RESULTS

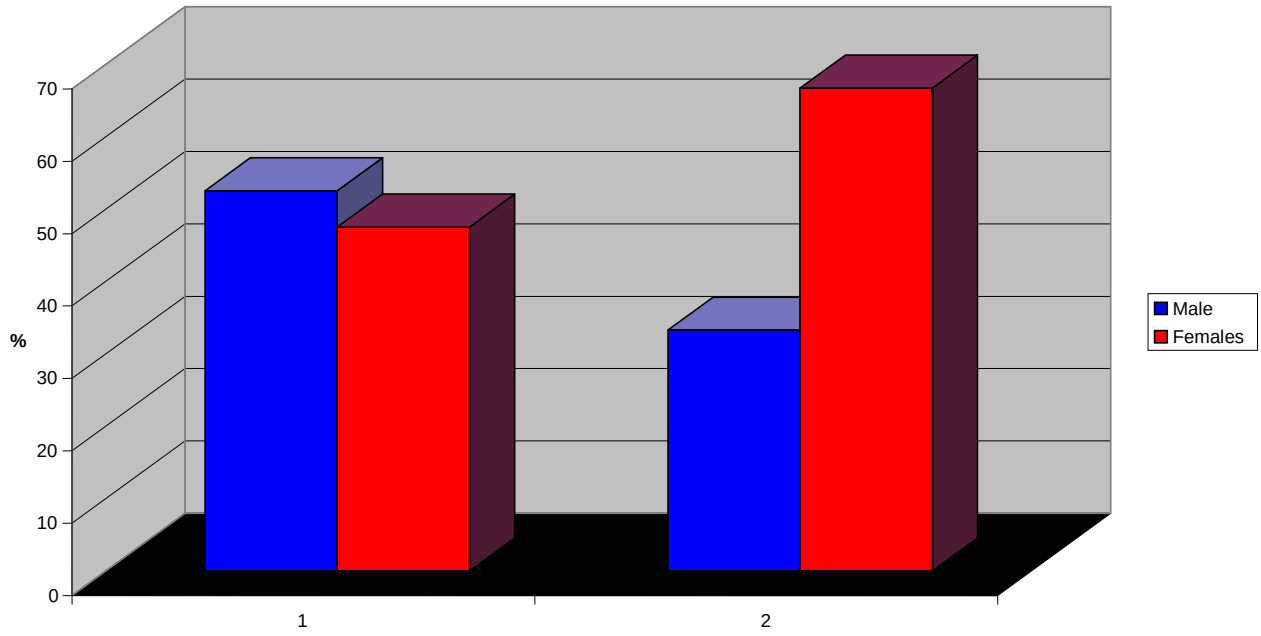
Forty cases with neonatal jaundice were included in this study and fifteen healthy controls.

Of the Forty patients 19 cases were females, and 21 cases were males. Of the Fifteen controls 10 were females and 5 were males

Table (5): distributions of the study groups according to sex

Study groups / Sex	Patients		Control		Total	
	No	%	No	%	No	%
Male	21	52.5	5	33.3	26	47.3
Females	19	47.5	10	66.7	29	52.7
Total	40	100.0	15	100.0	55	100.0

Chart (13): distributions of the study groups according to sex

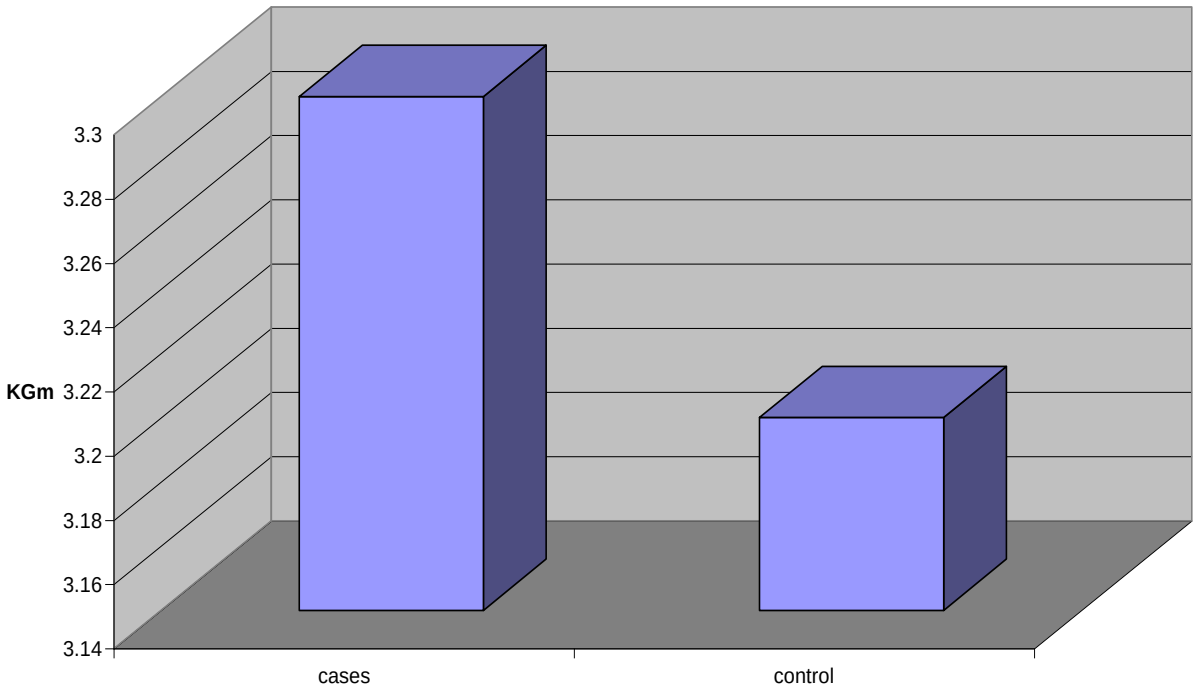


As regard weight: mean weight in patients was 3.3±0.4 (ranged from 2.7 to 4.2 kg) while in control mean weight was 3.2 ± 0.4 (ranged from 2.7 to 4.1 kg) Comparison between the 2 groups showed non significant difference (t = 0.8 and P >0.05)

Table (6): Range and mean ± standard deviation of Weight among study and control groups.

Study group	Weight (kg)		Test of significance	
	Range	t t SD	t	P-value
Patients	2.7 - 4.2	3.3 ± .4	.8	>0.05
Control	2.7 - 4.1	3.2 ± 0.4		

Chart (14) means of WT among study,control groups

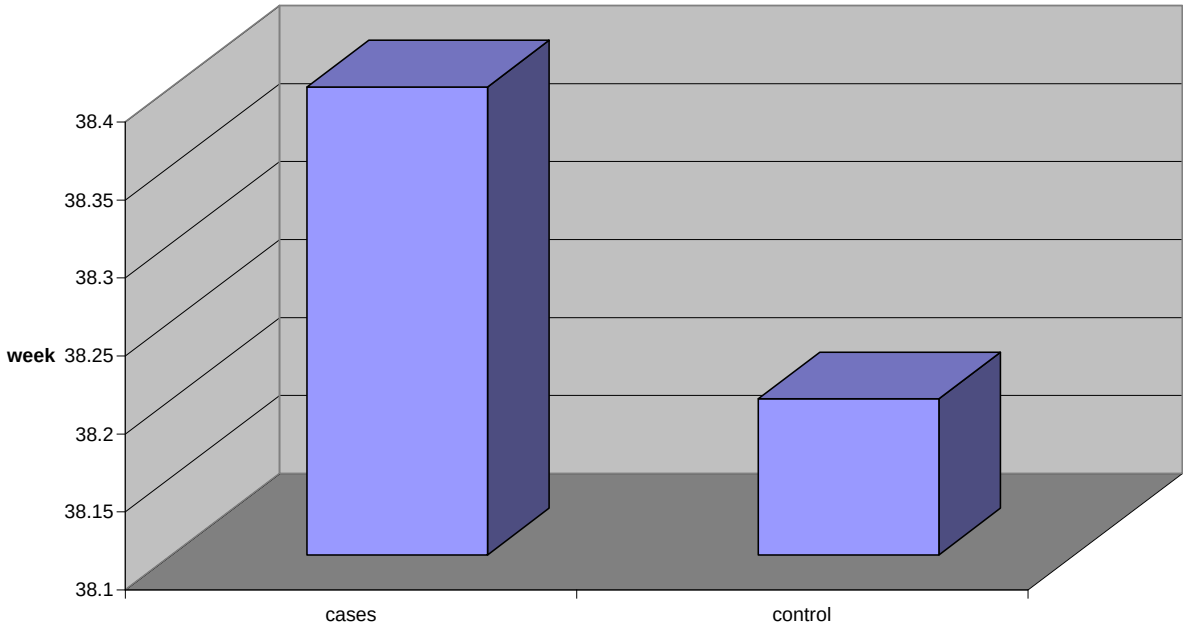


The mean gestational age in patients was 38.4 ± 1.5 weeks, which ranged from 37 to 42 weeks.The mean gestational age in control was 38.2 ± 1.5 weeks, which ranged from 36 to 41 weeks.Comparison between the two groups showed non significant difference (t = 0.44 and P >0.05**)**

Table (7): Range and mean ± standard deviation of gestational age among study and control groups.

Study group	Gestational age (wks)		Test of significance	
	Range	t t SD	T	P-value
Patients	37 - 42	38.4 ± 1.5	0.44	>0.05
Control	36 - 41	38.2 ± 1.5		

Chart (15) means of G. ages among study,control groups

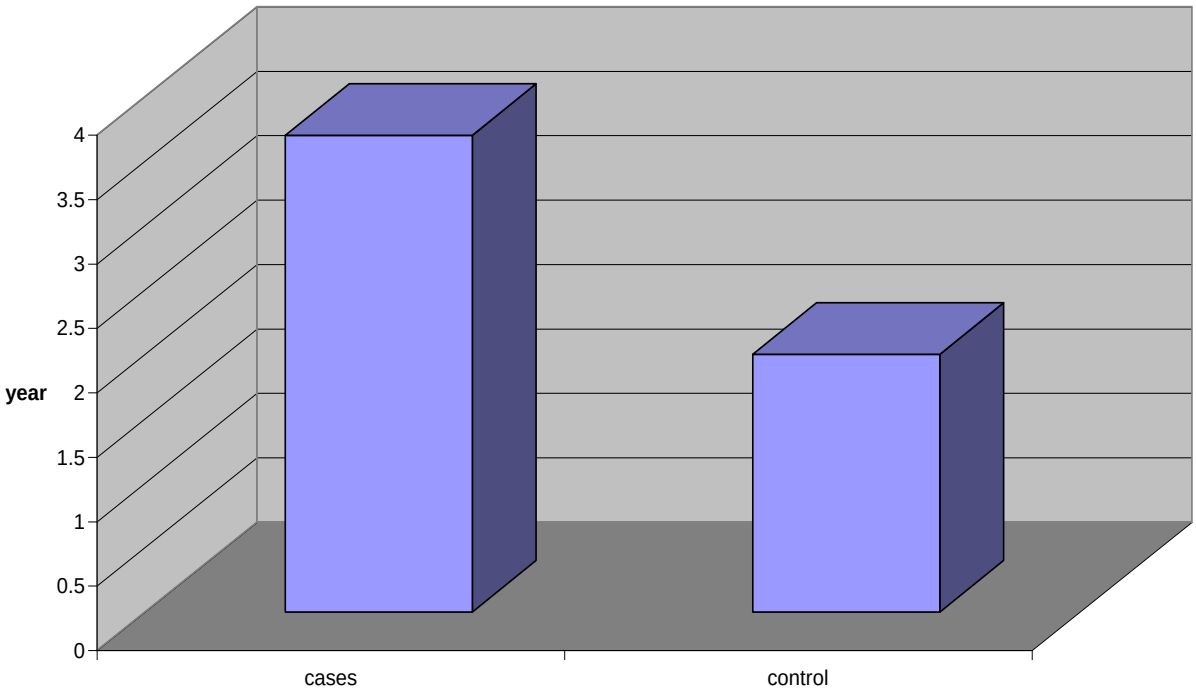


The mean post natal-age was 3.7 ±1.5 days, which ranged from 2 to 7 days **.**The mean post natal-age was 2 ± 1.3 days, which ranged from 1 to 5 days.Comparison between the two groups showed a highly significant difference (t = 4.4 and P <0.001)

Table (8): Range and mean ± standard deviation of age among study and control groups.

Study group	Age		Test of significance	
	Range	X- t SD	t	P-value
Patients	2 - 7	3.7 ± 1.5	4.4	<0.001
Control	1 5	2 ± 1.3		

Chart (16) means of ages among study,control groups

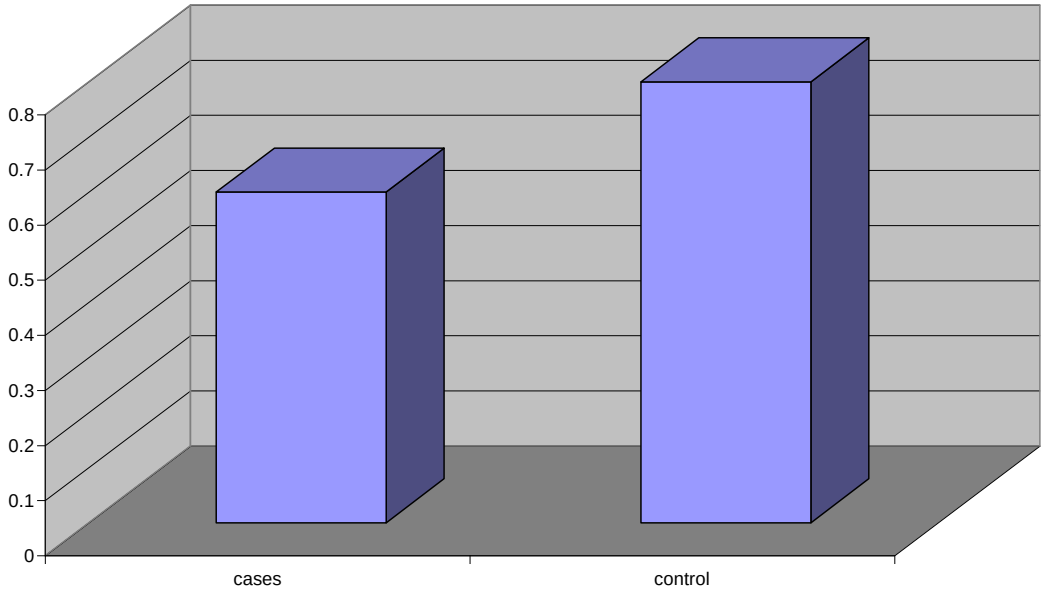


As regards C-reactive protein (CRP) in the total number of patients 3 were positive and 37 were negative ranging from 0-12 with Mean ± standard deviation 0.6±0.8 and in controls 2 were positive and ranging from 0-6 with Mean ± standard deviation 2.3±2.1 negative ranging this showed non significant difference between CRP in patient and control groups.

Table (9): Range and Mean ± standard deviation of CRP among study and control groups..

Study group	CRP		Test of significance	
	Range	Mean ± SD	t	P-value
Patients	0 - 12	0.6 ± 0.8	0.31	>0.05
Control	0 - 6	2.3 ± 2.1		

Chart (17) means of CRP among study,control groups

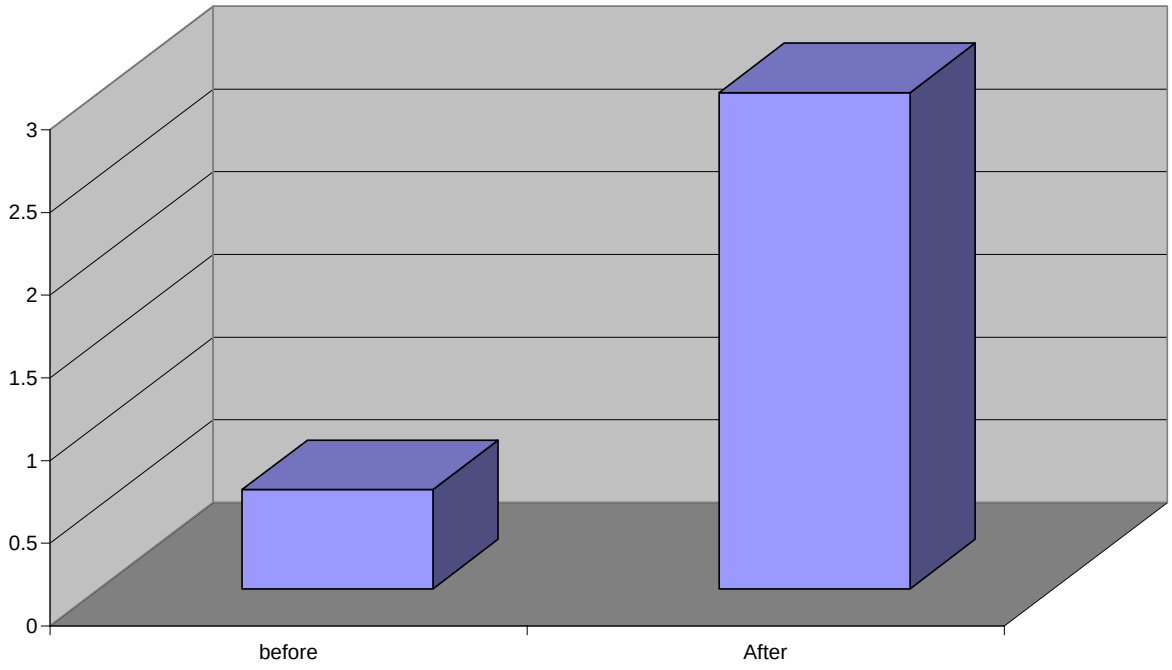


The changes in CRP in patients after phototherapy, of the 32 remained negative and 8 became positive which showed statistically significant difference between before and after phototherapy (pair dt 2.53 , P= <0.05)

Table (10): Means,standarded deviations (SD) of CRP before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
CRP	0.6±2.3	3±6.5	2.4±6	0.95	2.53	<0.05

Chart (18) Means of CRP before and after phototherapy among patients

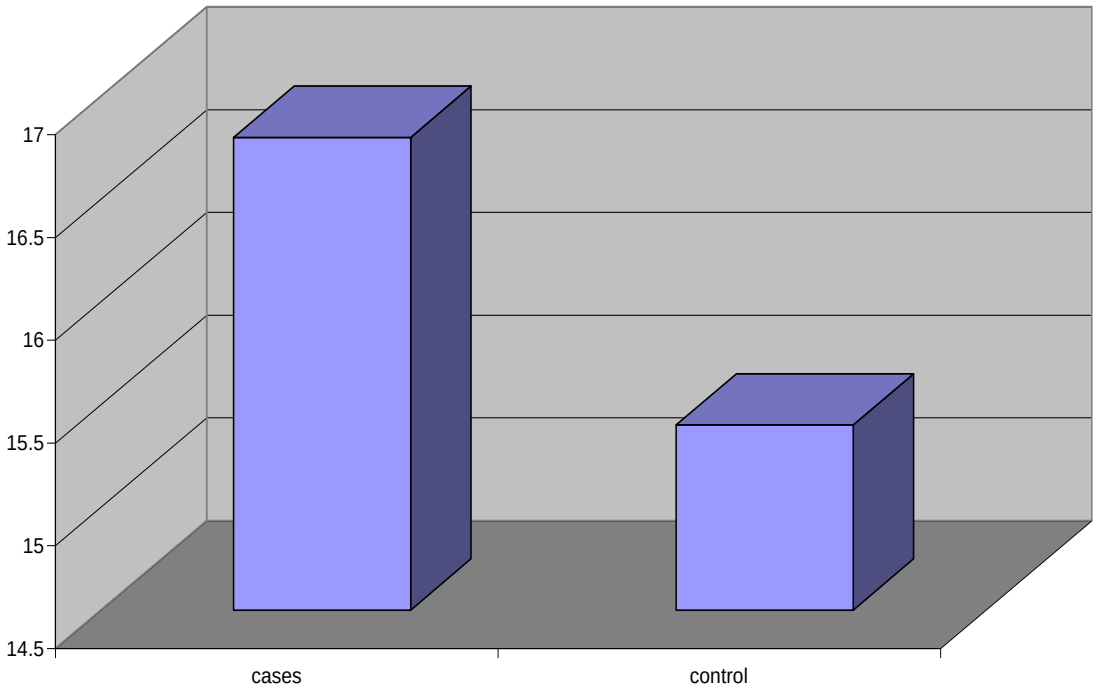


WBCs count in patients ranged from 11.2×10^3 to 24.4×10^3 with the mean of 16.8 ± 3.6. while , in controls WBCs count ranged from 10.1×10^3 to 22.3×10^3 with the mean of 15.4 ± 3.9 .which showed a non significant statistically difference where (t= 1.21 and P= >0.05)

Table (11): Range and Mean ± standard deviation of TLC among study and control groups.

Study group	TLC		Test of significance	
	Range	Mean ± SD	t	P-value
Patients	11.2 - 24.4	16.8 ± 3.6	1.21	>0.05
Control	10.1 - 22.3	15.4 ± 3.9		

Chart (19) means of TLC among study,control groups

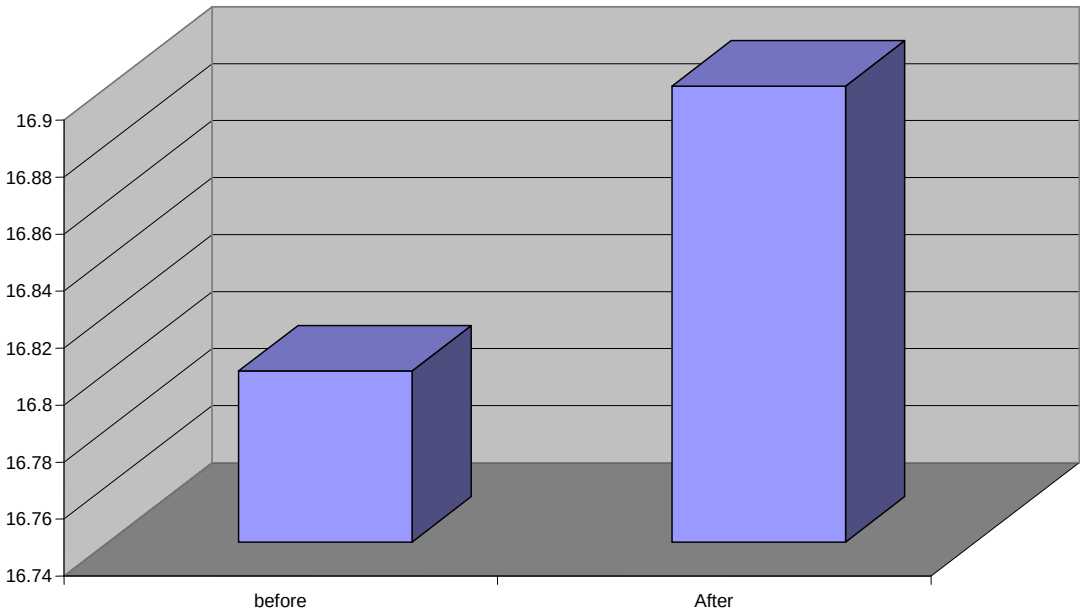


As regards WBCs count differences between cases before and after phototherapy, in Pre phototherapy WBCs count ranged from 16.8±3.6 and after phototherapy count ranged from 16.9±3.15 Comparison showed a non statistically significant difference where (paire dt= 0.17 and P=>0.05)

Table (12): Means,standarded deviations (SD) of TLC before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
TLC	16.8±3.6	16.9±3.15	0.1±3.8	0.6	0.17	>0.05

Chart (20) Means of TLC before and after phototherapy among patients

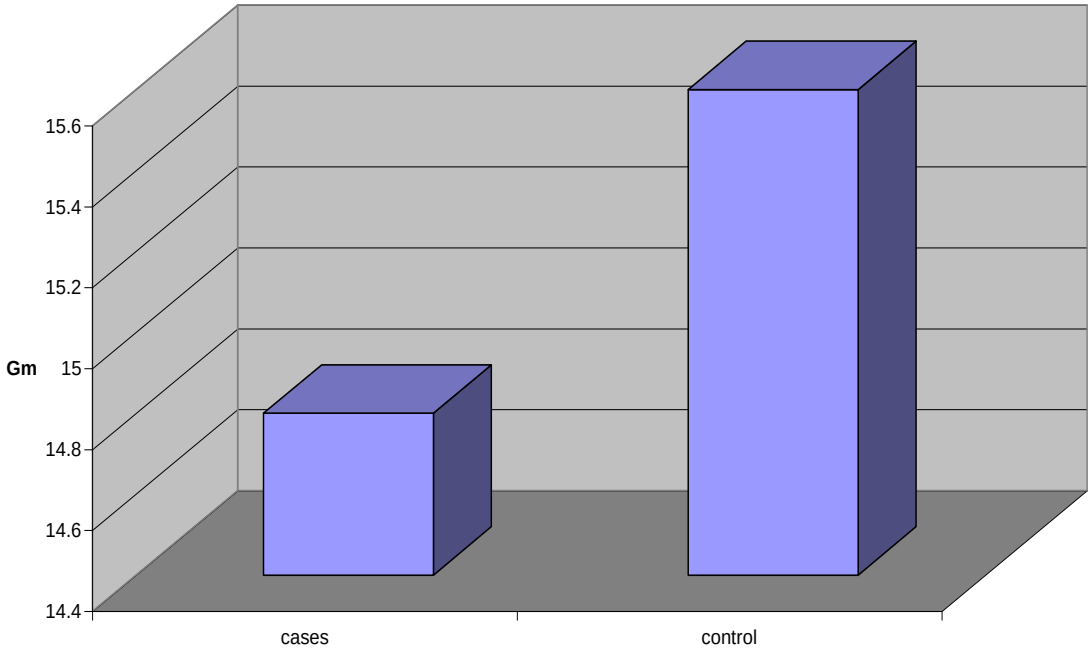


As regards Hemoglobin levels in patients it ranged from 9.7 mg/dl to 19.1 mg/dl with the mean of 14.8 ± 2.5 , while in controls Hemoglobin levels ranged from 13.2 mg/dl to 17.9 mg/dl with the mean of 15.6 ± 1.3 this comparison showed a non significant difference where (t= 1.5 and P= >0.05).

Table (13): Range and Mean ± standard deviation of Hb among study and control groups.

Study group	HB		T-test	
	Range	Mean ± SD	t	P-value
Patients	9.7 - 19.1	14.8 ± 2.5	1.5	>0.05
Control	13.2 - 17.9	15.6 ± 1.3		

Chart (21) means ofHB among study,control groups

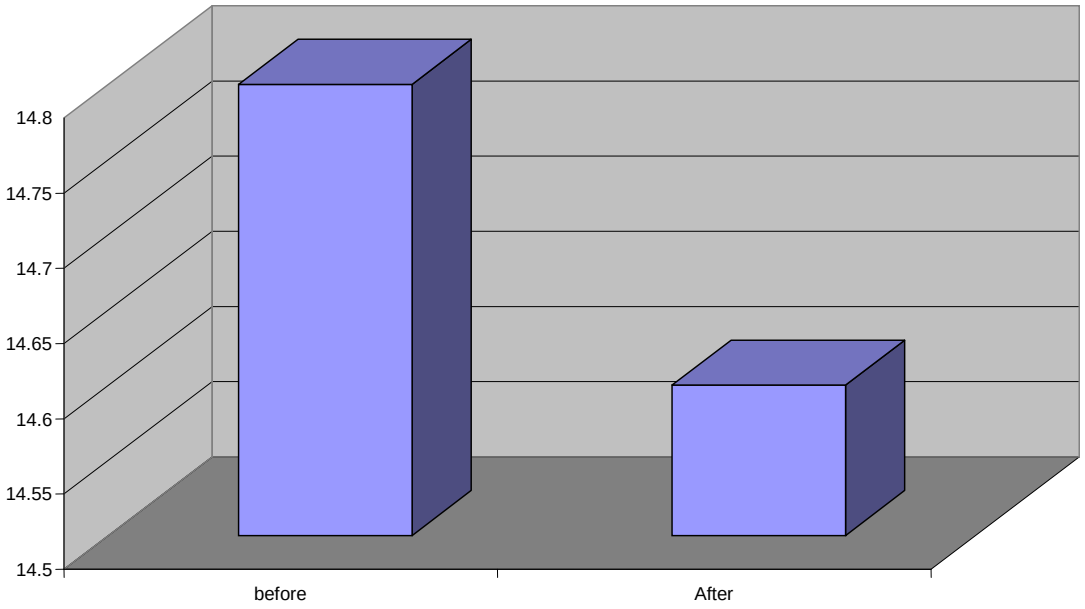


Hemoglobin levels in patients before and after phototherapy, first before phototherapy Hemoglobin levels 14.8±2.5 While after phototherapy Hemoglobin levels 14.6 ±2.9 .This comparison showed a non statistically significant difference where (paire dt= 1.96and P= >0.05) **.**

Table (14): Means,standarded deviations (SD) of Hb before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
Hb	14.8±2.5	14.6±2.9	0.18±0.58	0.09	1.96	>0.05

Chart (22) Means Hb before and after phototherapy among patients

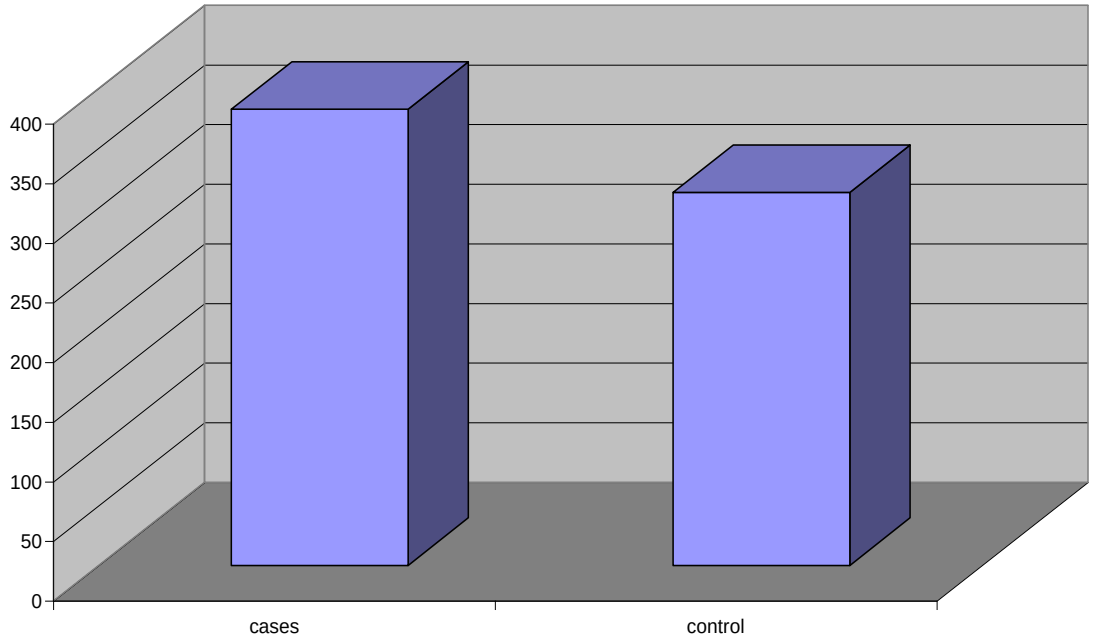


As regards platelets number (×10³) in patients it ranged from 159×10³ to 847×10³ with the mean of(382± 168.8) .While , in control ranged from 197×10³ to 471×10³ ,with the mean of (312.7 ± 96.2). This comparison showed statistically non significant difference where (t= 1.91 and P= >0.05).

Table (15): Range and Mean ± standard deviation of Plts among study and control groups.

Study group	Plts		Test f significance	
	Range	Mean ± SD	t	P-value
Patients	159 - 847	382.6 ± 168.8	1.91	>0.05
Control	197 - 471	312.7 ± 96.2		

Chart (23) means of PLts among study,control groups

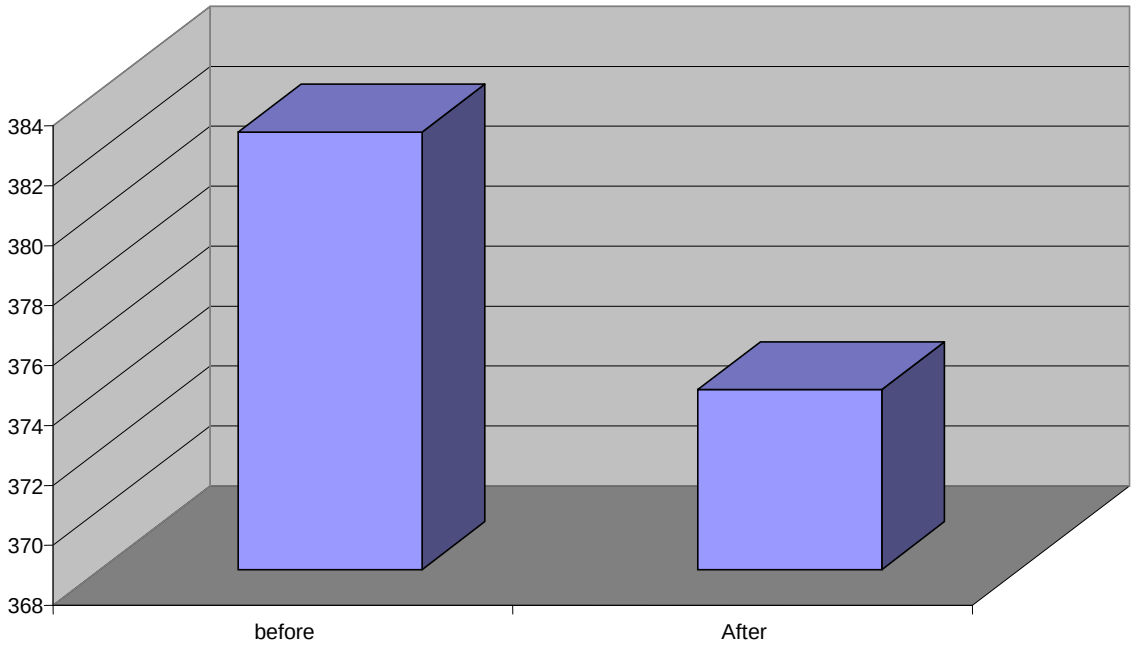


As regards Differences between platelets number (×10³) in patients before and after phototherapy, first before phototherapy 382.6 ± 168.8 while after pjototherapy 374 ± 153**.**This comparison showed highly statistically significant difference where (paire dt= 18.96 and P<0.001).

Table (16): Means,standarded deviations (SD) of Plts before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
Plts	382.6±168.8	374±153	8.6±2.9	0.46	18.96	<0.001

Chart (24) Means of Plts before and after phototherapy among patients



Total Bilirubin levels in patients ranged from 15.1 to 20.6 mg/dl with the mean of 16.9 ±1.5. In controls total Bilirubin level ranged from 1.1 to 4.9 mg/dl with the mean of 2.5 ± 1.2. Which is of highly significant difference where (t= 36.9 and P<0.001). As regards direct Bilirubin level, in patients it ranged from 0.9 to 2.2 mg/dl with the mean of 1.4± 0.3, while in control the direct Bilirubin level ranged from 0.1 to 0.7 mg/dl with the mean of 0.3 ± 0.2 this comparison showed highly significant difference, with (t = 16.26 and P <0.001**)**.

Table (17): Range and Mean ± standard deviation of T.Bil. among study and control groups.

Study group	T.Bil		Test of significance	
	Range	Mean ± SD	t	P-value
Patients	15.1 - 20.6	16.9 ± 1.5	36.9	<0.001
Control	1.1 - 4.9	2.5 ± 1.2		

Chart (25) means of T.Bil before among study,control groups

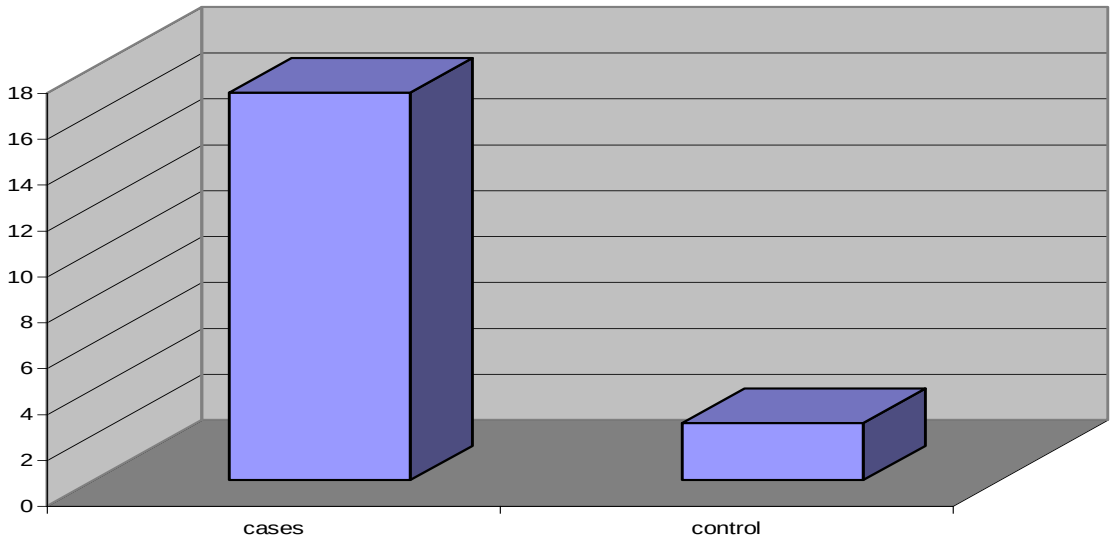
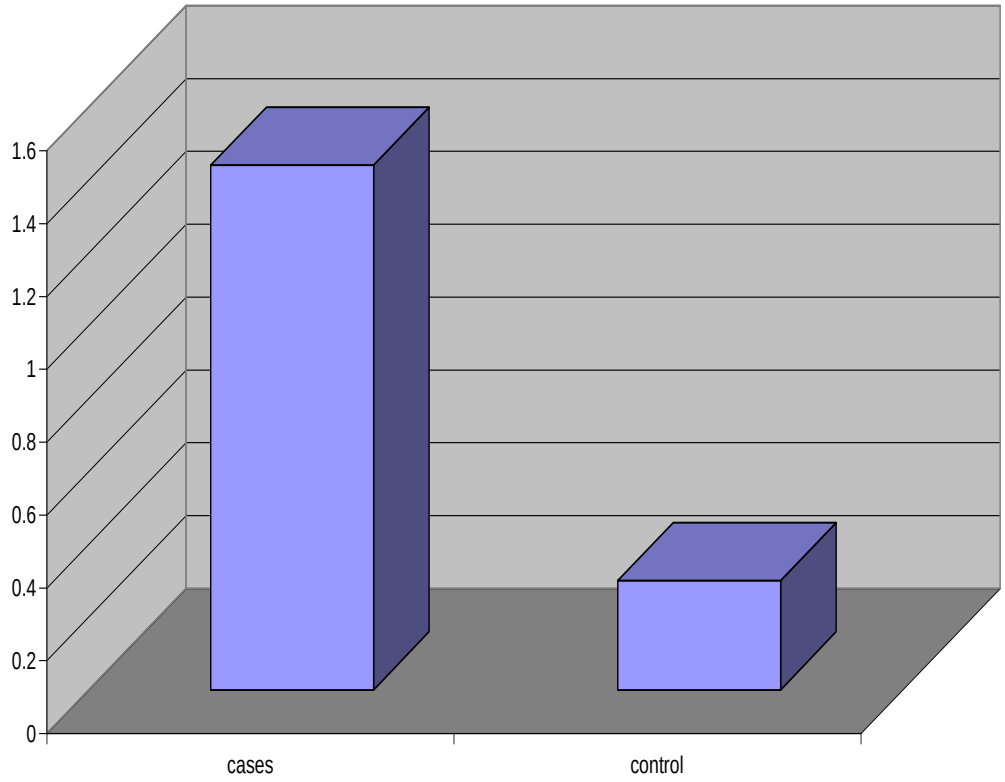


Table (18): Range and Mean ± standard deviation of D.Bil. among study and control groups.

Study group	D.Bil		Test of significance	
	Range	Mean ± SD	t	P-value
Patients	0.9 - 2.2	1.4 ± 0.3	16.26	<0.001
Control	0.1 - 0.7	0.3 ± 0.2		

Chart (26) means of D.Bil. among study,control groups



Total Bilirubin levels in patients as it has been measured before and after exposure to phototherapy.

First before phototherapy total Bilirubin16.9±1.6 and after phototherapy 11±1.9.Comparison between the two conditions showed highly statistically significant difference where (paire dt= 18.96 and P< 0.001)**.**As regards direct bilirubin levels in patients before and after phototherapy. Before phototherapy 1.44±0.32 While after phototherapy 1.01±0.4. This comparison showed a highly statistically significant difference with (paire dt=6.64 and P<0.001)

Table (19): Means,standarded deviations (SD) of T Bil before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
T.Bil	16.9±1.6	11±1.9	5.9±1.8	0.28	20.7	<0.001

Chart (27) means of T.Bili before and after among cases

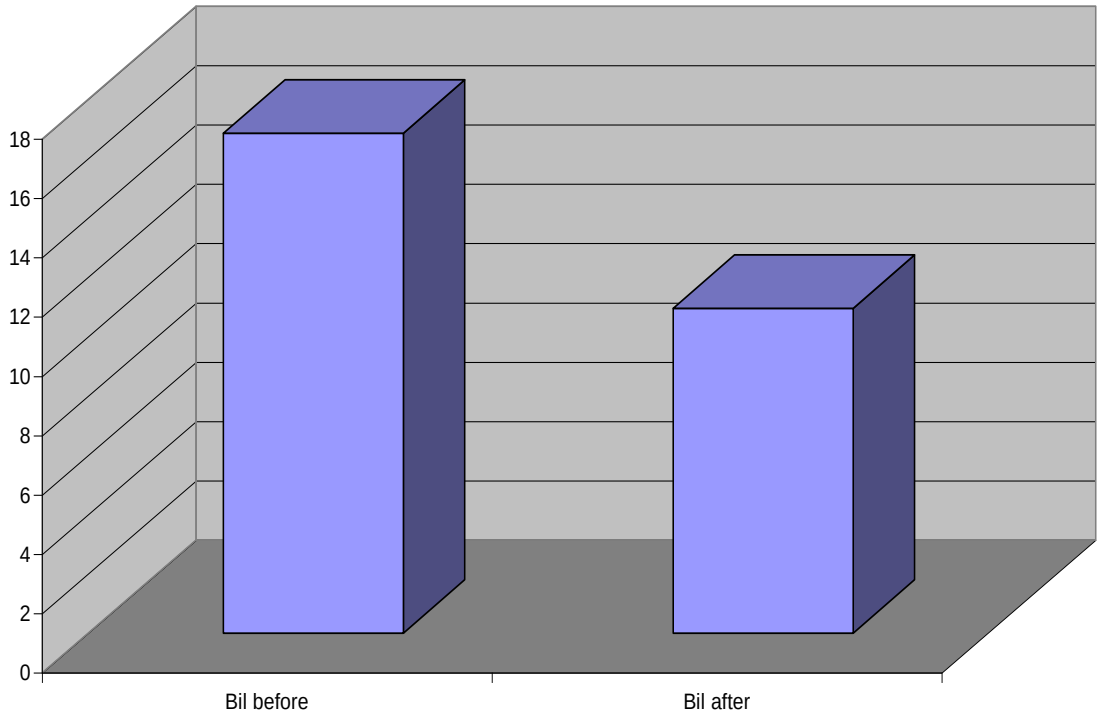
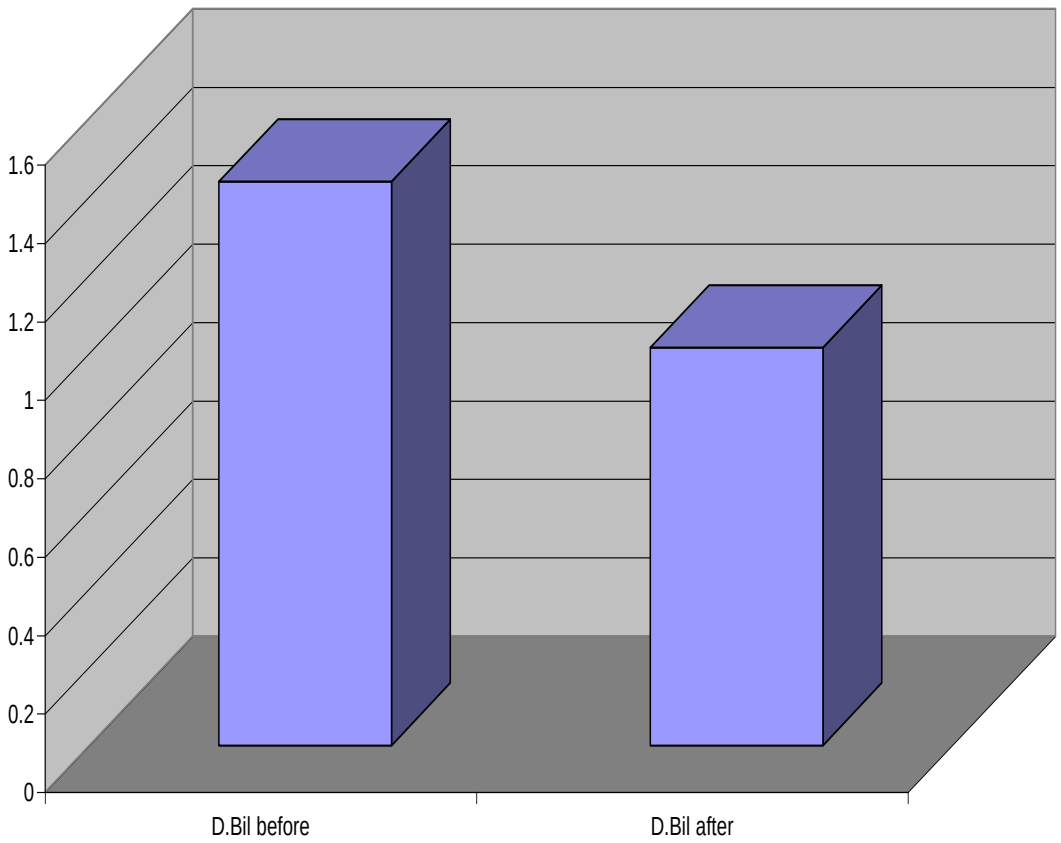


Table (20): Means,standarded deviations (SD) of D.Bil before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
D.Bil	1.44±0.32	1.01±0.4	0.43±0.4	0.06	6.64	<0.001

Chart (28) means of D.Bili before and after among cases

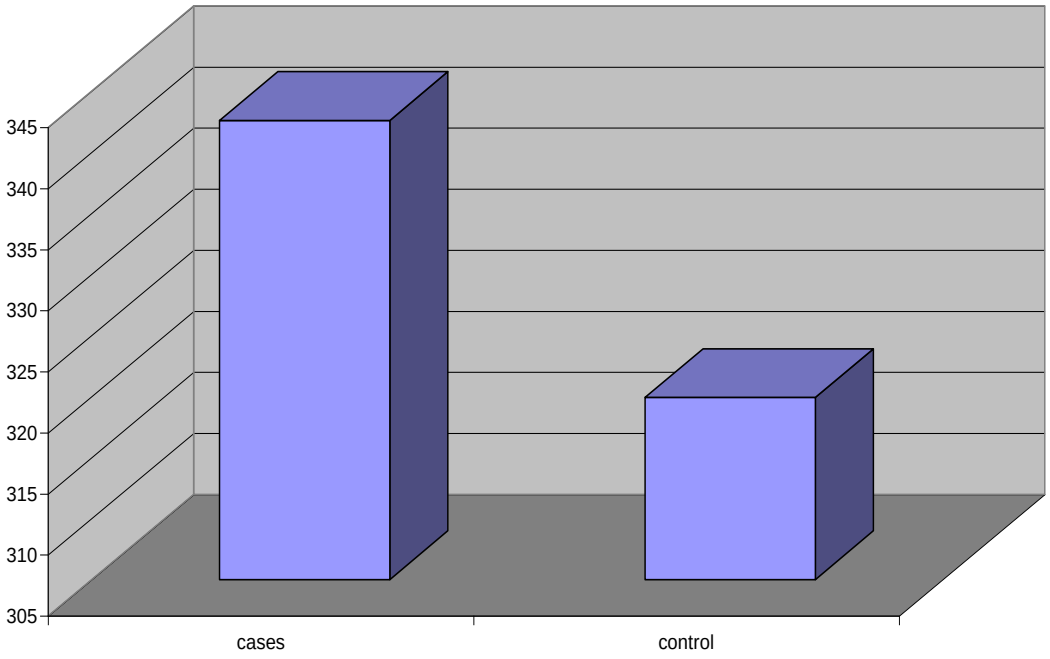


TNF levels in patients ranged from 280 to 396 pg/ml ,with the mean of (342.6 ± 43.2) .While in controls TNF levels ranged from 228 to 396 pg/ml ,with the mean of (319.9 ± 47.1). This comparison showed non statistically significant difference with (t= 1.63 and P=>0.05).

Table (21): Range and Mean ± standard deviation of TNF among study and control groups.

Study group	TNF		Test of significance	
	Range	Mean ± SD	t	P-value
Patients	280 - 396	342.6 ± 43.2	1.63	>0.05
Control	228 - 396	319.9 ± 47.1		

Chart (29) means of TNF among study groups

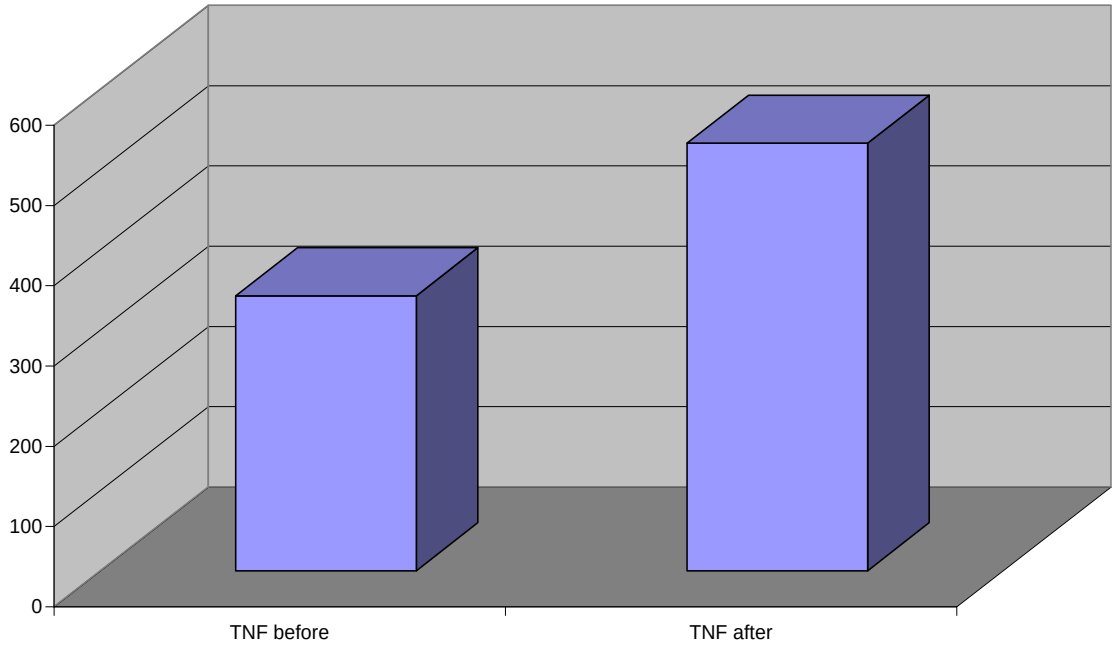


TNF levels in patients before phototherapy 342.6±43.2 while after phototherapy TNF levels ranged from 533±100.7 this comparison showed a highly statistically significant difference with (paire dt= 11.59 and P<0.001)

Table (22): Means,standarded deviations (SD) of TNF before and after phototherapy among patients

Time	Pre X- ± SD	Post X- ± SD	X- ± SD of difference	SE	Paire dt	P
TNF	342.6±43.2	533±100.7	190.4±103.6	16.4	11.59	<0.001

Chart (30) means ofTNF before and after among cases



In the patients TNF levels showed positive correlation with CRP (r= 0.2667 by P-value<0.05)).And another significant correlation with platelet count (r= 0.316 by P-value<0.05)**.**

TNF levels shows insignificant correlation with other parametric data (sex , weight, gestational age, post-natal age ,total bilirubin , direct bilirubin, hemoglobin ,TLC ,)**.**

Table (23): Correlation between TNF levels with other parameters in patients (before and after phototherapy).

TNF pg\ml / Variable	before		After	
	r	P-value	r	P-value
Wt kg	0.2584	>0.05	-0.2513	>0.05
G.A wks	0.0716	>0.05	-0.04639	>0.05
Post-natal age days	0.0123	>0.05	-0.199	>0.05
Total Bilirubin mg\dl	-0.166	>0.05	0.186	>0.05
Direct Bilirubin mg\dl	-0.083	>0.05	-0.072	>0.05
TLC $\times 10^3$	0.1732	>0.05	-0.184	>0.05
Hb gm\dl	0.0246	>0.05	-0.0216	>0.05
Plts	-0.018	>0.05	-0.316	<0.05
CRP	0.214	>0.05	0.2667	<0.05

Chart (31) Correlation between TNF levels avd CRP in patients (before phototherapy).

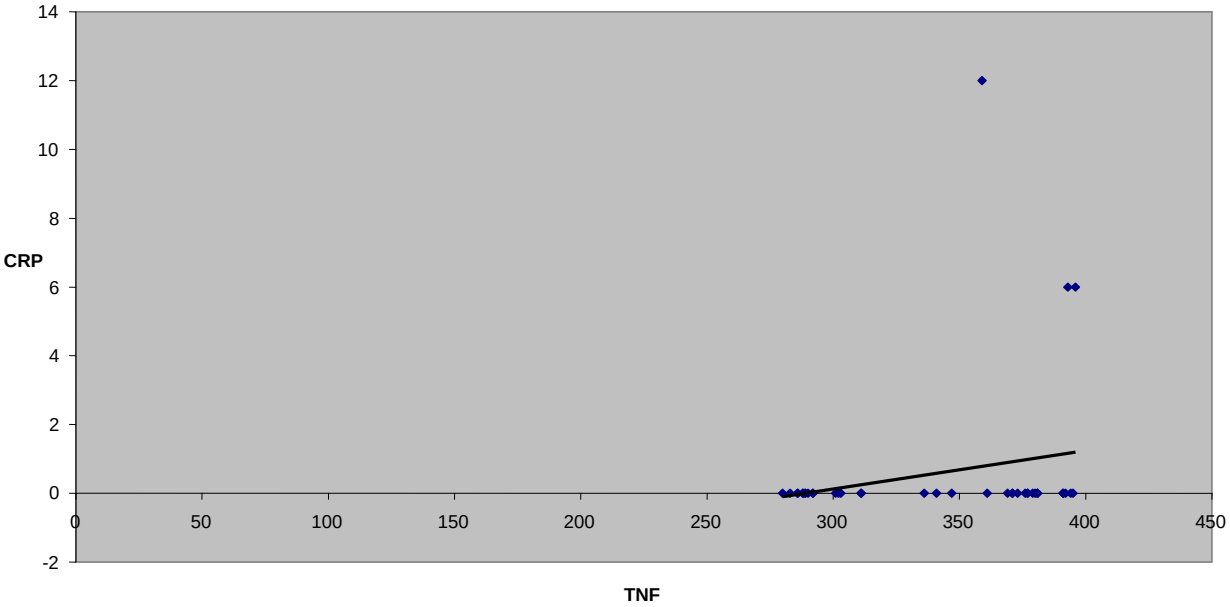


Chart (32)Correlation between TNF levels avd CRP in patients (after phototherapy).

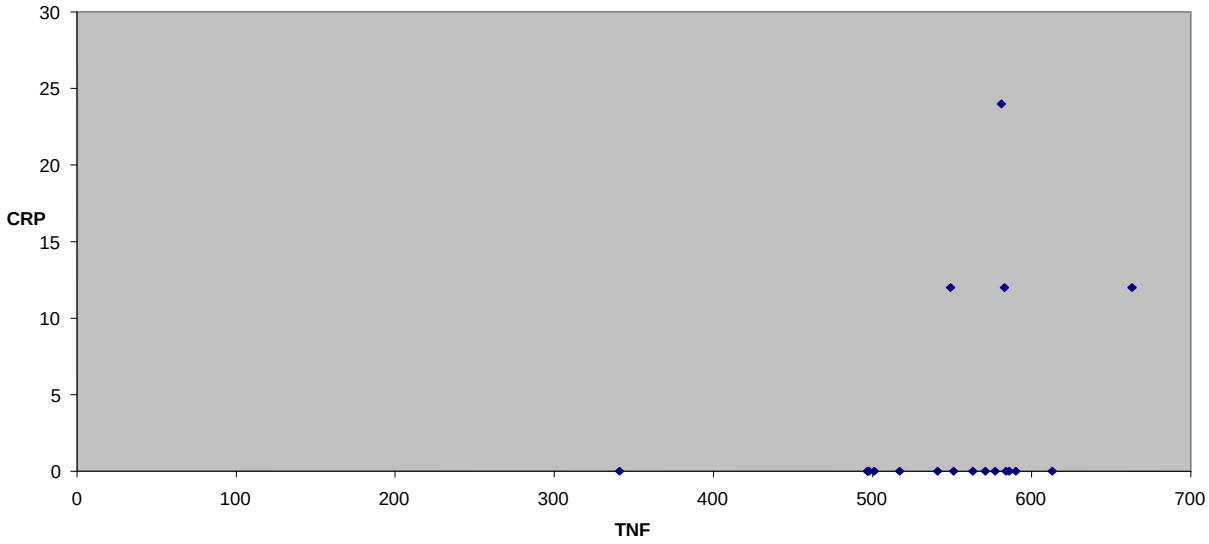


Chart (33)Correlation between TNF levels avd PLTs in patients (before phototherapy).

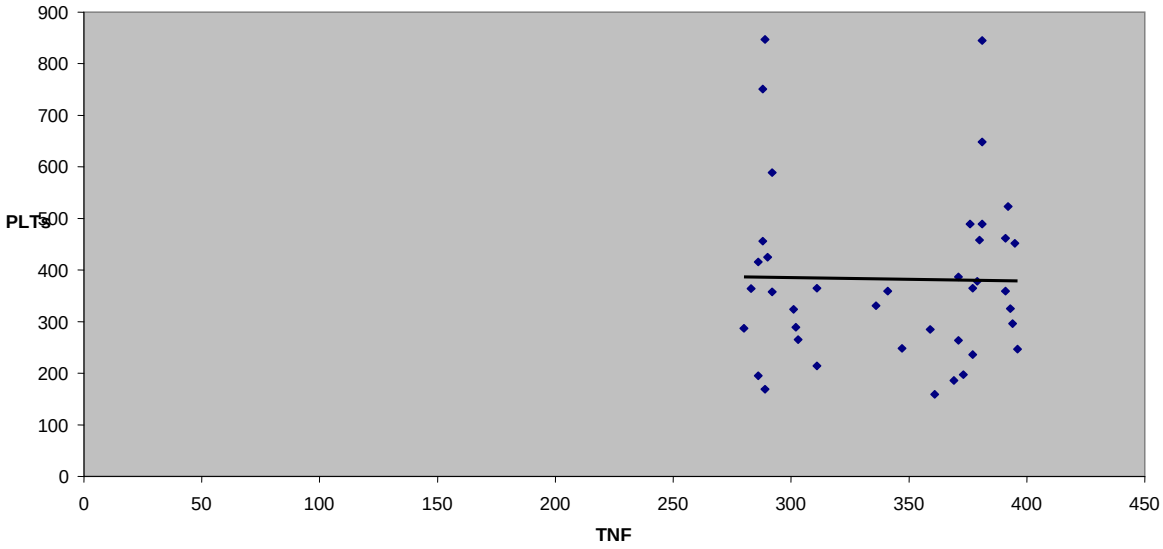


Chart (34)Correlation between TNF levels avd PLTs in patients (after phototherapy).