RESULTS

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Our study was carried out on 40 patients with connective tissue diseases their age varied between 17 to 55 years with the mean age (38.5±15.2). They classified into 3 groups:

Group I: 15 patients with SLE their age varied between 17 to 55 and mean age (37.9 ± 15.5).

Group II: 15 patients with RA their age varied between 17 to 55 and mean age (36.5 ± 15.1).

Group III: 10 patients with scleroderma their age varied between 17 to 55 and mean age (41.1 ± 12).

In addition, 10 normal persons as control group, age and sex matched to our patients their age varied between 17 to 55 year and mean age (36.4 ± 14.6).

The results of our study are tabulated and the following observations were noticed.

Table (1) this table for analysis of age of the studied groups revealed insignificant variation as regarding the age.

Table (2) from this table, there was statistically insignificant difference between sex distributions in the studied groups (chi-square 0.8 and P-value 0.8).

Table (3), Fig. (1) this table showed highly significant variation was found between groups as regarding the ESR in the first hour and second hour.

Table (4), Fig. (1) this table showed comparisons between groups as regarding the ESR in the first and second hours. There was highly significant difference between control group and rheumatoid arthritis (P<0.01) between control group and SLE group (P <0.01) and between scleroderma and rheumatoid arthritis and SLE groups (P – 0.002).

Table (5), Fig. (2) there was a statistically significant difference between groups as regarding Hb% (P-value < 0.001).

Table (6), Fig. (2) the significant differences as regarding Hb% were found between control and rheumatoid arthritis (P-value 0.005), between control and SLE (P-value <0.001), between scleroderma and SLE (P-value <0.001) and between rheumatoid arthritis and SLE (P-value 0.03).

Table (7) from this table, there was statistically significant variation in mean SCE between the studied groups.

Table (8), Figs. (3, 4, 5, 6, 7 & 8) from this table, the difference as regarding SCE between the control group versus other groups was statistically highly significant.

The difference between scleroderma group versus rheumatoid arthritis was statistically insignificant. The difference between scleroderma group versus SLE group was statistically significant. The difference between SLE and rheumatoid arthritis also was statistically insignificant.

Table (9) there was significant positive correlation between SCE and ESR first hour, ESR second hour, anti-ANA, anti-ds DNA, age and RF and significant negative correlation with Hb% in SLE patients.

Table (10), Fig. (9) from this table, there was highly significant variation between drugs as regarding the mean SCE, the highest mean with cyclophosphamide in SLE patients.

Table (11), Fig. (9) this table shows significant difference was found between methotrexate and cyclophosphamide and between steroid and cyclophosphamide in SLE patients.

Table (12) from this table, there was statistically highly significant difference between cases with positive and negative anti-ANA as regarding the mean SCE in SLE patients.

Table (13) this table shows that there was insignificant difference between number cases with negative, low or high anti ds DNA titer in SLE group of patients (P-value 0.8).

Table (14) this table shows that there was a statistically significant difference between cases with negative, low, and high anti ds DNA titer as regarding the SCE/46 frequency in SLE patients.

Table (15) this table shows that the significant difference as regarding SCE was found between cases with negative and high anti ds DNA titer (P-value 0.002) in SLE patients.

Table (16), Figs. (10 & 11) this table shows that there was a statistically significant positive correlation between anti ds DNA titer and SCE/frequency in cases with SLE. SCE/frequency increases significantly with increasing anti ds DNA titer (P-value <0.001).

Table (17) from this table, there was statistically significant positive correlation between SCE and RF, ESR and negative correlation with Hb% in RA patients.

Table (18) from this table, there was statistically significant variation between drugs as regarding the mean SCE in RA patients.

Table (19) the significant difference was found between cyclophosphamide and methotrexate in RA patients.

Table (20) this table shows that there was a significant difference between cases with rheumatoid arthritis as regarding the rheumatoid factor titer (P-value 0.04).

Table (21), Fig. (12) this table shows that there was a highly significant positive correlation between SCE/46 frequency and the RF titer. SCE/frequency increases significantly with increasing rheumatoid factor titer (P-value < 0.001) in RA patients.

Table (22) from this table, there was significant positive correlation between SCE and age and there was insignificant correlation between SCE and the other parameters in patients with scleroderma.

Table (23) there as statistically significant difference between azathioprine and depenecillamine as regarding the mean SCE frequency in patients with scleroderma.

Table (24) from this table, there was significant positive correlation between SCE and RF, age, ESR and significant negative correlation with Hb% in the studied group.

Table (25) there was statistically significant difference between cases using various drugs as regarding the mean SCE.

Table (26), Fig. (13) this table describes multiple comparisons between drugs in the studied groups revealed that the significant difference was found between cyclophosphamide and other drugs and between azathioprine and depenicillamine.

Table (1): Age in relation to studied and control groups.

Age	N	Mean ± SD	Minimum	Maximum	ANOVA	
					F	P value
Control group	10	36.4 ± 14.6	17.00	55.00	0.2	0.8
Scleroderma	10	41.1± 12	22.00	55.00		
Rheumatoid arthritis	15	36.5± 15.1	17.00	55.00		
Systemic lupus erythromatosis SLE	15	37.9± 15.5	17.00	55.00		
Total	50	37.8± 14.2	17.00	55.00		

Table (2): Sex distribution in the studied and control groups.

Group		SEX		Total
		Female	Male	
Control group	Count	6	4	10
	% within Group	60%	40%	20%
Scleroderma	Count	7	3	10
	% within Group	70%	30%	20%
Rheumatoid arthritis	Count	9	6	15
	% within Group	60%	40%	30%
Systemic lupus erythromatosis SLE	Count	1	4	15
	% within Group	73 3%	26.7%	30%
Total	Count	33	17	50
	% within Group	66%	34%	100%

***Table (3)*: ESR in the first and second hours in the studied and control groups.**

		N	Mean	Minimum	Maximum	ANOVA	
						F	P value
ESR 1 hour	Control group	10	14.5± 7.4	6.00	30.00	15.02	<0.001
	Scleroderma	10	22.4± 12.4	5.00	46.00		
	Rheumatcid arthritis	15	53± 19.6	20.00	80.00		
	Systemic lupus erythromatosis SLE	15	52.2± 22.9	20.00	100.00		
	Total	50	39± 24.3	5.00	100.00		
ESR 2 hour	Control group	10	22.3± 7.6	12.00	35.00	13.02	<0.001
	Scleroderma	10	36.9± 14	18.00	60.00		
	Rheumatoid arthritis	15	61.4± 21	25.00	90.00		
	Systemic lupus erythromatosis SLE	15	64.3± 24.7	30.00	115.00		
	Total	50	49.6± 25.3	12.00	115.00		

***Table (4)*:** Multiple comparisons between groups as regarding the ESR in the first and second hours in the studied and control groups.

Dependent Variable: ESR 1 hour		Mean Difference	Sig.
Group	Versus group		
Control group	Scleroderma	-7.9	0.8 NS
	Rheumatoid arthritis	-38.7	<0.001 HS
	Systemic lupus erythromatosis SLE	-37.7	<0.001 HS
Scleroderma	Rheumatoid arthritis	-30.7	0.002 HS
	Systemic lupus erythromatosis SLE	-29.8	0.002 HS
Rheumatoid arthritis	Systemic lupus erythromatosis SLE	0.8	0.9 NS
Dependent Variable: ESR second hour			
Control group	Scleroderma	-14.6	0.4 NS
	Rheumatoid arthritis	-39.1	<0.001 HS
	Systemic lupus erythromatosis SLE	-42.03	<0.001 HS
Scleroderma	Rheumatoid arthritis	-24.5	0.03 S
	Systemic lupus erythromatosis SLE	-27.4	0.01 S
Rheumatoid arthritis	Systemic lupus erythromatosis SLE	-2.9	0.9 NS

NS = insignificant. S = Statistically significant. HS = Highly significant.

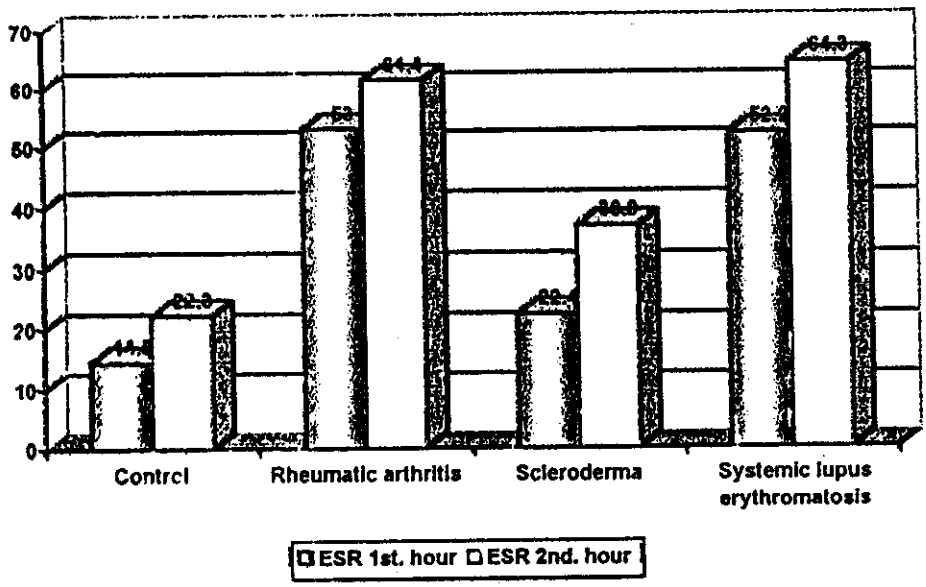

Figure (1): Mean ESR in the first and second hour in the studied and control groups.

Table (5): Hb% in the studied and control groups.

Hb%	N	Mean	Minimum	Maximum	ANOVA	
					F	P value
Control group	10	10.6± 0.7	9.9	12.00	16.6	<0.001
Scleroderma	10	10.2± 0.5	9.50	11.00		
Rheumatoid arthritis	15	9.6± 0.8	8.20	11.00		
Systemic lupus erythromatosis SLE	15	8.8 ± 0.7	7.50	9.6		
Total	50	9.7 ± 1.9	7.50	12.00		

Table (6): Pair wise comparisons between groups as regarding the Hb%.

	Dependent Variable Hb %	Mean Difference	P value
Group	Versus group		
Control group	Scleroderma	0.4	0.5
	Rheumatoid arthritis	1.05	**0.005**
	Systemic lupus erythromatosis SLE	1.79	**<0.001**
Scleroderma	Rheumatoid arthritis	0.6	0.1
	Systemic lupus erythromatosis SLE	1.35	<0.001
Rheumatoid arthritis	Systemic lupus erythromatosis SLE	0.7	<0.001

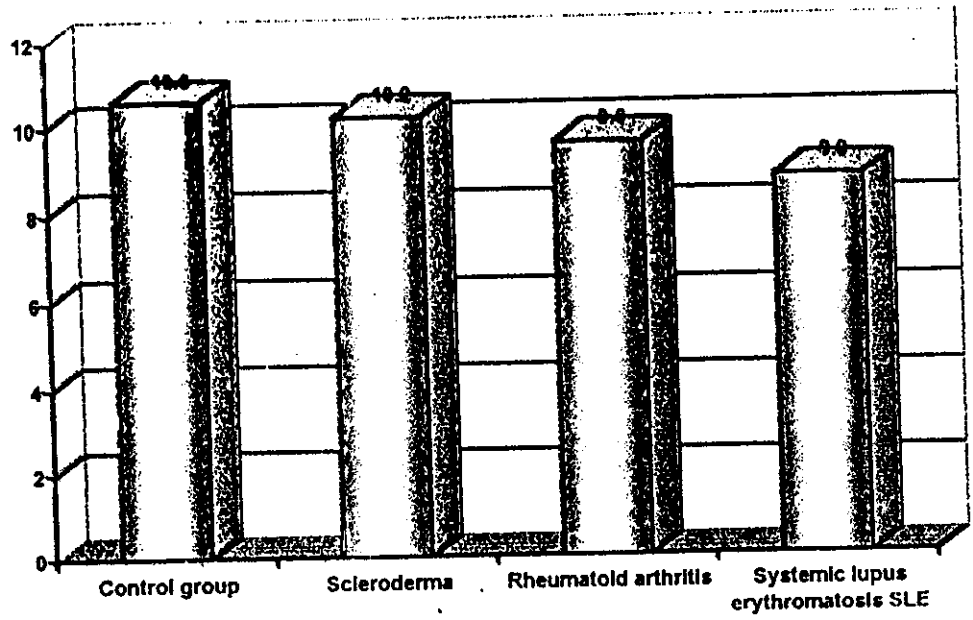

Figure (2): Mean Hb% in the studied and control groups.

Table (7): SCE in relation to studied and control groups.

	N	Mean ± SD	Minimum	Maximum	ANOVA	
					F	P value
Control group	10	4.8 ± 1.7	3.00	7.00	25	< 0.001
Scleroderma	10	11.6 ± 2	9.00	15.00		
Rheumatiod arthritis	15	16.1± 5.1	8.00	23.00		
Systemic lupus erythromatosis SLE	15	17.9± 4.6	9.00	27.00		
Total	50	13.5± 6.2	3.00	27.00		

Table (8): Multiple comparisons between the studied and control groups in relation to the SCE.

SEC/46 frequency	Dependent Variable	Mean Difference	Sig.
Group	Versus group		
Control group	Scleroderma	-6.8	0.005
	Rheumatoid arthritis	-11.3	< 0.001
	Systemic lupus erythromatosis SLE	-13.07	<0.001
Scleroderma	Rheumatoid arthritis	-4.5	0.06
	Systemic lupus erythromatosis SLE	-6.27	0.004
Rheumatoid arthritis	Systemic lupus erythromatosis SLE	-1.7	0.7

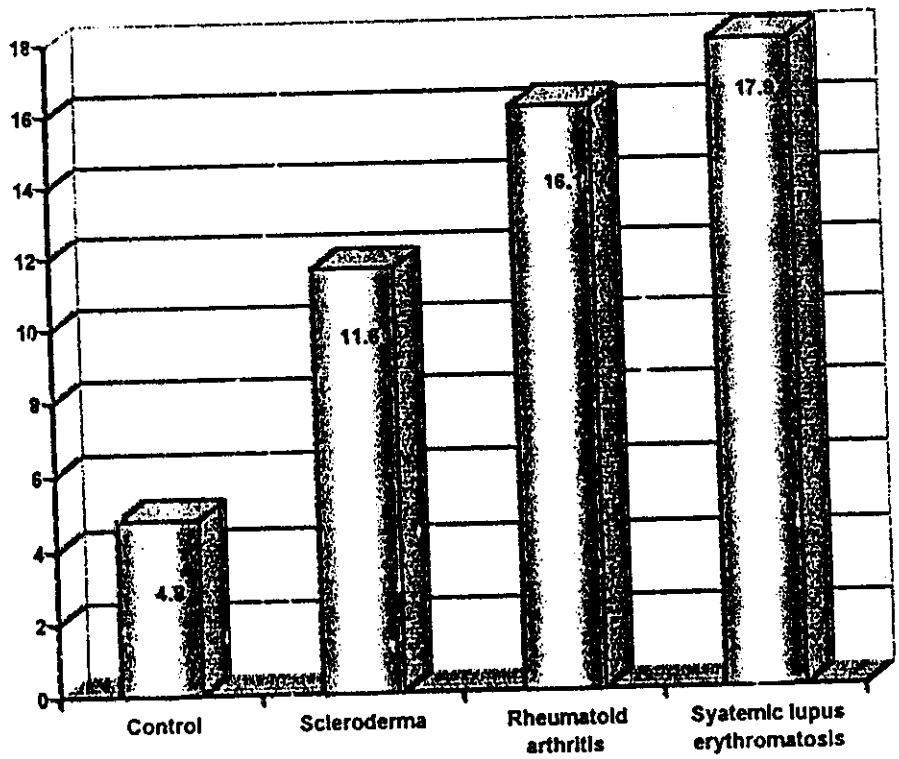

Figure (3): Mean SCE/46 frequency in patients groups versus control group.

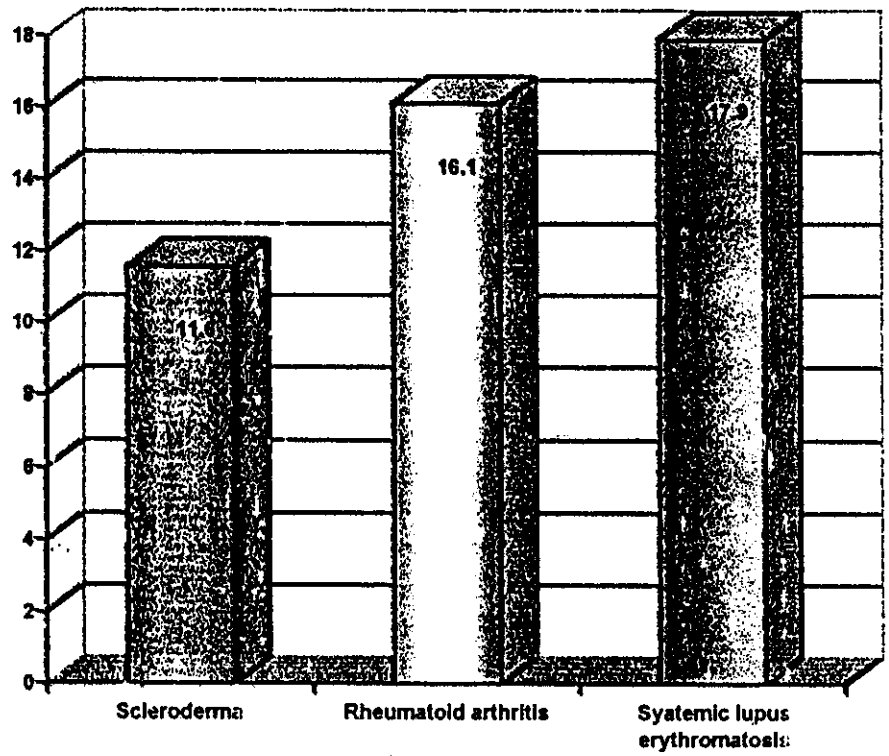

Figure (4): Mean SCE/46 frequency in patients groups.

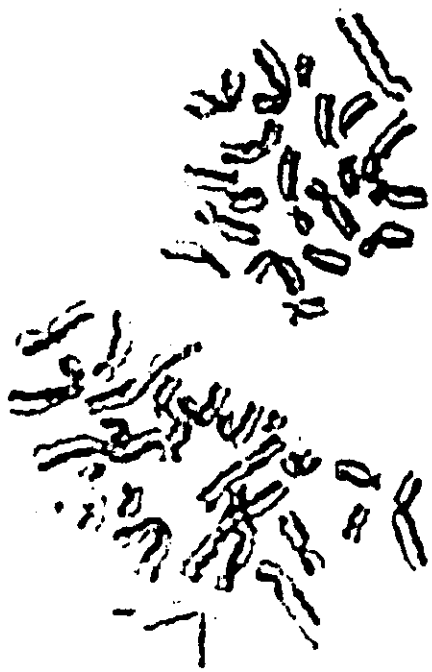

Figure (5) : SCE in SLE patient

Figure (6) : SCE in RA patient

Figure (7) : SCE in Patient with scleroderma

Figure (8) : SCE in control group

Table (9): Correlation between SCE and other parameters in SLE.

	Correlation Coefficient	P value
SEX	-0.018	0.9
Age	0.575*	0.02
R F	0.630*	0.01
Anti ANA	0.727**	0.002
Anti ds DNA	0.727**	0.002
ESR 1 hour	0.661**	0.007
ESR 2 hour	0.640*	0.01
Hb %	-0.581	0.02

* Correlation is significant at the .05 level (2-tailed).
** Correlation is significant at the .01 level (2-tailed).

Table (10): SCE / 46 frequency in relation to drugs used in SLE.

	N	Mean	Std. Deviation	Minimum	Maximum	ANOVA	
Methotrexate	3	14.3	1.5	13	16	7.8	0.004
Azathioprine	4	18.3	1.7	16	20		
Cyclophosphamide	5	22.4	3.4	19	27		
Steroid	3	13.3	4	9	17		
Total	15	17.9	4.6	9	27		

Table (11): **Multiple Comparisons between drugs in relation to SCE in SLE group.**

Dependent Variable: SCE/46 frequency

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		Mean Difference	P value
Methotrexate	Azathioprine	-3.9	0.4
	Cyclophosphamide	-8	0.02
	Steroid	1	0.9
Azathioprine	Cyclophosphamide	-4.1	0.2
	Steroid	4.9	0.2
Steroid	Cyclophosphamide	-9.1	0.01

* The mean difference is significant at the 0.05 level.

Table (12): SCE in relation to anti ANA in SLE group.

	Anti ANA	N	Mean	Std. deviation	Unpaired t	P value
SEC/46 frequency	Positive	9	20.3	3.7	3.2	0.005
	Negative	6	14.2	3.2		

Table (13): SCE in relation to anti ds DNA in SLE group.

Anti ds DNA	Number	%	Chi-square	P-value
Negative	6	40%	0.4	0.8
Low titre positive	4	26.7%		
High titre positive	5	33.3%		
Total	15	100%		

Table (14): SCE/46 frequency (Mean ± SD) in SLE patients.

Anti ds DNA titer	No. (%)	Mean±SD	Minimum	Maximum	ANOVA	
					F2,12	P-value
Negative	6 (40%)	14.2±3.2	9	18	11.5	0.002
Low titer positive	4(27%)	17.5±1.7	16	19		
High titer positive	5(33%)	22.6±3.2	20	27		
Total	15(100%)	17.9±4.6	9	27		

Table (15): Pair wise comparison between SCE/46 frequency in relation to anti ds DNA titer in SLE group.

Anti-DNA titer	Versus anti ds DNA titer in	Mean difference (L-J)	Std. Error	P-value
Negative	Low titer positive	-3.3	1.9	0.2
	High titer positive	-8.4	1.8	0.002
Low titer positive	High titer positive	5.1	1.9	0.06

Table (16): Correlation between anti-ds DNA titer and SCE/frequency.

Anti - ds DNA titer	SCE/46 frequency
Correlation coefficient	0.867
P-value	<0.001
No. of cases	15

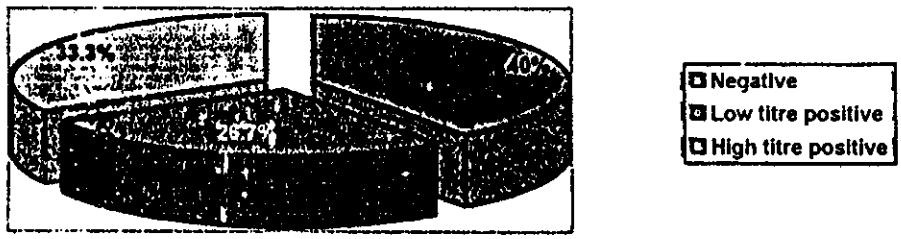

Figure (10): Percent of cases in relation to titer of anti-ds DNA.

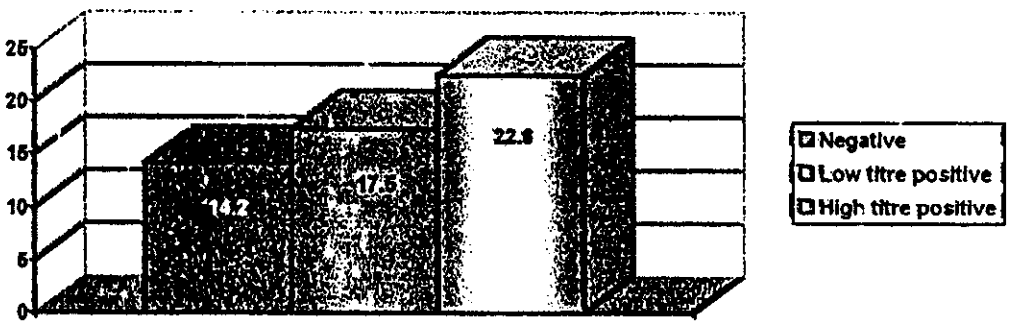

Figure (11): Mean SCE /46 frequency in relation to the anti-ds DNA titer in SLE group.

Table (17): Correlation between SCE and other parameters in rheumatoid arthritis.

	Correlation Coefficient	P value
SEX	0.363	0.1
Age	0.427	0.1
Rheumatoid factor	0.755	0.001
Anti ANA	0.279	0.3
Anti DNA	0.279	0.3
ESR 1 hour	0.907	<0.001
ESR 2 hour	0.907	<0.001
Hb %	- 0.900	<0.001

** Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).

Table (18): SCE/46 frequency in relation to drugs used in RA.

	N	Mean	SD	Minimum	Maximum	ANOVA	
						F	P value
Methotrexate	6	12	4.9	8	21	8.9	0.004
Azathioprine	5	16.8	2.4	13	19		
Cyclophosphamide	4	21.5	1.3	20	23		
Total	15	16.1	5.1	8	23		

Table (19): Multiple Comparisons between drugs used in RA.
Dependent Variable: SEC/46 frequency
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Drug	Versus	Mean Difference	P value
Methotrexate	Azathioprine	-4.8	0.1
	Cyclophosphamide	-9.5*	0.004
Azathioprine	Cyclophosphamide	-4.7	0.1

* The mean difference is significant at the 0.05 level.

Table (20): Rheumatoid factor titer in rheumatoid arthritis group.

Rheumatoid factor titer	Frequency	%	Chi-square	P-value
Negative	5	33.3%	6.4	0.04
Low titer positive	1	6.7%		
High titer positive	9	60%		
Total	15	100%		

Table (21): Correlation between SCE/46 frequency and rheumatoid factor titer in rheumatoid arthritis group.

		SCE/46 frequency
Rheumatoid factor titer	Correlation coefficient	0.844
	Sig. (2-tailed)	<0.01
	N	15

** Correlation is significant at the 0.01 level (2-tailed).

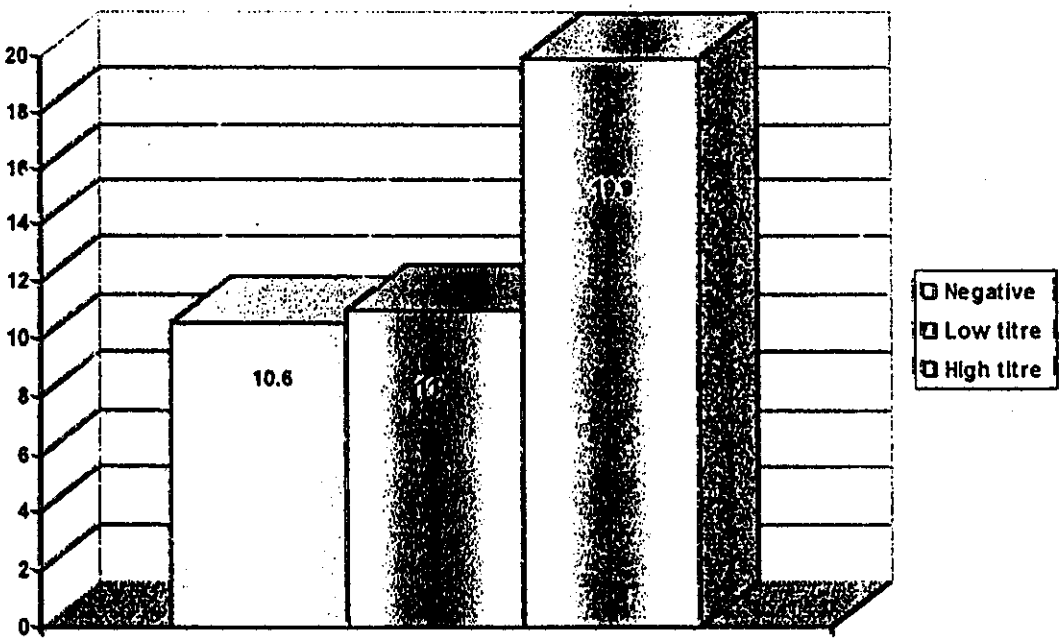

Figure (12): Mean SCE/46 frequency in relation to Rheumatoid factor titer.

***Table (22)*:** Correlation between SCE and other parameters in scleroderma.

	Correlation Coefficient	
SEX	-0.038	0.9
Age	0.807**	0.005
R F	0.394	0.2
Anti ANA	- 0.108	0.7
Anti DNA	- 0.108	0.7
ESR 1 hour	0.114	0.7
ESR 2 hour	0.345	0.3
Hb %	- 0.225	0.5

** Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).

***Table (23)*:** Correlation between drugs used in scleroderma and SCE.

	Drugs used	N	Mean	Std. Deviation	Unpaired t	P value
SCE/46 frequency	Azathioprine	5	13	1.6	3.1	0.01
	Depenecillamine	5	10.2	1.3		

Table (24): Correlation between SCE and other parameters in the studied groups.

	Correlation Coefficient	P value
SEX	0.146	0.3
Age	0.423	**0.006**
R F	0.491	**0.001**
Anti- ANA	0.305	0.05
Anti- ds DNA	0.305	0.05
ESR 1 hour	0.797	**<0.001**
ESR 2 hour	0.806	**<0.001**
Hb %	- 0.650	**<0.001**

** Correlation is significant at the .01 level (2-tailed).
* Correlation is significant at the .05 level (2-tailed).

Table (25): SCE/46 frequency and drugs used in the studied groups.

	N	Mean	Std. Deviation	Minimum	Maximum	ANOVA	
						F	P value
Methotrexate	9	12.7778	4.1164	8.00	21.00	15.5	<0.001
Azathioprine	14	15.8571	2.9051	11.00	20.00		
Cyclophosphamide	9	22.0000	2.5981	19.00	27.00		
Steroid	3	13.3333	4.0415	9.00	17.00		
Depenecillamine	5	10.2000	1.3038	9.00	12.00		
Total	40	15.6500	4.9123	8.00	27.00		

Table (26): Multiple Comparison between drugs in the studied groups.

Dependent Variable: SEC/46 frequency

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Drug used	Versus	Mean Difference	P value
Cyclophosphamide	Methotrexate	9.2222	**<0.001**
	Azathioprine	6.1429	**0.002**
	Steroid	8.6667	**0.006**
	Depenecillamine	11.8000	**<0.001**
Methotrexate	Azathioprine	-3.0794	0.2
	Steroid	-.5556	0.9
	Depenecillamine	2.5778	0.6
Azathioprine	Steroid	2.5238	0.8
	Depenecillamine	5.6571	**0.03**
Steroid	Depenecillamine	3.1333	0.7

* The mean difference is significant at the .05 level.

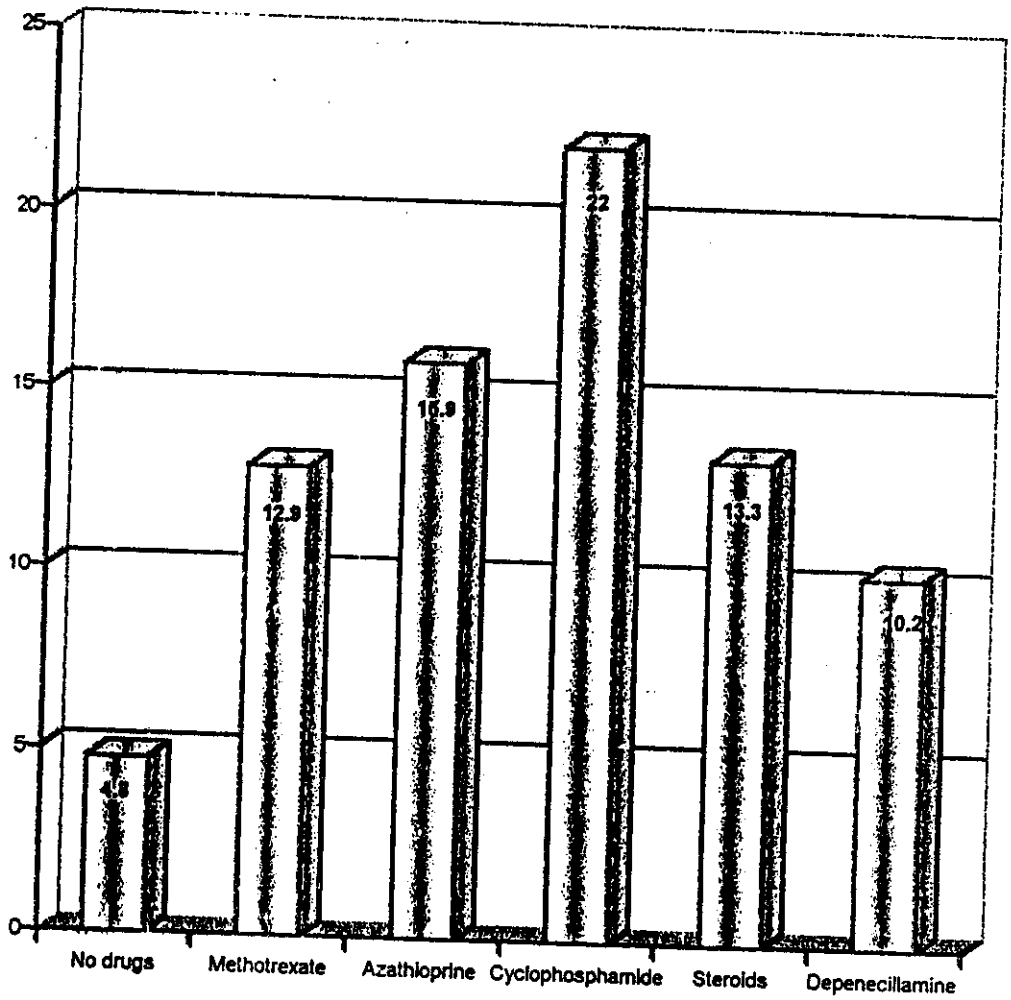

Figure (13): Mean SCE 46/frequency in relation to drugs used in the studied groups.