

RESULTS**Clinical data of the studied groups:**

The number of the patients with acne vulgaris included in this study was 36 patients (**Table 3**), while the number of the control group was 36 patients (**Table 4**).

Table (3): Collective data of the patients.

<i>No</i>	<i>Age</i>	<i>Sex</i>	<i>Degree Of Acne</i>	<i>Back Affection</i>	<i>Duration Of Acne</i>	<i>Dietary Glycemic Index</i>	<i>GL</i>	<i>BMI</i>	<i>FBS</i>	<i>Serum Leptin Level mg/ml</i>
1	24	F	Severe	+	10y	110021	18541	25.6	85	1.820
2	21	F	Severe	+	8 Y	156240	34440	34.66	95	61.188
3	27	F	Severe	+	12 y	105553	20427	28.88	76	18.864
4	18	F	Severe	+	3mo	144424	25008	27.11	80	36.335
5	19	F	Mild	-	1y	75006	8734	18.34	90	26.674
6	21	F	Mild	-	2y	54000	9854	18.07	84	9.820
7	16	F	Mild	-	3y	100050	10836	20.67	80	8.113
8	26	F	Severe	-	3y	120080	20965	24.16	76	17.316
9	21	F	Mild	-	7y	98008	12598	23.83	113	28.843
10	20	F	Severe	+	8y	99987	20061	26	100	77.894
11	20	F	Moderate	+	5y	87666	16332	24.1	97	35.390
12	23	F	Moderate	+	1y	90000	14609	24.01	80	13.234
13	21	F	Moderate	-	2y	122212	11274	23.16	109	32.853
14	18	F	Moderate	-	1y	100000	13074	23.89	99	29.972
15	20	F	Severe	+	8mo	200025	50625	36.61	88	53.541
16	21	F	Moderate	+	5y	155500	10086	21.81	98	21.040
17	20	F	Severe	+	8mo	200025	50625	36.61	88	53.541
18	21	F	Moderate	+	5y	155500	10086	21.81	98	21.040
19	21	M	Severe	-	1mo	200000	21008	25.95	105	-0.634
20	20	M	Mild	-	1mo	155550	10894	23	85	-0.517
21	20	M	Mild	-	1y	250000	26091	28	100	-0.458
22	18	M	Moderate	+	1y	52220	10054	20.57	82	1.674
23	17	M	Moderate	+	3y	65550	10985	20.48	86	1.063
24	17	M	Moderate	-	4mo	80000	16332	24.22	90	29.002
25	18	M	Moderate	-	1y	41000	7632	18.34	93	-0.517
26	15	M	Severe	+	1y	30000	5201	19.92	108	-0.401
27	16	M	Moderate	-	2mo	220000	20934	29.03	116	23.064
28	21	M	Moderate	-	1y	110050	17532	22.94	102	-0.814
29	21	M	Moderate	+	1y	100087	10854	22.36	90	-0.5753
30	22	M	Mild	-	9mo	220000	25409	28.02	107	19.744
31	11	M	Moderate	-	6mo	100000	12609	22.96	101	6.109
32	19	M	Severe	+	1y	255555	20965	24.96	77	8.002
33	27	M	Mild	-	1y	289876	20005	23.20	106	2.436
34	20	M	Moderate	-	5y	256666	23095	25	100	1.674
35	28	M	Moderate	-	5mo	200086	20174	24	104	1.259
36	32	M	Severe	-	2y	165454	16007	23.88	96	7.049

Table (4): Collective data of the control group.

<i>No</i>	<i>Age</i>	<i>Sex</i>	<i>Dietary Glycemic Index</i>	<i>GL</i>	<i>BMI</i>	<i>FBS</i>	<i>Serum Leptin Level mg/ml</i>
1	20	M	100050	12008	22.22	95	0.937
2	26	M	155520	20985	24.22	93	-0.171
3	22	M	165540	20013	22.49	83	0.057
4	19	M	200000	10921	23.6	95	0.171
5	21	M	120000	19800	22.59	76	2.598
6	23	M	155540	18000	25.39	97	-0.343
7	20	M	145400	12435	22.22	86	4.404
8	20	M	122200	17600	24.84	98	3.595
9	22	M	188760	11134	24.22	100	9.820
10	26	M	540000	52001	69	92	-0.814
11	17	M	111000	16008	25.78	85	-0.285
12	18	M	89800	10045	19.87	77	0.171
13	23	M	321900	19554	25.39	81	-0.634
14	19	M	210000	9971	21.45	76	-0.694
15	21	M	166605	16888	23.97	84	5.543
16	20	M	155000	13997	24.60	81	10.183
17	23	M	88000	10044	20.76	106	-0.401
18	17	M	111000	16008	25.78	85	-0.285
19	25	F	200000	25005	28.37	90	35.765
20	22	F	165555	18800	21.80	75	4.709
21	17	F	321000	25085	35	93	44.793
22	21	F	200054	20005	26.14	86	33.921
263	22	F	65409	10045	16.98	108	13.071
24	21	F	50000	13244	16	94	11.219
25	28	F	200080	36032	33.20	77	27.744
26	24	F	88760	9862	20.95	102	12.752
27	17	F	90000	8999	22.49	80	30.799
28	21	F	90000	18098	21.33	98	9.525
29	17	F	213454	19999	24.58	101	18.253
30	18	F	250000	20982	27.49	74	33.029
31	19	F	67543	99765	19.71	97	9.879
32	18	F	144408	22310	25	106	19.872
33	24	f	220000	21000	24.31	97	36.144
34	18	F	255545	25000	27.04	89	3.093
35	17	F	76000	12000	19.59	98	19.744
36	20	F	111098	16009	22.76	93	12.519

FBS= fasting blood sugar (mg/dl), GL=glycemic load, BMI=body mass index, Serum Leptin Level mg/ml.

Demographic characteristics of the studied groups:

This study included 36 patients with acne vulgaris and 36 age & sex matched healthy persons served as control group.

The mean age of the patients group and the control group was 20.69 ± 3.8 years, 20.78 ± 2.7 years respectively. There was no statistically significant difference between patients group and control group, (**Table 5**).

Back affection was found in only 16 patients (44.44%) and not found in 20 patients (55.55%).

As regards acne severity, patients showed mild acne was 8 patients (22.22%), patients with moderate acne was 16 patients (44.44%), patients with severe acne was 12 patients (33.33%).

As regards the BMI, in the patient group it was 23.6 ± 5.5 while it was 24.7 ± 8.4 in the control group, (**Table 6**). There was no statistically significant difference between patients group and control group (P-value >0.05).

The biochemical changes:

As regards the fasting blood sugar level, in the patients group it was $95.1 \text{ mg/dl} \pm 11.8 \text{ mg/dl}$ while it was $92.2 \text{ mg/dl} \pm 10.8 \text{ mg/dl}$ in the control group, (**Table 7**). There was no statistically significant difference between patients group and control group (P-value >0.05).

As regards the serum leptin level, in the patients group it was 16.2 ± 19.3 while it was 10.2 ± 11.8 in the control group, (**Table 8**). There was no statistically significant difference between patients group and control group (P-value > 0.05).

Serum leptin level was significantly higher in females than males in both patients and control group as the serum leptin in female patients was 28.3 ± 19.8 and female controls was 17.9 ± 12.04 and in all females in the study group it was 23.1 ± 16.9 while in male patients it was 4.01 ± 8.1 and in male controls it was 2.5 ± 4.1 and in all males in the study group it was 3.3 ± 6.4 . There was statistically significant difference between females and males in both patients and controls (P-value > 0.05), (**Tables 9, 10, 11**).

The mean dietary glycemic index at the patients group was 125577.7 ± 60945.9 while it was 162797.7 ± 92415.6 in the control group, (**Table 12**). There was no statistically significant difference between patients group and control group (P-value > 0.05).

The mean dietary glycemic load at the patients group was 17015.3 ± 8480.9 while it was 19809.7 ± 15979.6 in the control group, (**Table 13**). There was no statistically significant difference between patients group and control group (P-value > 0.05).

There was no correlation between degree of acne severity of patients and dietary glycemic index, glycemic load, BMI, fasting glucose level and serum leptin level, (**Table 14**). There was no statistically significant correlation between patients group and control group (P-value > 0.05).

There was no correlation between the duration of acne and dietary glycemic index, glycemic load, BMI and fasting glucose level, there was no statistically significant correlation (P-values > 0.05). There is positive correlation between the duration of acne and serum leptin level, There was statistically significant correlation (P-values < 0.05), (**Table 15**).

There was no difference in dietary glycemic index, glycemic load, BMI, fasting glucose level and serum leptin level as regards the back affection in acne patients and there was no statistically significant difference (P-values > 0.05). There was positive relation between the duration of acne and back affection. There was a statistically significant difference (P-values < 0.05), (**Table 16**).

Table (5): Group age-cross tabulation.

		N	Mean \pm SD	t	p
Age/ y	Acne group	36	20.69 \pm 3.8	0.1	>0.05
	Control group	36	20.78 \pm 2.7		

y= years, SD=standard deviation, p>0.05=non significant, p<0.05=significant.

Table (6): Comparison between acne group and control group as regards BMI.

		N	Mean \pm SD	t	p
BMI	Acne group	36	23.6 \pm 5.5	0.7	>0.05
	Control group	36	24.7 \pm 8.4		

Table (7): fasting blood sugar level.

		N	Mean \pm SD	t	p
Fasting Glucose Level	Acne group	36	95.1 \pm 11.8	1.1	>0.05
	Control group	36	92.2 \pm 10.8		

Table (8): Serum leptin level by Mann-Whitney U test.

		N	Mean \pm SD	Test of significance	p
Serum Leptin Level	Acne group	36	16.2 \pm 19.3	1.6	>0.05
	Control group	36	10.2 \pm 11.8		

Table (9): Serum leptin level according to sex in acne patients.

	Sex	N	Mean \pm Std. Deviation	p
SerumLeptinLevel	female	18	28.3 \pm 19.8	<0.001
	male	18	4.01 \pm 8.1	

Table (10): Serum leptin level according to sex in all study groups.

	Sex	N	Mean \pm Std. Deviation	p
SerumLeptinLevel	female	36	23.1 \pm 16.9	<0.001
	male	36	3.3 \pm 6.4	

Table (11): Serum leptin level according to sex in control groups.

	Sex	N	Mean \pm Std. Deviation	p
SerumLeptinLevel	female	18	17.9 \pm 12.04	<0.001
	male	18	2.5 \pm 4.1	

Table (12): Comparison between acne group and control group as regards Dietary Glycemic Index:

		N	Mean \pm SD	t	p
Dietary Glycemic Index	Acne group	36	125577.7 \pm 60945.9	1.8	>0.05
	Control group	36	162797.7 \pm 92415.6		

Table (13): Comparison between acne group and control group as regards Glycemic Load:

		N	Mean \pm SD	t	p
Glycemic Load	Acne group	36	17015.3 \pm 8480.9	0.9	>0.05
	Control group	36	19809.7 \pm 15979.6		

Table (14): Correlation between Degree of Acne and different variables:

	Degree of Acne		
	r	p	N
Dietary Glycemic Index	0.001	0.994	36
Glycemic Load	0.308	0.053	36
BMI	0.269	0.093	36
Fasting Glucose Level	-0.193	0.232	36
Serum Leptin Level	0.178	0.272	36

Table (15): correlation between Duration of Acne and different variables:

	Duration Of Acne		
	r	p	N
Dietary Glycemic Index	-0.112	.493	36
Glycemic Load	0.107	.512	36
BMI	0.249	.122	36
Fasting Glucose Level	-0.108	.506	36
Serum Leptin Level	0.329	.038	36

Table (16): comparison of different variables according to back affection:

		N	Mean \pm Std. Deviation	t	p
Dietary Glycemic Index	no back affection	20	122299.1 \pm 57869.1	0.4	>0.05
	back affection	16	129675.9 \pm 66278.5		
Glycemic Load	no back affection	20	15110.7 \pm 5385.9	1.5	>0.05
	back affection	16	19395.9 \pm 10963.7		
BMI	no back affection	20	22.1 \pm 5.8	1.9	>0.05
	back affection	16	25.48 \pm 4.7		
Fasting Glucose Level	no back affection	20	98.8 \pm 11.9	1.7	>0.05
	back affection	16	93.5 \pm 10.2		
Serum Leptin Level	no back affection	20	12.5 \pm 12.7	1.2	>0.05
	back affection	16	20.7 \pm 25.1		
Duration Of Acne	no back affection	20	1.4 \pm 1.6	2.7	<0.05
	back affection	16	3.9 \pm 3.8		

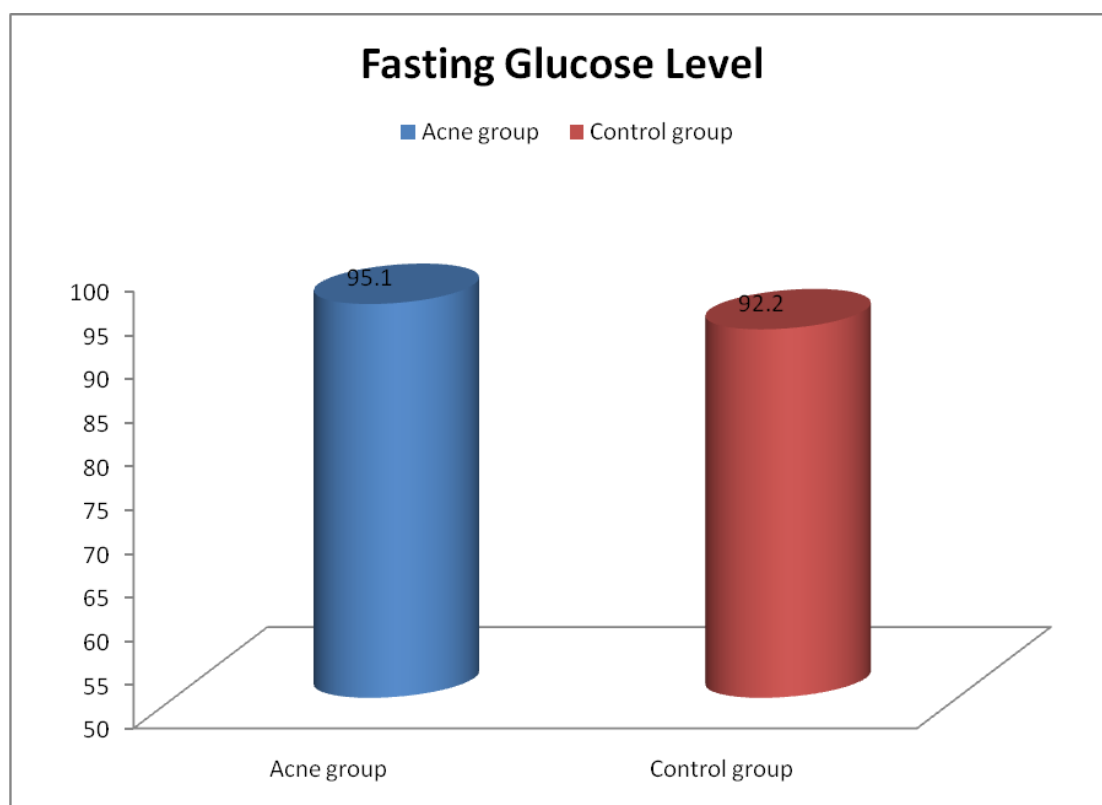


Figure (7): Comparison of fasting glucose level between the patients and the controls.

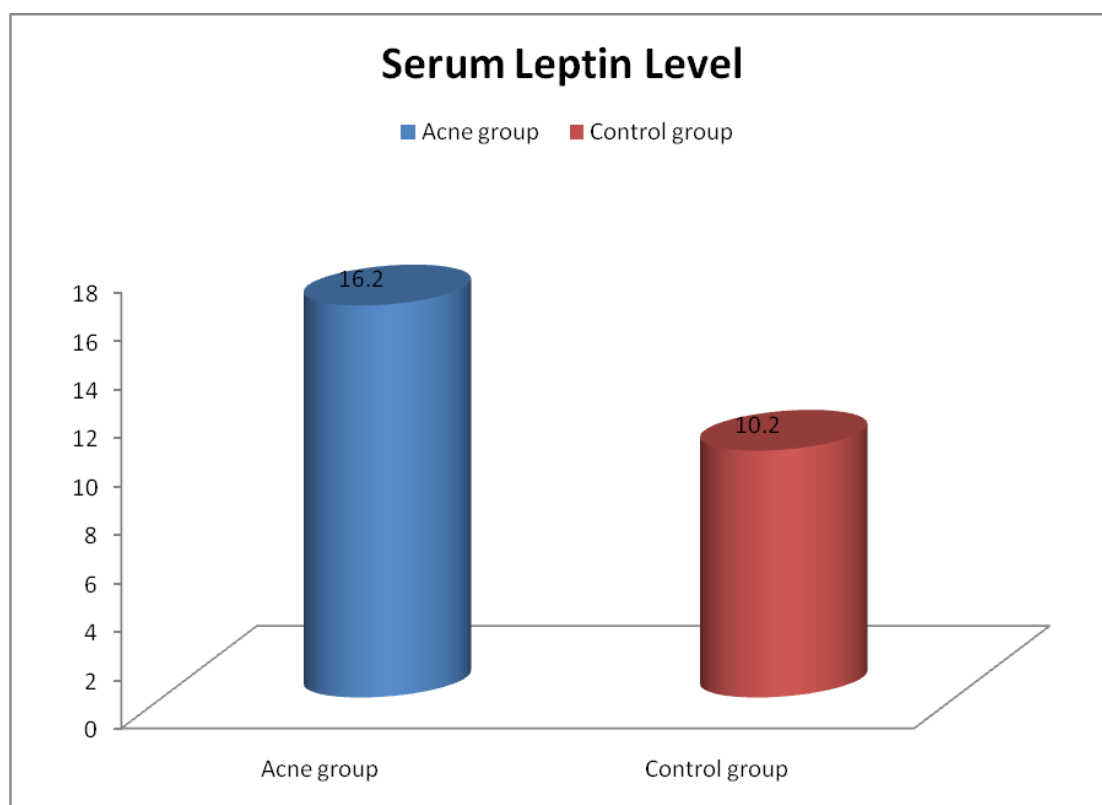


Figure (8): Comparison of serum leptin level between the patients and the controls.

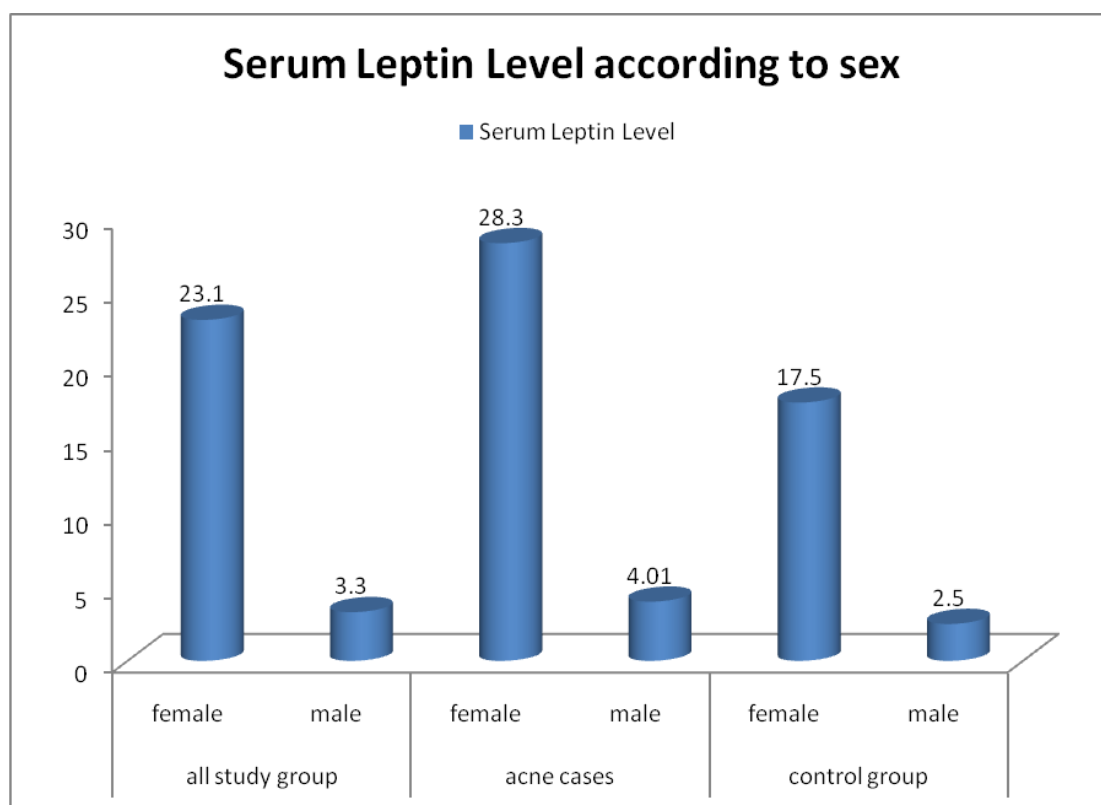


Figure (9): Comparison of serum leptin levels as regards sex.

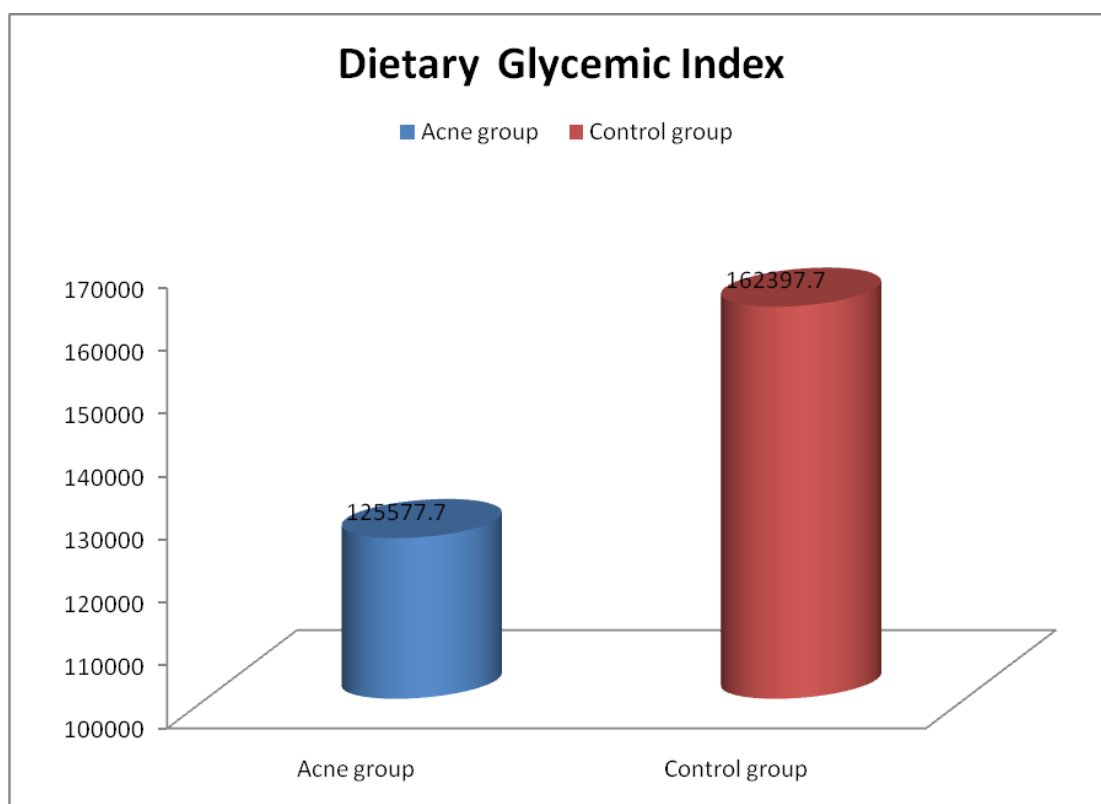


Figure (10): Comparison of dietary glycemic index between the patients and the controls.

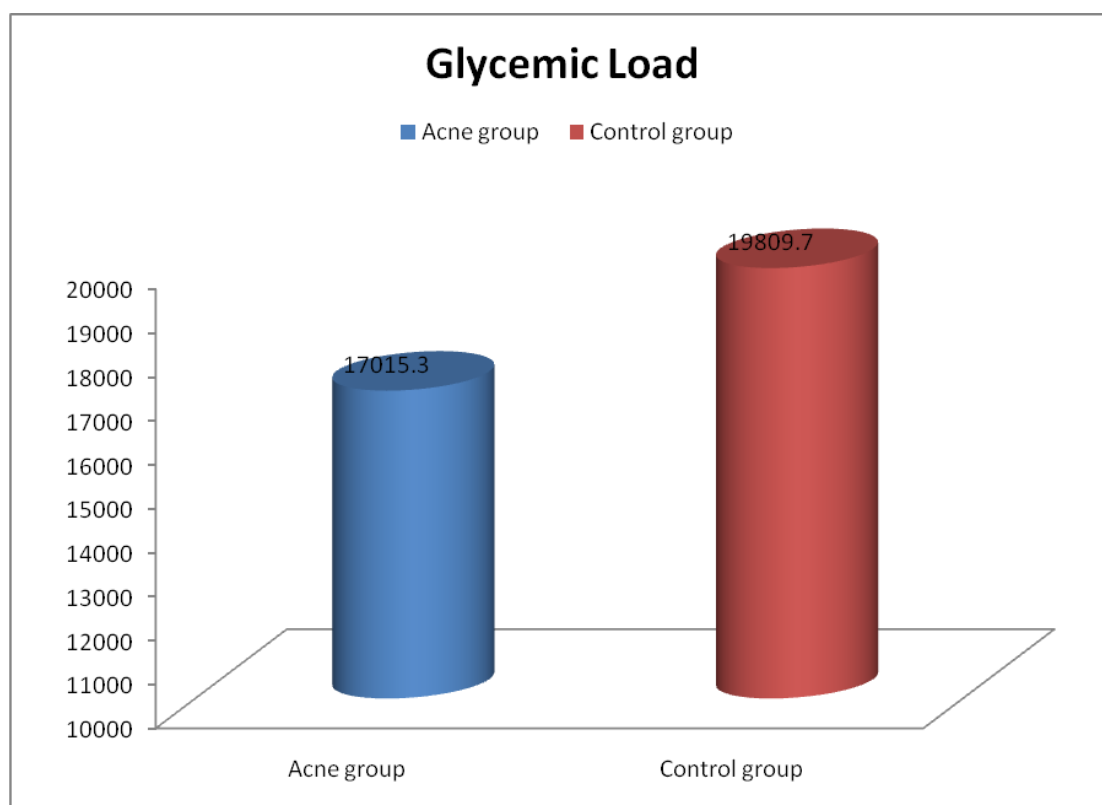


Figure (11): Comparison of glycemic load between the patients and the controls.

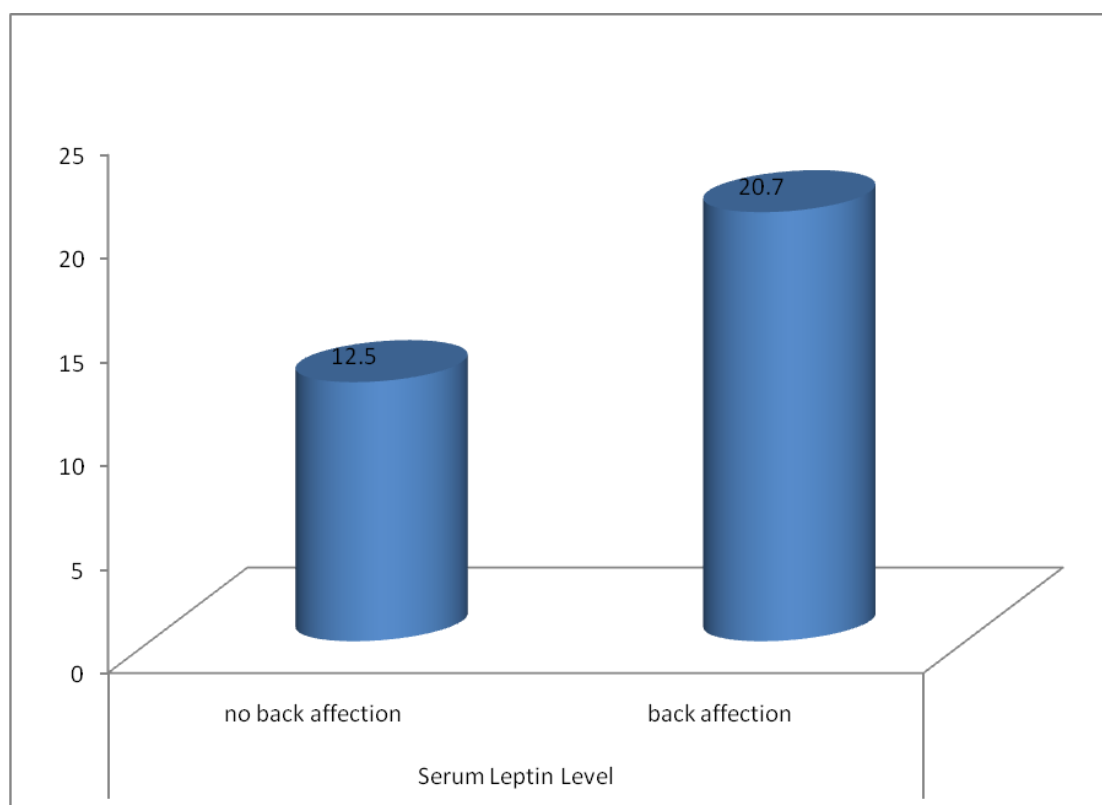


Figure (12): Relation between back affection and serum leptin level of the patients.

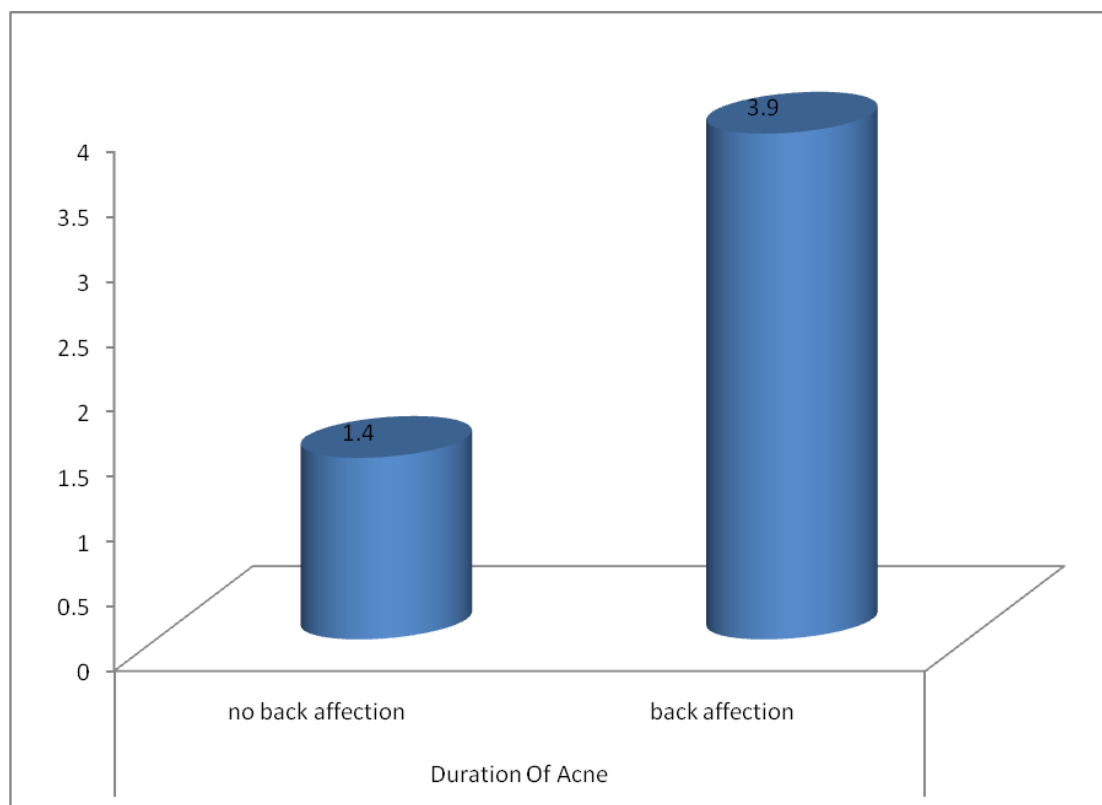


Figure (13): Relation between back affection and duration of acne.