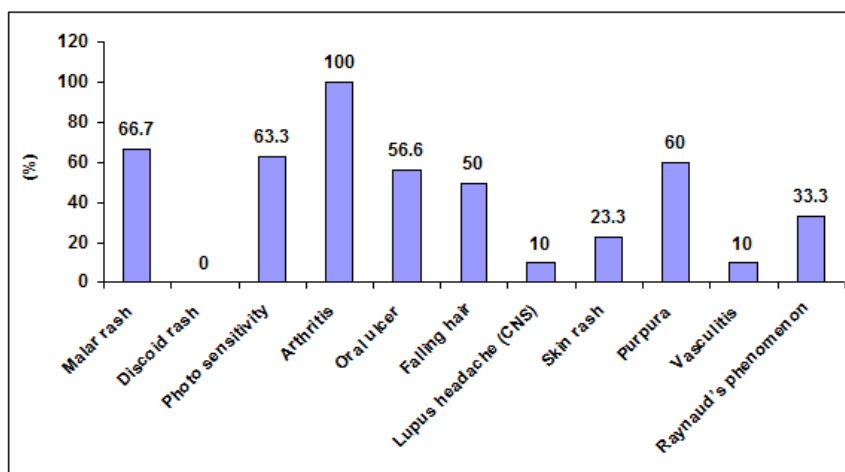


Fig.1 : Frequency distribution of patients as regard to clinical data.

Table 1:- Laboratory finding of SLE patients group.

	Range	Mean
CRB	4-12	5.5
WBC	2-11	3.9
RBC	2.1-4.4	3.8
HGB	5.8	9.0
Pla tlet	24-157	113
ESR	18-90	47
Creatinine	0.4-3	1.7
Proteinuria	0.1-11	306
Albumin	2.2-5.4	3.8
C3	40-98	79
ANA	1/20-1/360	1/122
Anti-dsDNA	19-140	68.5

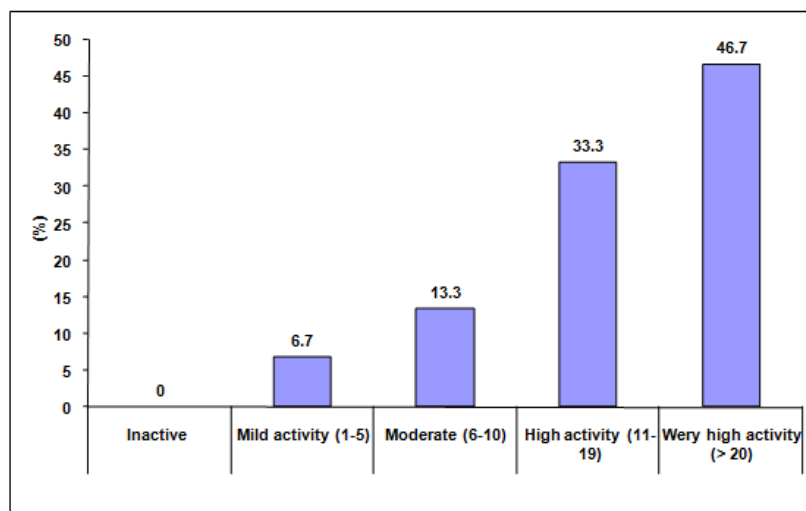


Fig.2: Frequency distribution of patients as regard disease activity index scoring.

Table 2:- serum level of CD-154in SLE patients and control group

SLE Patients		control group		
CD-54		t	p	
Range	0.7-6			
Meane	3.85	0-0.6	9.2	sig
		0.093		

highly significant relation between the serum levels of CD-154 in SLE patients and control group

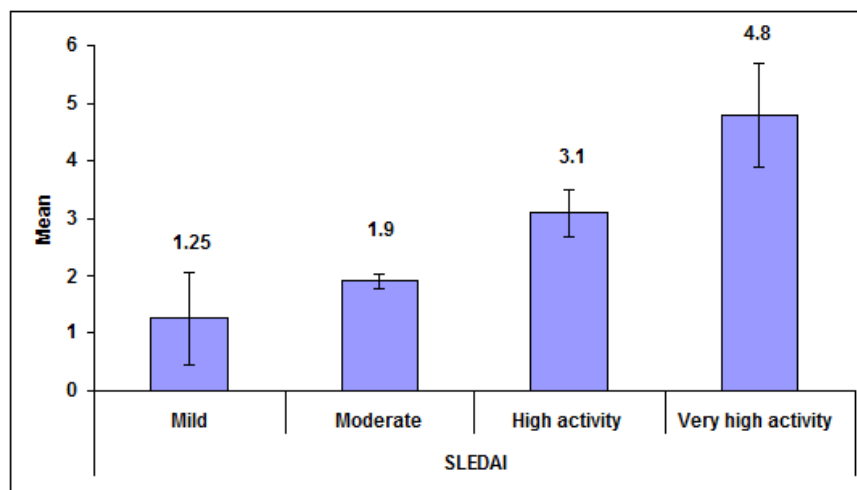


Fig 3:- Relation between serum level of CD-154 and SLEDIA.

it was highly significant relation between the levels of CD-154 in serum of SLE patients and SLEDAI (SLE disease activity indxe).

And also highly significant correlation between serum level of CD154 and anti-ds DNA in SLE patients.

As well as highly significant correlation between protienuria, creatinine and serum level of CD154 But highly.

.significant negative correlation between serum level of CD154 and platlet, WBC and RBCs in our SLE patient.

Table3:- correlation between lab .findings of SLE patients and CD-154

CD-154	R	p
RBCs	-0.9	HS
Platlets	-0.96	HS
Anti-daDNS	0.96	HS
Proteinuria	0.9	HS
Creatinine	0.96	HS
complement[C3]	-0.9	HS

And also highly significant negative correlation between serum level of CD-154 and complement (C3) in our SLE patients

Discussion:-

The present study showed that it was highly significant relation between the serum levels of CD-154 in SLE patients and control group . Our finding was in agreement with the study of [5] who found that SLE patients have statistically significant higher binding unit's values than the healthy control donors, which indicates that serum level of CD-154 is increased in SLE patients.

In this study, our result shows that it was highly significant relation between the levels of CD-154 in serum of SLE patients and SLEDAI .

The positive correlations between CD-154 with SLEDAI, confirm the previous studies that correlate the presence of CD-154 with disease activity [6]. In contrast, [7] did not find any correlation between CD-154 and disease activity.

In this study, our finding shows highly significant correlation between serum levels of CD-154 and arthritis in our SLE patients .

Previous studies showed higher levels of CD-154 in SLE patients who complained arthritis (8).

Our study shows that, there was a highly significant correlation between serum levels of CD154 and anti-dsDNA in our SLE patients . Our finding was agreement with [9], who found that, highly significant correlation between serum levels of CD-154 and anti-dsDNA in thier SLE patients.

In Our Study, There was highly significant correlation between serum levels of CD-154 and protienuria, creatinine level in our SLE patients .our finding was agreement with 10) who found that the correlation between CD-154 and protienuria (g/day) was $r=0.756$ and $P<0.001$ and the correlation between CD-154 and creatinin ($\mu\text{mol/L}$) was $r =0.345$ and $P<0.05$.

In this study our findings showed that , there was highly significant negative correlation between serum levels of CD-154 and platelet count, WBCs count , RBCs count in our SLE patients . These finding was agreement with (11), that found CD-154 is elevated in the Plasma of SLE patients , associated with low platelet ,RBCs, WBCs counts.

Conclusion:-

1. Serum levels of CD-154 are higher in lupus patients than in normal persons.
2. CD-154 is new marker for diagnosis of SLE.
3. CD-154 is correlated with clinical and laboratory finding of SLE patients thus, it may be has a role in pathogenesis of the disease.
4. CD-154 is correlated with disease activity of SLE.

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