RESULTS

RESULTS

The results of the present study are presented in the tables (2-21) and figures (3 to 15).

Table (2) shows the comparison between the female and male references regarding serum leptin level. The mean value of serum leptin level in the female references was 8.59 ng/ml SEM was 0.13 ng/ml and the range was 0.21-55.32 ng/ml. While in the male references the mean value was 3.81, SEM was 0.12 and the range was 0.11 –15.37 ng/ml.

Table (3) shows the comparison between the female and male patients regarding serum leptin level. The mean value of serum leptin level in the female patients was 10.95 ng/ml SEM 0.08ng/ml and the range was 0.06 –62.07 ng/ml. While in the male references the mean value of serum leptin level was 13.40 ng/ml, SEM was 0.02 ng/ml and the range was 0.83 –56.02 ng/ml.

Table (4) shows the comparison between the reference and patient groups regarding height. The reference group the mean value was 167.778 cm, SEM was 0.02 and the range was 155-183 cm. While in the mean value of height in patients group was 165.92 cm, SEM was 0.003 and the range was 145-186 cms.

There was no significant difference in height between patient and reference group.

Table (5) and figure (3) show the comparison between the reference and patient groups regarding weight. The mean value of weight in reference group was 74.16 kg, SEM was 0.06 and the range was 52-125 kg while in the patients the mean value was 56.04 kg, SEM was 0.003 and the range was 36-90 kg.

There was a statistically significant difference in weight between patient and reference groups ($P < 0.001$).

Table (6) and figure (4) show the comparison between the reference and patient groups regarding body mass index (B.M.I). The mean value of B.M.I in reference group was 26.10, SEM was 0.02 and the range was 17.3 – 42.2. While in the patient group the mean value was 20.36, SEM was 0.0011 and the range was 16.2 – 27.9. There was a statistically significant decrease in B.M.I in patients when compared with the reference group.

Table (7) shows the difference between the reference and patient groups regarding blood urea levels. The mean value of blood urea was 27.05 mg/dl in reference group, SEM was 0.02 and the range was 14-40 mg/dl. While in the patients group the mean value was 145.500 mg/dl, SEM was 0.01 and the range was 95-120 mg/dl.

There was a statistically significant increase in blood urea in patients than in controls ($P < 0.001$).

Table (8) shows the comparison between the reference and patient groups regarding serum creatinine. The mean value in the reference group was 0.79 mg/dl, SEM was 0.0004 and the range was 0.5-1.1 mg/dl. While in the patients group the mean value was 10.73 mg/dl, SEM was 0.0008 and the range was 6.6 – 15 mg/dl.

There was a statistically significant increase in serum creatinine in patients than in controls ($P < 0.001$).

Table (9) and figure (5) shows the comparison between the reference and patients group regarding serum albumin. The mean value in the reference group was 4.58 mg/dl, SEM was 0.0007 and the range was 4.3 –5 g/dl. While in the patients group the mean value was 3.69 g/dl, SEM was 0.0003 and the range was 2.7-5 g/dl. There was a statistically significant decrease in serum albumin in the patients group ($P< 0.001$).

Table (10) and figure (6) shows the comparison between the reference and patients group regarding serum cholesterol. The mean value in the reference group was 105.00 mg/dl, SEM was 0.10 mg/dl and the range was 45-195. While in the patient group the mean value was 219.50 mg/dl, SEM was 0.02 mg/dl and the range was 150-350 mg/dl.

There was a statistically significant increase in the serum cholesterol in the patient group ($P < 0.001$).

Table (11) shows a comparison between the reference and patients group regarding blood hemoglobin level. The reference group the mean was 13.25 g/dl, SEM was 0.0038 g/dl and the range was 7.5-12% g/dl.

While the mean value in the patient group was 9.68 g/dl, SEM was 0.0005 g/dl and the range was 11.2-15.5 g/dl.

There statistically significant decrease in the blood hemoglobin level in the patient group ($P < 0.001$).

Table (12) and figure (7) shows a comparison between the reference and patients group regarding lymphocyte count the mean value in the reference group was 31.33%, SEM was 0.01%and the range 22-49%. While in the patient group the mean was 26.74%, SEM was 0.0031% and the range was 13-45%.

There was a statistically significant decrease in the lymphocytic count % in the patients group ($P < 0.05$).

Table (13) and figure (8) shows the comparison between the reference and patient groups regarding serum leptin level. The mean value of serum leptin level in the reference group was 6.94 ng/ml, SEM was 0.03 and the range was 0.17-55.32 ng/ml. While in the patient group the mean value was 12.27 ng/ml, SEM was 0.007 ng/ml and the range was 0.065-62.07 ng/ml.

There was non statistically significant difference in leptin level between reference and patient group.

Table (14) and figure (9) shows the comparison between the reference group after exclusion of 7 obese subject and patient group regarding leptin level. The mean value of the leptin level in the reference group 1.11 ng/ml SEM 0.009 was and the range 0.17--3.93 was ng/ml.

While in the patient group the mean value was 12.27 ng/ml, SEM was 0.007 ng/ml and the range was 0.06- 62.07 ng/ml.

There was statistically significant increase in the leptin level in the patient group when compared with the reference group ($P < 0.05$).

Table (15) and figure (10) shows the comparison between the reference group after exclusion of 7 obese subject and patient group with negative anorexia regarding leptin level. The mean value of the serum leptin level in the reference group 1.11 ng/ml SEM was 0.007 and the range was 0.17-3.93 ng/ml. While in the patient group the mean value was 2.06 ng/ml, SEM was 0.007 ng/ml and the range was 0.0650-12.46 ng/ml.

There was non statistically significant difference between in the patient group and the reference group ($P > 0.05$).

Table (16) and figure (11) shows the comparison between the reference group after exclusion of 7 obese subject and patient group with positive anorexia regarding leptin level. The mean value of the leptin level in the reference group 1.1195 ng/ml SEM 0.009 was and the range was 0.17- 3.93 ng/ml. While in the patient group the mean value was 19.08 ng/ml, SEM was 0.02 ng/ml and the range was 0.06 – 62.07 ng/ml.

There was statistically significant increase in the leptin level in the patient group with positive anorexia when compared with the reference group ($P < 0.001$).

Table (17) shows a correlation between lymphocytic percentage with age, duration of dialysis, height, weight, B.M.I, leptin, urea, creatinine, albumin cholesterol in the patient group.

There is a non significant negative correlation between lymphocytic percentage and age r = -0.[illegible] (P > 0.05).

There is a significant negative correlation between lymphocytic percentage and duration of dialysis r = -0.315 (P < 0.05).

There is a non significant negative correlation between lymphocytic percentage and height r = -0.041 (P > 0.05).

There is a significant positive correlation between lymphocytic percentage and weight r = 0.296 (P < 0.05).

There is a significant positive correlation between lymphocytic percentage and B.M.I r = 0.428 (P < 0.05).

There is a significant negative correlation between lymphocytic percentage and serum leptin level r = -0.225 (P < 0.05).

There is a non significant positive correlation between lymphocytic percentage and blood urea level r = 0.[illegible] (P > 0.05).

There is a non significant positive correlation between lymphocytic percentage and serum creatinine level r = 0.164 (P> 0.05).

There is a significant positive correlation between lymphocytic percentage and serum albumin level $r = 0.516$ ($P < 0.05$).

There is a significant positive correlation between lymphocytic percentage and serum cholesterol level $r = 0.294$ ($P < 0.05$).

Table (18) shows a correlation between serum cholesterol level and age, duration of dialysis height, weight, B.M.I, serum leptin level, blood urea level, serum creatinine level, serum albumin level, blood haemoglobin level and lymphocytic percentage in the patient group.

There is a non significant negative correlation between serum cholesterol level and age $r = -0.217$ ($P > 0.05$).

There is a non significant negative correlation between serum cholesterol level and duration of dialysis $r = -0.004$ ($p > 0.05$).

There is a non significant positive correlation between serum cholesterol level and height $r = 0.141$ ($p > 0.05$).

There is a non significant positive correlation between serum cholesterol level and weight $r = 0.141$ ($p > 0.05$).

There is a non significant positive correlation between serum cholesterol level and B.M.I $r = 0.115$ ($p > 0.05$).

There is a non significant negative correlation between serum cholesterol level and serum leptin level r = -0.249 (p> 0.05).

There is a significant positive correlation between serum cholesterol level and blood urea level r = 0.294 (p < 0.05).

There is a significant positive correlation between serum cholesterol level and serum creatinine level r = 0.533 (p < 0.05).

There is a significant positive correlation between serum cholesterol level and serum albumin level r = 0.341 (p < 0.05).

There is a significant positive correlation between serum cholesterol level and blood heamoglobin level r = 0.292 (p < 0.05).

There is a significant positive correlation between serum cholesterol level and serum lymphocytic percentage r = 0.294 (p <0.05).

Table (19) shows a correlation between serum albumin level and age, duration of dialysis, height, weight, B.M.I, serum leptin level, blood urea level, serum creatinine level, serum albumin level, blood hemaoglobin level, lymphocytie percentage in the patient group.

There is a non significant negative correlation between serum albumin level and age r =- 0.105 (p > 0.05).

There is a non significant negative correlation between serum albumin level and duration of dialysis $r = -0.215$ ($p > 0.05$).

There is a non significant negative correlation between serum albumin level and height $r = -0.045$ ($p > 0.05$).

There is a non significant positive correlation between serum albumin level and weight $r = 0.228$ ($p > 0.05$).

There is a significant positive correlation between serum albumin level and B.M.I. $r = 0.324$ ($p < 0.05$).

There is a significant negative correlation between serum albumin level and serum leptin level $r = 0.062$ ($p < 0.05$).

There is a non significant negative correlation between serum albumin level and blood urea level $r = -0.186$ ($p > 0.05$).

There is a non significant positive correlation between serum albumin level and serum creatinine level $r = 0.102$ ($p > 0.05$).

There is a significant positive correlation between serum albumin level and serum cholesterol level $r = 0.341$ ($p < 0.05$).

There is a non significant positive correlation between serum albumin level and blood heamoglobin level $r = 0.086$ ($p > 0.05$).

There is a significant positive correlation between serum albumin level and lymphocytic percentage r = 0.2?0 ($p < 0.05$).

Table (20) and figure (12, 13) shows a correlation between B.M.I and age, duration of dialysis, height, weight, serum leptin level, blood urea level, serum creatinine level, serum albumin level, serum cholesterol level, blood heamoglobin level and lymphocytic percentage in the reference and the patient groups.

There is a non significant negative correlation between BMI and age in the reference group r = -0.2?? ($p > 0.05$), while a non significant positive correlation r = -0.084 ($p > 0.05$) in the patient group.

There is a non significant negative correlation between B.M.I and duration of dialysis r = 0.274 ($p > 0.05$) in the patient group.

There is a non significant negative correlation between B.M.I and height in the reference group r = -0.050 ($p > 0.05$) and the same in the patient group, r=0.08584 ($p > 0.05$).

There is a significant positive correlation between B.M.I and weight in the reference group r = 0.965 ($p < 0.05$) and the same in the patient group r= 0.750 ($p < 0.05$).

There is a significant positive correlation between B.M.I and serum leptin level in the reference group r = 0.?82 ($p < 0.05$) while in the patient there is a significant negative correlation r = -0.605 ($p < 0.05$).

There is a non significant positive correlation between B.M.I and blood urea level in the references group r = 0.206 ($p > 0.05$) while in the patients group there is a non significant negative correlation r =-0.105 ($p > 0.05$).

There is a non significant negative correlation between B.M.I and serum creatinine level in the reference group r = -0.345 ($p > 0.05$) and the same in the patient group r = -0.244 ($p > 0.05$).

There is a non significant negative correlation between B.M.I and serum albumin level in the reference group r = -0.305 ($p > 0.05$) while in the patient group. There is a significant positive correlation r = 0.324 ($p < 0.05$).

There is a non significant positive correlation between B.M.I and serum cholesterol level in the references group r = 0.254 ($p > 0.05$) and the serum in the patient group r = 0.115 ($p > 0.05$).

There is a non significant negative correlation between B.M.I and blood haemoglobin level in the reference group r = -0.071 ($p > 0.05$) while in the patient group there is a non significant positive correlation r =0.053 ($p > 0.05$).

There is a non significant negative correlation between B.M.I and lymphocytic percentage in the reference group r = -0.023 ($p > 0.05$). While in the patient group there is a significant positive correlation r = 0.428 ($p < 0.05$).

Table (21) and figure (14, 15) shows a correlation between serum leptin level and age, duration of dialysis, height, weight, B.M.I, blood urea level, serum creatinine level, serum albumin level, serum cholesterol level, blood heamoglobin level and lymphocytic percentage in the reference and patient group.

There is a non significant positive correlation between serum leptin level and age in the reference group r = 0.388 ($p > 0.05$) and the same in the patient group r=0.127 ($p > 0.05$).

There is a non significant positive correlation between serum leptin level and duration of dialysis in the patient group r =0.230 ($p > 0.05$).

There is a non significant negative correlation between serum leptin level and height in the reference group r = -0.041 ($p > 0.05$) and the same in the patient group r = - 0.009 ($p > 0.05$).

There is a significant positive correlation between serum leptin level and weight in the reference group r = 0.730 ($p < 0.05$) while in the patient group there is a significant negative correlation r = 0.482 ($p<0.05$).

There is a significant positive correlation between serum leptin level and B.M.I in the reference group r = 0.782 ($p < 0.05$) while in the patient group there is a significant negative correlation r = -0.605 ($p<0.05$).

There is a non significant positive correlation between serum leptin level and blood urea level in the reference group $r = 0.206$ ($p > 0.05$) and the same in the patient group $r = 0.049$ ($p > 0.05$).

There is a non significant negative correlation between serum leptin level and serum creatinine level in the reference group $r = -0.268$ ($p > 0.05$) and the same in the patient group $r = -0.172$ ($p > 0.05$).

There is a non significant negative correlation between serum leptin level and serum albumin level in the reference group $r = -0.334$ ($p > 0.05$) while in the patient group there is significant negative correlation $r = 0.624$ ($p < 0.05$).

There is significant positive correlation between serum leptin level and serum cholesterol level in the reference group $r = 0.476$ ($p < 0.05$) while in the patient group there is a non significant negative correlation $r = -0.249$ ($p > 0.05$).

There is a non significant negative correlation between serum leptin level and blood heamoglobin level in the reference group $r = -0.210$ ($p > 0.05$) and the same in the patient group $r = -0.122$ ($p > 0.05$).

There is a non significant negative correlation between serum leptin level and lymphocytic percentage in the reference group r=-0.122 ($p > 0.05$) while in the patient group there is a significant negative correlation r = -0.725 ($p < 0.05$).

Table (2): Comparison between female and male references regarding serum leptin level.

Leptin / Sex	Number of observation	Mean value ± SEM	Range	Z	p	Significant
Female	11	8.59 ± 0.13	0.12-55.32	0.860	> 0.05	Non significant
Male	7	3.81 ± 0.12	0.11-15.37			

There is a non significant difference in serum leptin level between female and male references.

Table (3): Comparison between female and male patients regarding serum leptin level.

Leptin / Sex	Number of observation	Mean value ± SEM	Range	Z	p	Significant
Female	23	10.95 ± 0.08	0.06-62.07	- 1.022	> 0.05	Non significant
Male	27	13.40 ± 0.02	0.83-56.02			

There is a non significant difference in serum leptin level between female and male patients.

Table (4): Comparison between reference and patient groups regarding height (meter).

Height / Groups	Range	Mean	±SEM	t	p
Reference	155-183	[illegible]	0.02	0.8044	> 0.05
Patient	145-186	[illegible]	0.003		

There is a statistically a[illegible] significant difference in height between patient and reference groups.

Table (5): Comparison between patient and reference groups regarding weight (kg).

Weight / Groups	*Range*	*Mean*	*±SEM*	*t*	*p*
Reference	52-125	74.16	0.06	4.7180	<0.001
Patient	36-90	56.04	0.003		

There is a statistically highly significant decrease in weight of the patients when compared with the references group.

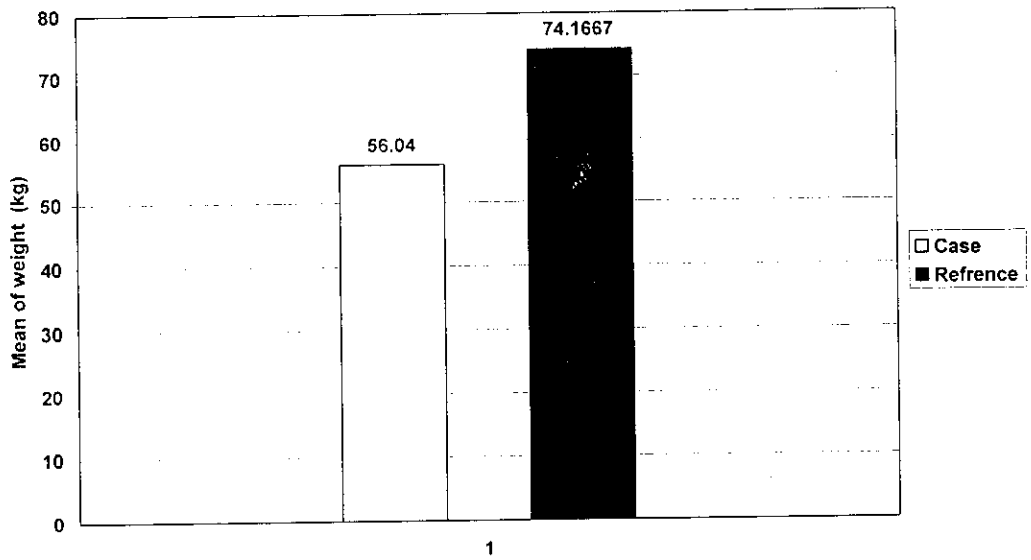

Fig. (3): Mean value of weight in both patient and refrence groups

Table (6): Comparison between patient and reference groups regarding body mass index (B.M.I.) kg/m^2.

B.M.I. / Group	Range	Mean	±SEM	T	p
Reference	17.3-42.2	26.1	0.02	4.5179	< 0.001
Patient	16.2-27.9	20.3	0.001		

There is a statistically highly significant decrease in BMI in patients when compared with the reference group.

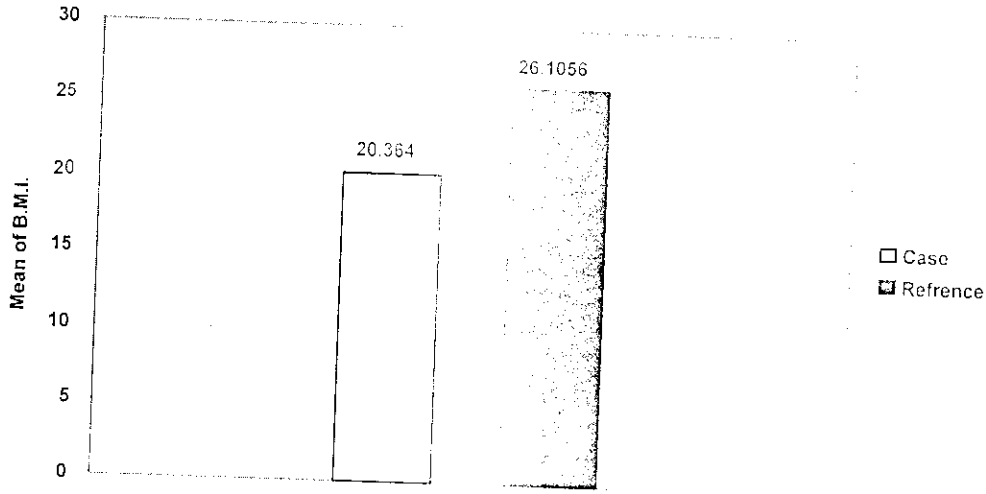

Fig. (4): Mean value of B.M.I. between patient and reference groups

Table (7): Comparison between patient and reference groups regarding blood urea levels (mg/dl).

Urea / Groups	Range	Mean	±SEM	t	p
Reference	14-40	27.05	0.02	-14.6631	< 0.001
Patient	95-210	145.50	0.01		

There is a statistically highly significant increase in the blood urea levels in patients when compared with the reference group.

Table (8): Comparison between reference and patients groups regarding serum creatinine levels (mg/dl).

Creatinine / Groups	Range	Mean	SEM	t	p
Reference	0.5-1.1	0.79	0.0004	-18.6804	< 0.001
Patient	6.6-15	10.73	0.0008		

There is a statistically highly significant increase in the serum creatinine levels in patients when compared with the reference group.

Table (9): Comparison between reference and patient groups regarding serum albumin levels (g/dl).

Albumin / Groups	Range	Mean	SEM	t	p
Reference	4.3-5	4.85	0.0007	5.7795	<0.001
Patient	2.7-5	3.69	0.0002		

There is a statistically highly significant decrease in the serum albumin levels in the patients when compared with reference group.

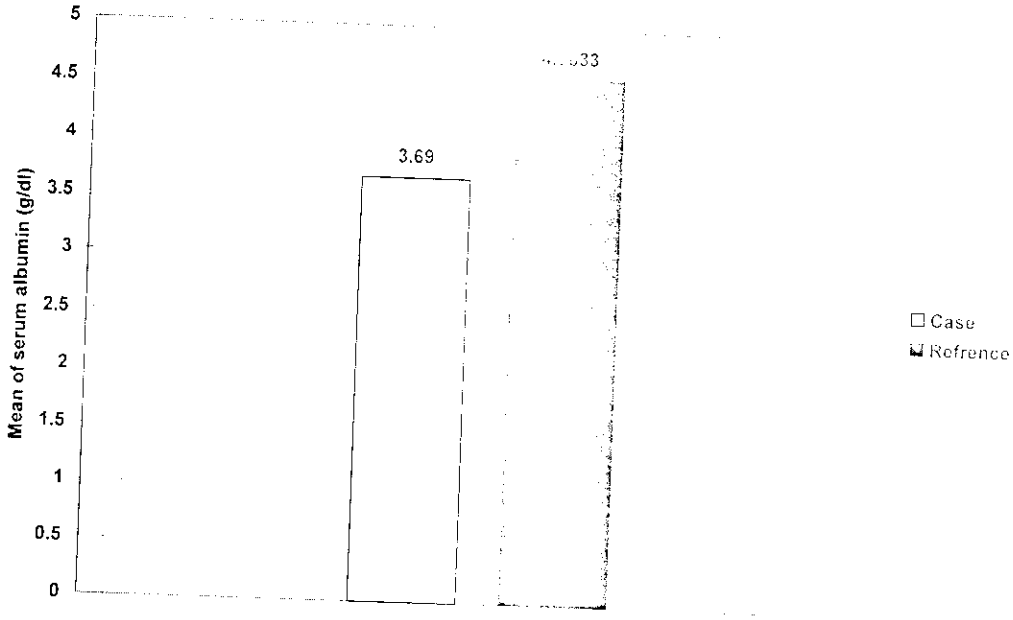

Fig. (5): Mean value of serum albumin between refrence and patient groups.

Table (10): Comparison between reference and patients groups regarding serum cholesterol levels (mg/dl).

Cholesterol / Groups	Range	Mean	SEM	t	p
Reference	45-195	105.00	0.10	8.8167	<0.001
Patient	150-350	219.50	0.02		

There is a statistically highly significant increase in the serum cholesterol levels in the patients when compared with the reference group.

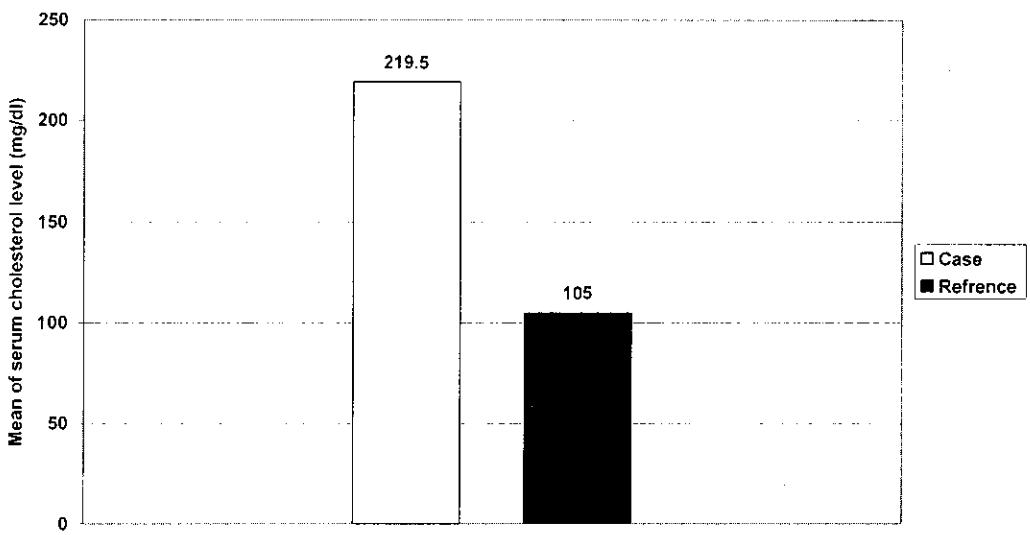

Fig. (6): Mean value of serum cholesterol in both refrence and patient groups.

Table (11): Comparison between reference and patients groups regarding blood hemoglobin levels (g/dl).

Hemoglobin / Groups	Range	Mean	SEM	t	p
Reference	11.7-15.3	[illegible]	0.003	10.2365	< 0.001
Patient	7.5-12	[illegible]	0.0005		

There is a statistically highly significant decrease in the blood heamoglobin levels in the patients when compared with the reference group.

Table (12): Comparison between reference and patient groups regarding the lymphocytic percentage.

Lymphocyte / Groups	Range	Mean	SEM	t	p
Reference	22-49	31.33	0.01	2.2041	< 0.05
Patient	13-45	26.74	0.003		

There is a statistically significant decrease in the lymphocytic percentage in the patients when compared with the reference group.

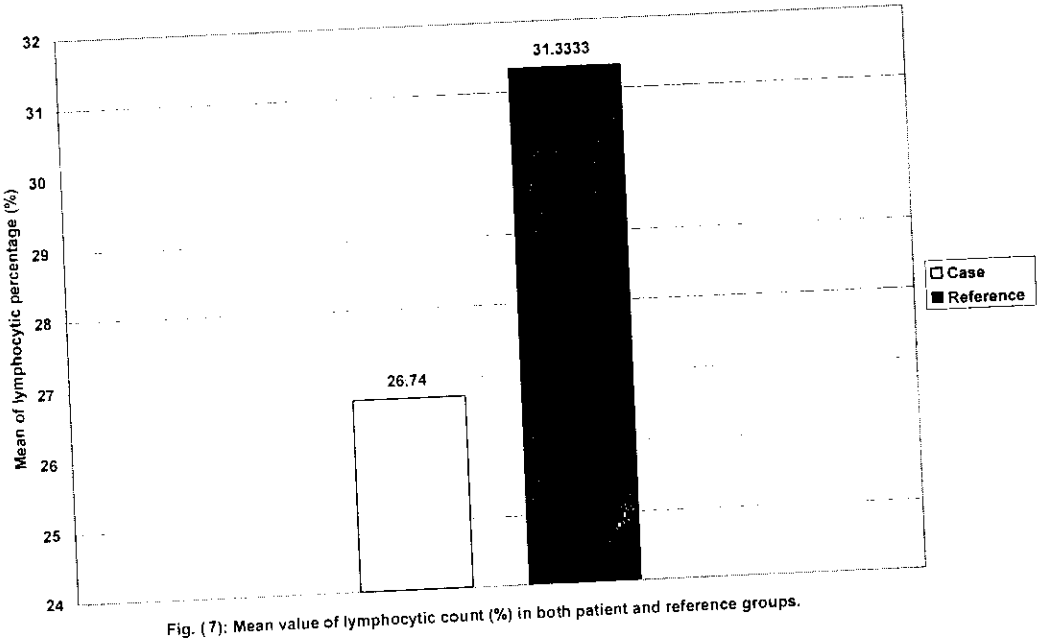

Fig. (7): Mean value of lymphocytic count (%) in both patient and reference groups.

Table (13): Comparison between [illegible] group and patients group regarding serum leptin level (ng/ml).

Leptin / groups	Number of observation	Mean value ± SEM	[illegible]ange	Z	P	Significant
Group I (reference)	18	6.94 ± 0.03	[illegible]-55.32	-0.507	> 0.05	Non significant
Group II (patient)	50	12.27 ± 0.007	[illegible]-2.07			

There is a statistically non significant difference is serum leptin level between patients and reference group.

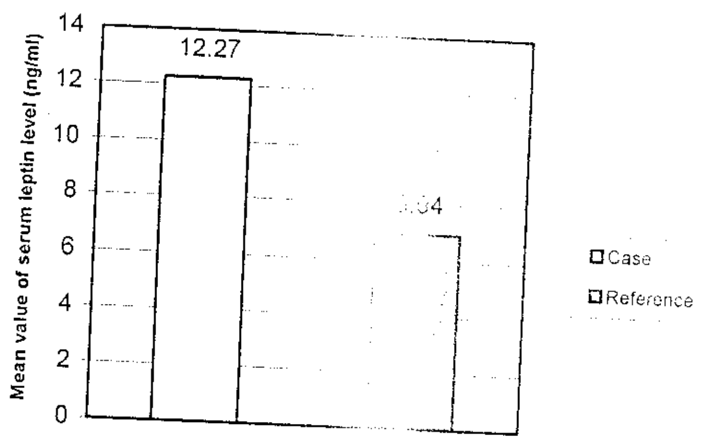

Fig. (8) Mean value of serum leptin level in [illegible] and reference groups.

Table (14): Comparison between reference group after exclusion of 7 obese references and patient group regarding leptin level ng/ml.

Leptin / Groups	Number of observation	Mean value ± SEM	Range	Z	p	Significant
Group I (reference)	11	1.11 ± 0.009	0.17-3.93	-2.035	<0.05	Significant
Group II (patient)	50	12.27 ± 0.007	0.06-62.07			

There is a statistically significant increase in the serum leptin level in the patients when compared with the reference group.

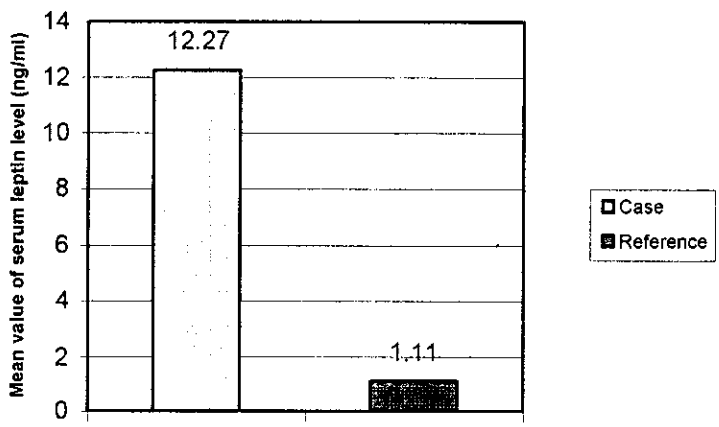

Fig. (9) Mean value of serum leptin level in both patient and reference groups after exclusion of 7 obese references

Table (15): Comparison between reference group after exclusion of 7 obese references and patient group with negative anorexia regarding serum leptin level (ng/ml).

Leptin / Groups	Number of observation	Mean value ± SEM	Range	Z	p	Significant
Group I (reference)	11	1.11 ± 0.009	0.77-3.93	0.041	>0.05	Non significant
Group II (patient)	20	2.06 ± 0.007	1.46			

There is a statistically non significant difference in serum leptin level between patients with negative anorexia and reference group.

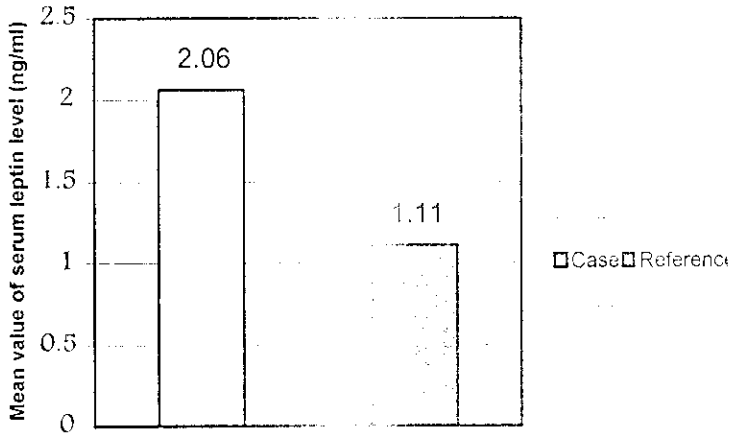

Fig. (10) Mean value of serum leptin level in both patient with negative anorexia and reference groups after exclusion of 7 obese references

Table (16): Comparison between reference group after exclusion of 7 obese references and patient group with positive anorexia regarding serum leptin level (ng/ml).

Leptin groups	Number of observation	Mean value ± SEM	Range	Z	p	Significant
Group I (reference)	11	1.11 ± 0.009	0.17-3.93	-3.222	<0.001	Highly significant
Group II (patient)	30	19.08 ± 0.02	0.06-62.07			

There is a statistically highly significant increase in the serum leptin level in the patients with positive anorexia when compared with reference group.

Fig. (10) Mean value of serum leptin level in both patient with negative anorexia and reference groups after exclusion of 7 obese references

Fig. (10) Mean value of serum leptin level in both patient with negative anorexia and reference groups after exclusion of 7 obese references

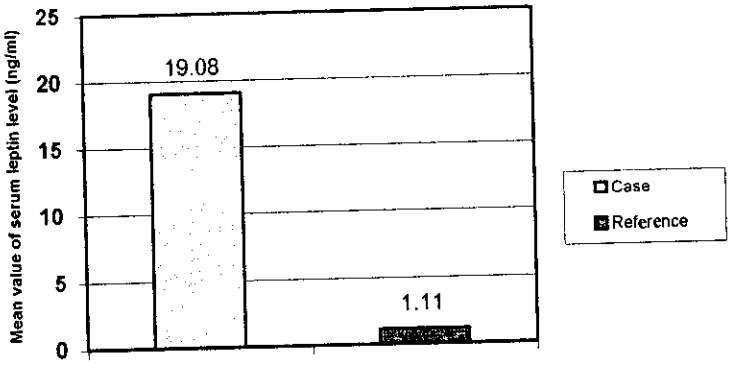

Fig. (11) Mean value of serum leptin level in both patient with positive anorexia and reference groups after exclusion of 7 obese references

Table (17): Correlation of lymphocytic percentage with all other parameters in the patients group.

Parameters	*r*	*P*	*Result*
Age (years)	-0.149		Non significant, negative correlation
Duration of dialysis (years)	-0.315		Significant, negative correlation
Height (meter)	-0.041		Non significant, negative correlation
Weight (kg)	0.296		Significant, positive correlation
B.M.I. kg/m^2	0.428		Significant, positive correlation
Serum leptin level (ng/ml)	-0.725		Significant, negative correlation
Blood urea level (mg/dl)	0.021		Non Significant, positive correlation
Serum creatinine level (mg/dl)	0.164		Non Significant, positive correlation
Serum albumin level (g/dl)	0.516		Significant, positive correlation
Serum cholesterol level (mg/dl)	0.294		Significant, positive correlation

Table (18): Correlation of serum cholesterol levels with all other parameters in the patient group.

Parameters	*r*	*p*	*Result*
Age (years)	-0.217	> 0.05	Non significant, negative correlation
Duration of dialysis (years)	-0.004	> 0.05	Non significant, negative correlation
Height (meter)	0.141	> 0.05	Non significant, positive correlation
Weight (kg)	0.141	> 0.05	Non significant, positive correlation
B.M.I. kg/m^2	0.115	> 0.05	Non significant, positive correlation
Serum leptin level (ng/ml)	-0.249	> 0.05	Non significant, negative correlation
Blood urea level (mg/dl)	0.294	< 0.05	Significant, positive correlation
Serum creatinine level (mg/dl)	0.533	< 0.05	Significant, positive correlation
Serum albumin level (g/dl)	0.341	< 0.05	Significant, positive correlation
Blood hemoglobin level (mg/dl)	0.292	< 0.05	Significant, positive correlation
Lymphocytic percentage (%)	0.294	< 0.05	Significant, positive correlation

Table (19): Correlation of serum albumin levels (gm/dl) with all other parameters in the patient group.

Parameters	*r*	*P*	*Result*
Age (years)	-0.102	>0.05	Non significant, negative correlation
Duration of dialysis (years)	-0.215	>0.05	Non significant, negative correlation
Height (meter)	-0.045	>0.05	Non significant, negative correlation
Weight (kg)	0.228	>0.05	Non significant, positive correlation
B.M.I. kg/m^2	0.324	<0.05	Significant, positive correlation
Serum leptin level (ng/ml)	-0.624	<0.05	Significant, negative correlation
Blood urea level (mg/dl)	-0.186	>0.05	Non significant, negative correlation
Serum creatinine level (mg/dl)	0.102	>0.05	Non significant, positive correlation
Serum cholesterol level (mg/dl)	0.341	<0.05	Significant, positive correlation
Blood hemoglobin level (mg/dl)	0.086	>0.05	Non significant, positive correlation
Lymphocytic percentage (%)	0.516	<0.05	Significant, positive correlation

Table (20): Correlation of body mass index and all other parameters in patients and reference groups.

Parameter	*Reference*			*Patient*		
	r	p	Results	r	p	Results
Age (years)	0.307	> 0.05	Non significant, Positive correlation	-0.084	> 0.05	Non significant, Negative correlation
Duration of dialysis (years)				- 0.274	> 0.05	Non significant, Negative correlation
Height (meter)	-0.501	> 0.05	Non significant, Negative correlation	-0.085	> 0.05	Non significant, Negative correlation
Weight (kg)	0.965	< 0.05	significant, positive correlation	0.750	< 0.05	significant, positive correlation
Serum leptin level (ng/ml)	0.782	< 0.05	significant, positive correlation	-0.605	< 0.05	Significant, Negative correlation
Blood urea level (mg/dl)	0.206	> 0.05	Non significant, Positive correlation	-0.105	> 0.05	Non significant, Negative correlation
Serum creatinine level (mg/dl)	-0.345	>0.05	Non significant, Negative correlation	-0.244	> 0.05	Non significant, Negative correlation
Serum albumin level (g/dl)	-0.305	> 0.05	Non significant, Negative correlation	0.324	< 0.05	significant, positive correlation
Serum cholesterol level (mg/dl)	0.254	> 0.05	Non significant, Positive correlation	0.115	> 0.05	Non significant, positive correlation
Blood hemoglobin level (mg/dl)	-0.071	> 0.05	Non significant, Negative correlation	0.053	> 0.05	Non significant, positive correlation
Lymphocytic percentage (%)	-0.023	> 0.05	Non significant, Negative correlation	0.428	< 0.05	Significant, positive correlation

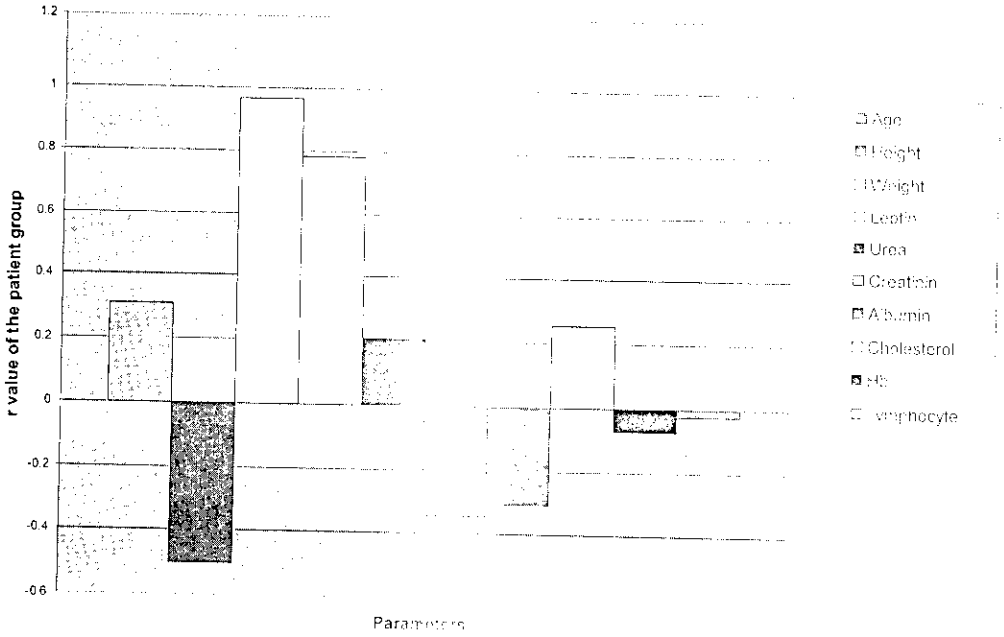

Fig. (12): Shows the correlation between [illegible] group and all other parameters regarding Body Mass Index (BMI).

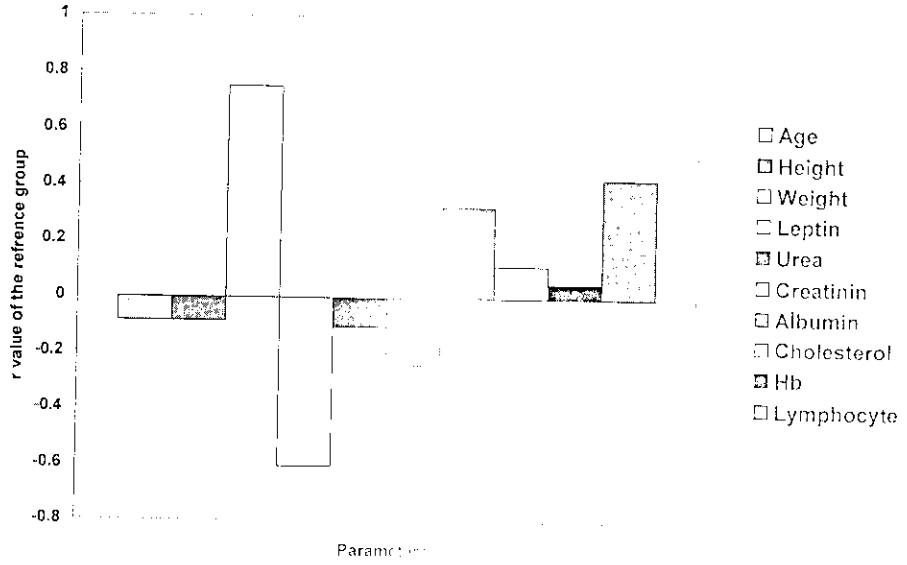

Fig. (13): Shows the correlation between [illegible] patients group and all other parameters regarding Body Mass Index (BMI).

Table (21): Correlation of serum leptin level (ng/ml) and all other parameters in patients and reference groups.

Parameter	Reference			Patient		
	r	p	Results	r	p	Results
Age (years)	0.388	> 0.05	Non significant, Positive correlation	0.127	> 0.05	Non significant, Positive correlation
Duration of dialysis (years)				0.230	> 0.05	Non significant, Positive correlation
Height (meter)	-0.041	> 0.05	Non significant, negative correlation	-0.009	> 0.05	Non significant, negative correlation
Weight (kg)	0.730	< 0.05	Significant, Positive correlation	-0.482	< 0.05	Significant, Negative correlation
B.M.I. kg/m^2	0.782	< 0.05	Significant, Positive correlation	-0.605	< 0.05	Significant, Negative correlation
Blood urea level (mg/dl)	0.206	> 0.05	Non Significant, Positive correlation	0.049	> 0.05	Non significant, Positive correlation
Serum creatinine level (mg/dl)	-0.268	>0.05	Non significant, negative correlation	-0.172	> 0.05	Non significant, negative correlation
Serum albumin level (g/dl)	-0.334	> 0.05	Non significant, negative correlation	-0.624	< 0.05	Significant, Negative correlation
Serum cholesterol level (mg/dl)	0.476	< 0.05	Significant, positive correlation	-0.249	> 0.05	Non significant, Negative correlation
Blood hemoglobin level (mg/dl)	-0.210	> 0.05	Non significant, Negative correlation	-0.122	> 0.05	Non significant, Negative correlation
Lymphocytic percentage (%)	-0.121	> 0.05	Non significant, Negative correlation	-0.725	< 0.05	Significant, Negative correlation

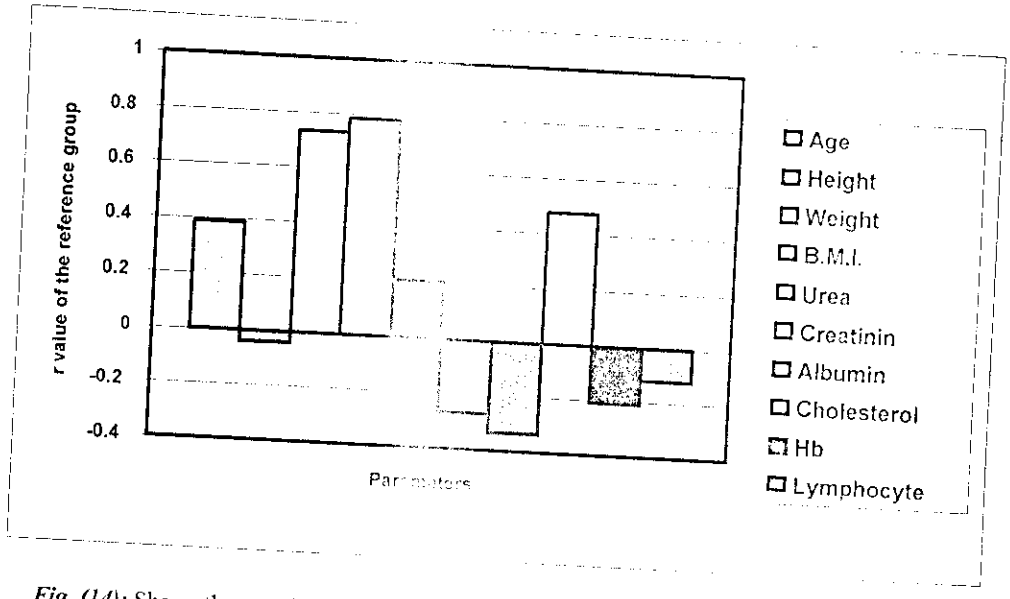

Fig. (14): Shows the correlation between serum leptin level and all other parameters in reference group.

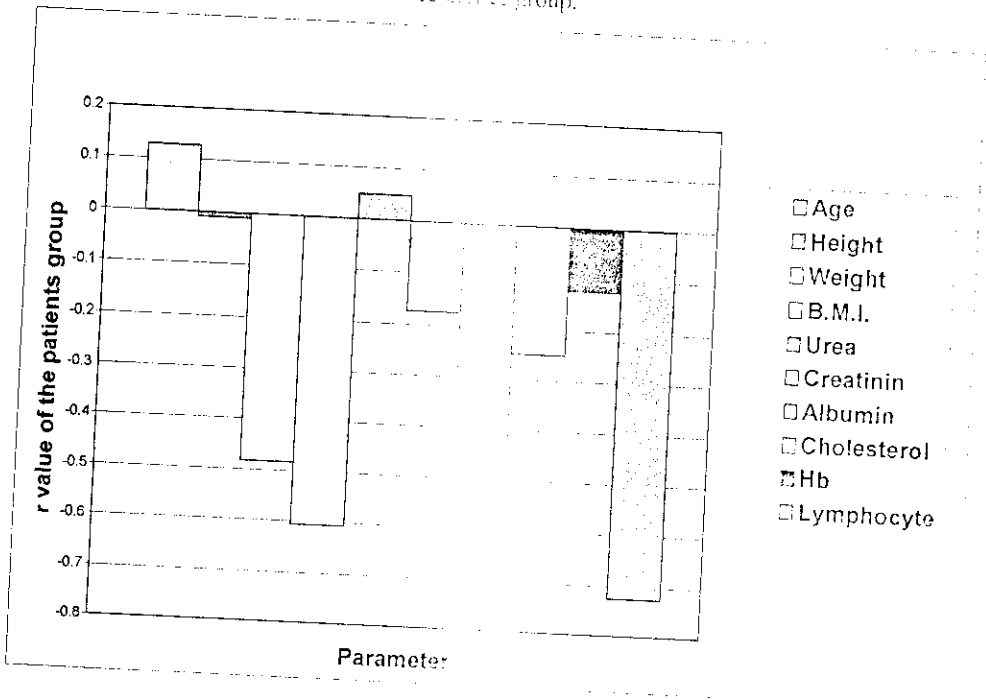

Fig. (15): Shows the correlation between serum leptin level and all other parameters in the patients group.