CHAPTER (IV)
RESULTS

The patients were classified into the following groups according to laboratory findings.

Group (I) : Acute septic meningitis:

It comprised 35 patients (57%). CSF of these patients showed pleocytosis, decrease glucose level and increase protein level. Among these cases, there were 23 patients showed positive culture (65.4%) and their distributions were as follow :

Case No.	Causative organism	%
8	staphylococci	23%
7	gram -ve bacille	20%
4	pnumococci	11%
2	meningococci	5.7%
2	streptococci	5.7%

While 12 cases (34%) showed picture of bacterial meningitis but their cultures were negative. Their history showed an intake of antibiotics one to two days prior to admission to the hospital. They were considered to have Acute Bacterial Meninigitis.

Group (II) : Acute aseptic meningitis :

It comprised 19 patients (30.6%). They presented with clinical and laboratory evidence of meningitis (mild pleocytosis, mild decrease CSF

level of glucose and mild protein increase), CSF culture and Gram and Zeihl - Neelsen stains were negative. Therefore these patients were considered to have (Acute Aseptic Meningitis).

Group (III) : Tuberculous meningitis :

It comprised 8 patients (13%). They presented with clinical evidence of meningitis (fever - headache - vomiting altered level of consciousness).

CSF showed lymphocytic pleocytosis, high protein level and low glucose level. Direct smear and Gram stain were negative while Zeihl Neelsen stain was positive. Our diagnosis is confirmed by tuberculin test which is positive (more the 10 mm) and routein chest X-ray was done to every patients.

This study also involved 16 healthy subjects which were chosen to serve as controls. They were free of any symptoms or signs of infection.

Their age range and sex distribution were matching with our studied groups.

The result of this study are presented in the following tables and figures :

Tables (1, 2 & 3) showed row clinical data of various studied groups.

Table (4) showed that in acute septic meningitis (group I), age ranged from 2 months to 12 years, fever was present in 30 patients (85.7%), headache was present in 16 patients (45.7%) and vomiting was present in 16 patients (45.7%). Coma was present in 8 patients (22.8%) while drowsness was present in 12 patients (34%), convulsions were present in 17 patient (48.5%) while 22 patients presented with rigid neck

and positive Kernig's sign (63%) and 3 patients presented by rash (meningococcaemia) (8.5%). Five patients had died (14%).

Also, table (4) showed that in aseptic meningitis (group II) age ranged from 8 months to 12 years, fever was present in 15 patients (79%), headache was present in 8 patients (42%), vomiting was present in 8 patients (42%), coma was present in 4 patients (21%) and drowsiness was present in 9 patients (47.3%). Convulsions were present in 11 patients (57%) neck rigidity with positive Kernig's sign were present in 9 patients (47%). One patient had died (5.3%).

While in tuberculous meningitis (group III) age ranged from 1.5 years to 12 years. All patients were presented with fever (100%). Headache was present in 6 patients (75%), coma was present in one patient (12.5%) while drowsiness was present in 3 cases (37.5%). Six patients (75%) showed rigid neck and positive Kernig's and Brudzinski signs. One patient had died.

Tables (5, 6 & 7) showed raw data of CSF findings in various studied groups.

Staphylococci was the causative organism in 8 patients (22.8%) while gram negative bacilli was in 7 patients (20%), pnumococci in 4 patients (11.4%) streptococci was in 2 patients (5.7%) and meningococci was in 2 patients (5.7%) while 12 patients (40%) showed negative culture.

Table (7) showed CSF finding in acute septic meningitis (Group I). CSF tension ranged from continuous drippling to stream like. CSF was turbid in 30 patients (85.7%) and cloudy in 3 patients (8%) and clear CSF

was in 2 patients (6%). CSF glucose ranged from 3 mg% to 26 mg% CSF protein ranged from (98 mg%) to (306 mg%) CSF total leukocytic count ranged from 8600 cell / cmm to 56000 cells /cmm. The P.M.N.L percentage ranged from 99 to 70. While lymphocytes percentage ranged from 1 to 20.

Also, table (8) showed CSF findings in acute aseptic meningitis (group II). CSF tension ranged from continuous drippling to stream like with emergency CSF was turbid in 4 patients (21%), cloudy in 6 patients (31.5%) and clear in 9 patients (47%). CSF glucose ranged from (15 mg% to 37 mg%) CSF protein ranged from (85 mg% to 196 mg%). Total leukocytic count ranged from (1950 cells/cmm to 5000 cells/ cmm) polymorphnulear percentage ranged from 50 to 90 while lymphocytes percentage ranged from 10 to 40 CSF culture was negative in all cases (100%).

While in tuberculous meningitis (Group III). CSF tension ranged from continuous drippling to stream like. Clear CSF was present in 3 patients (37.5%) while cloudy CSF was present in 5 patients (62.5%). CSF glucose level ranged from 11 mg% to 28 mg% CSF protein level ranged from 6500 cells/cmm to 9900 cells /cmm. Polymorphnucear percentage ranged from 50 to 70 while lymphocytes percentage ranged from 25 to 50. CSF showed positive Zeih-Nellsen stain in all cases (100%).

Table (9) shows that septic meningitic patients had significant high mean values of cortisol - cholesterol LDL - triglycride. On the other hand T_3, T_4, TSH, HDL showed no significant difference.

Table (10) shows that aseptic meningitic patients had significant high mean values of cortisol - cholesterol - LDL - triglycride. On the other hand T_3, T_4, TSH, HDL showed no significant difference.

Table (11) shows that the tuberculous meningitic patients had significantly high mean values of cortisol, cholesterol -LDL and triglycride. On the other hand T_3, T_4 TSH, HDL showed no significant difference.

Table (12) shows that the all meningitic patients in the studied groups had significant high mean values of cortisol - cholesterol - triglycride. On the other hand T_3, T_4, TSH, HDL, LDL showed no significant difference.

Table (13) shows that patients with septic meningitis had significant higher mean values of cortisol - cholesterol, triglycride before cure than after cure. On the other hand T_3, T_4, TSH, HDL, LDL show no significant difference.

Table (14) shows that patients with aseptic meningitis had significant higher mean values of cortisol-cholesterol triglycride before cure than after cure. On the other hand T_3, T_4, TSH, HDL showed no significant difference.

Table (15) shows that patients with tuberculous meningitis had significant higher mean values of cortisol triglycride before cure than after cure. On the other hand T_3, T_4, TSH, HDL showed no significant difference.

Table (1) : Raw clinical data in patients with Acute Septic Meningitis (Group I).

Case No	Age	Fever	Haeda-che	Vomit-ing	Convul-sion	Drows-ness	Coma	Rigid neck	Kernig sign	Brud inski	Rashz	Remark
1	6yrs.	+	-	+	-	+	-	+	+	-	-	
2	6mo.	+	-	-	+	-	+	-	-	-	-	
3	5yrs.	+	+	+	-	-	-	+	+	-	-	died
4	6mo.	+	-	-	+	+	-	-	-	-	-	
5	6mo.	+	-	-	+	+	-	+	-	-	-	
6	8yrs.	-	+	+	-	+	-	+	+	+	-	
7	8yrs.	+	+	+	-	-	-	+	+	-	-	
8	6yrs.	+	+	+	-	-	+	+	+	+	+	died
9	3yrs.	-	-	-	+	-	+	+	+	+	-	
10	11yrs	+	+	+	-	-	-	+	+	-	-	
11	9yrs.	+	+	-	+	-	-	+	+	+	-	died
12	6yrs.	+	-	+	-	-	-	-	-	+	-	
13	9yrs.	-	+	+	-	+	-	-	-	+	-	
14	6yrs.	+	+	-	-	-	+	+	+	-	+	died
15	11mo	+	-	+	+	-	-	-	-	-	-	
16	6yrs.	+	+	-	+	-	-	+	+	+	-	
17	9mo.	+	-	-	-	+	-	-	-	-	-	
18	8yrs.	+	+	+	-	-	-	+	+	+	-	
19	6yrs.	+	-	+	-	-	-	+	+	-	-	
20	2yrs.	+	-	+	+	-	-	+	-	-	-	
21	6yrs.	+	-	-	-	+	-	+	+	+	-	
22	1yr.	+	-	+	+	-	-	-	-	-	+	died
23	12yrs	+	+	+	-	+	-	+	+	+		
24	7yrs.	+	+	-	-	+	-	+	-	+		

Table (1) : Con.

No	Age	Fever	haed ache	vomit-ing	convul-sion	Drows iness	Coma	Rigid Neck	Kern-iges sign	Brudzi nski's sign	Rash.	Remark
25	5mo.	+	-	-	+	-	+	-	-	-	-	
26	6mo.	-	-	-	+	+	-	+	-	-	-	
27	5mo.	+	-	-	+	-	+	-	-	-	-	
28	2mo.	-	-	-	+	-	+	-	-	-	-	
29	6mo.	+	-	-	+	-	-	-	-	-	-	
30	9yrs.	+	+	+	-	-	-	+	+	+	-	
31	5yrs.	+	+	-	-	+	-	+	+	+	-	Died
32	1yr.	+	-	+	+	-	-	-	-	-	-	
33	10mo.	+	-	-	+	-	+	-	-	-	-	
34	8yrs.	+	+	+	-	-	-	+	+	+	-	
35	5yrs.	+	+	-	-	+	-	+	-	+	-	

yr. : year

mo: months

+ : present

- : absent

Table (2) : Raw clinical data in patients with (Acute Asepstic Meningitis) (Group II) (19 cases) .

No	Age	Fever	Haed-ache	Vomit-ing	Convul-sions	Drow-sy	Coma	Rigid Neck	Kernig sign	Brudzinski	Rash.	Remark
1	8mo.	+	-	+	+	+	-	-	-	-	-	
2	10yrs.	+	+	+	-	+	-	-	-	-	-	
3	7yrs.	+	+	-	-	-	-	+	+	+	-	
4	3yrs.	+	-	-	+	+	-	+	+	-	-	
5	6yrs.	-	+	-	+	-	+	-	-	-	-	Died
6	18mo.	-	-	-	+	+	-	+	-	-	-	
7	6yrs.	+	+	+	-	-	-	+	+	+	-	
8	12yrs.	+	+	+	-	-	-	+	+	-	-	
9	3yrs.	+	-	+	+	-	-	-	-	-	-	
10	9yrs.	-	+	+	+	+	-	+	+	+	-	
11	5yrs.	+	-	-	-	+	-	+	+	-	-	
12	11mo.	+	-	-	+	-	-	-	-	-	-	
13	2.5yrs.	+	-	-	+	+	-	-	-	-	-	
14	6mo.	+	-	-	+	-	+	-	-	-	-	
15	12yrs.	+	+	+	-	-	-	+	+	+	-	
16	7yrs.	-	-	+	-	+	-	-	+	+	-	
17	4yrs.	+	-	-	+	-	+	-	-	-	-	
18	9yrs.	+	+	-	-	+	-	+	+	+	-	
19	1yrs.	+	-	-	+	-	+	-	-	-	-	

yr. : year mo: months

+ : present - : absent

Table (3) : Raw clinical data in patients with T.B meningitis (8 cases).

No	Age	Fever	Haed ache	Vomit- ing	-sion	Drow- sy	Coma	Rigid Neck	Ker-nig sign	Brdzi nski	Rash.	Re- mark
1	6yrs.	+	+	-	-	+	-	+	+	+	-	
2	7yrs.	+	+	-	-	-	-	+	+	+	-	
3	1.5yr	+	-	-	+	+	-	-	-	-	-	
4	4yrs.	+	+	+	-	-	-	+	+	+	-	
5	3yrs.	+	-	+	+	+	-	-	-	-	-	died
6	12yrs.	+	+	+	-	-	-	+	+	+	-	
7	7yrs.	+	+	+	-	-	-	+	+	+	-	
8	12yrs.	+	+	-	+	-	+	+	+	+	-	

yr. : year

+ : present

- : absent

Table (4): Clinical data in patients with meninigitis (All studied groups).

Data	Fever	Haedache	Vomiting	Convulsions	Drowsy	Coma	Rigid neck	Kernig' sign	Brudz inski	Rash	Death	Age range
Group I (35)												
No. of cases	30	16	16	17	12	8	22	22	15	3	5	2M:12ys
%	85.1	45.7	45.7	48.5	34.3	34.3	63	63	42.8	42.8	14	
Group II (19)												
No. of cases	15	8	8	11	9	4	9	9	6	0	1	8M:12ys
%	78.9	42.1	42.1	57.8	47.3	21	47.3	47.3	31.5	0	5.2	
Group III (8)												
No. of cases	8	6	4	3	3	1	6	6	6	0	1	18M:12ys
%	100	75	50	37.5	37.5	12.5	75	75	75	0	125	

Table (5) : Raw data of CSF findings in patients with septic meningitis (Group I)

No	Tenison	Aspect	Glusose mg %	Protein mg%	Total leukocytic cell / cmm	PNL./Lymph ocyte %	Gram-stain culture
1	+ +	Turbid	17	193	9600	98 / 1	- Ve
2	+ +	Turbid	5	220	14400	97 / 2	staph.
3	+ +	Turbid	8	210	9300	95 / 5	staph.
4	++ +	Turbid	3	306	9000	97 / 3	staph.
5	+ +	Turbid	7	296	18600	80 / 20	Pnumococci
6	+ +	Turbid	4	140	15500	97 / 2	staphylococci
7	+ +	Turbid	26	220	15000	95 / 4	- ve
8	+ +	Turbid	23	170	13400	80 / 12	- ve
9	+ +	Cloudy	14	268	11650	90 / 10	pnumoccci
10	+ ++	Turbid	13	189	14420	75 / 12	- ve
11	+++ +	Turbid	18	228	17300	95 / 5	- ve
12	+ +	Turbid	22	130	9100	84 / 18	streptococci
13	+ +	Turbid	16	110	9250	75 / 15	- ve
14	+ +	Turbid	19	218	18700	96 / 4	- ve
15	+ +	Cloudy	21	143	13930	70 / 13	- ve
16	+ +	Turbid	18	305	12000	80 / 20	meningococci
17	+ +	Turbid	17	200	19000	85 / 15	- ve
18	+ +	Turbid	29	114	18550	70 / 30	- ve
19	+ +	Turbid	16	237	24320	80 / 15	- ve
20	+ +	Cloudy	23	140	12220	90 / 10	- ve
21	+ +	Clear	9	123	14750	90 / 13	pnumococci
22	+ +	Turbid	8	327	11200	89 / 1	gram -v bacilli
23	+ +	Turbid	12	248	19450	88 / 6	pnumococci
24	+ +	Turbid	6	129	8540	85 / 8	meningococci

Table (5) : Con.

No	Tension	Aspect	Glucose%	Protein mg%	Total leuko cytic count cell/ mm	P.N.L / Lymph.	Gram stain
25	+ +	Turbid	5	139	56000	80 / 20	Strepto cocci
26	+ +	Turbid	9	220	14000	99 / 1	G-ve bacilli
27	+ +	Turbid	7	218	30.000	95 / 5	G-ve bacilli
28	+ +	Turbid	6	188	16000	98 / 2	G-ve bacilli
29	+ +	Turbid	7	112	13350	97 / 3	G-ve bacilli
30	+ +	Turbid	5	98	11890	90 / 10	G-ve bacilli
31	+ + +	Turbid	8	117	9000	80 / 19	Staph
32	+ +	Turbid	8	102	17000	97 / 2	Staph
33	+ +	Turbid	7	203	19650	80 / 12	Staph
34	+ + +	Turbid	5	142	12550	98 / 2	G -ve bacilli
35	+ +	Turbid	7	139	15900	88 / 4	Staph

\+ Just drippling

\+ + Contenous drippling

\+ + + Streem like

\+ + + + Streem like with emergency.

Table (6): Raw data of CSF findings in patients with acute aseptic meningitis (Group II)

No	Tension	Aspect	Glucose%	Protein mg%	Total leuko cytic cell/ mm	P.N.L / Lymph.	Gram stain
1	+ +	Cloudy	20	113	3600	70 / 3 0	Negative
2	+ +	Clear	25	190	4000	70 / 30	- ve
3	+ +	Clear	36	109	3500	60 / 40	- ve
4	+ +	Turbid	35	85	4500	80 / 15	- ve
5	+ + + +	Turbid	20	196	5000	50 / 40	- ve
6	+ +	Cloudy	22	98	4400	75 / 20	- ve
7	+ +	Clear	34	100	2700	75 / 20	- ve
8	+ +	Cloudy	22	120	3600	75 / 26	- ve
9	+ +	Clear	25	128	3000	80 / 10	- ve
10	+ +	Clear	29	182	4400	65 / 30	- ve
11	+ + +	Clear	35	104	2900	60 / 35	- ve
12	+ +	Turbid	37	124	3500	70 / 25	- ve
13	+ +	Cloudy	15	95	2900	80 / 20	- ve
14	+ + +	Turbid	32	98	3500	70 / 15	- ve
15	+ + +	Clear	27	92	4200	65 / 30	- ve
16	+ +	Cloudy	20	194	3950	70 / 30	- ve
17	+ +	Clear	28	136	3700	80 / 10	- ve
18	+ +	Clear	19	85	4200	60 / 30	- ve
19	+ +	Cloudy	36	109	1950	90 / 10	- ve

Table (7) : Raw data of CSF findings in patients with T.B Meningitis (Group III)

No	Tension	Aspect	Glucose%	Protien mg%	Total leukocytic count	PMN/Lymp %	Ziehl Neelsen
1	+ +	Clear	28	163	8500	50 / 50	+ ve
2	+ +	Cloudy	15	198	9300	40 / 45	+ ve
3	+ +	Cloudy	19	205	6500	60 / 35	+ ve
4	+ +	Clear	23	185	8400	50 / 45	+ ve
5	+ +	Cloudy	14	230	9500	70 / 25	+ ve
6	+ + +	Cloudy	18	135	8500	60 / 40	+ ve
7	+ +	Cloudy	22	200	9900	50 / 35	+ ve
8	+ +	Clear	11	198	8950	50 / 50	+ ve

Table (8): CSF findings in patients with meningitis (All studied groups).

Groups	CSF aspect			Tension			Glucose rang mg%	Protein range mg%	Total leukocytic cell cmm
	turbid	cloudy	clear	++	+++	++++			
Group I (35)									
No.	31	3	1	30	4	1	5 - 26	198 - 306	8600 56000
%	88.6	8.5	2.9	85.7	11.4	2.9			
Group II									
No.	4	6	9	15	3	1	15 - 37	85 - 194	1950 - 500
%	21	31.5	41.5	79.1	15.7	52			
Group III									
No.	--	5	3	7	1	--	11 - 28	135 - 230	6500 - 9900
%	--	62.5	37.5	87.5	12.5	--			

Table (9): Statistical analysis of hormonal and lipid changes in group I (septic meningitic cases) and controls.

Data		Group I septic cases (35)	Controls (16)	t-test	P
T_3 ng/dl	$\bar{X}$	132.06	161.68	1.17	> 0.05
	± S.D	45.65	44.20		
T_4 Mg/dl	$\bar{X}$	9.58	8.96	1.02	> 0.05
	± S.D	2.07	1.83		
TSH	$\bar{X}$	4.37	3.89	0.72	> 0.05
milli Iu/L	± S.D	2.49	1.27		
Cortisol Mg/dl	$\bar{X}$	33.70	12.30	5.19	< 0.001*
	± S.D	14.30	5.19		
Cholesterol	$\bar{X}$	200.18	127.01	3.57	< 0.01
Mg/dl	± S.D	80.02	26.35		
HDL	$\bar{X}$	40.53	44.53	0.66	> 0.05
Mg/dl	± S.D	23.26	9.17		
LDL	$\bar{X}$	110.86	58.19	2.60	< 0.05
Mg/dl	± S.D	78.57	24.71		
Triglycride	$\bar{X}$	219.38	114.61	4.39	< 0.01
Mg/dl	± S.D	92.85	29.27		

* High significant
> 0.05 = non significant
< 0.05 = significant

Table (10): Statistical analysis of hormonal and lipid changes in group II (aseptic meningitic cases) and controls.

Data		Group II aseptic cases (19)	Controls	t-test	P
T_3 ng/dl	$\bar{X}$	142.98	161.68	1.20	> 0.05
	± S.D	46.76	44.20		
T_4 Mg/dl	$\bar{X}$	10.93	8.96	1.74	> 0.05
	± S.D	4.19	1.92		
TSH	$\bar{X}$	3.58	3.89	1.83	> 0.05
milli Iu/L	± S.D	1.43	1.27		
Cortisol Mg/dl	$\bar{X}$	34.96	12.30	5.67	< 0.001*
	± S.D	15.23	5.19		
Cholesterol	$\bar{X}$	199.78	127.31	5.99	< 0.001*
Mg/dl	± S.D	41.83	26.35		
HDL	$\bar{X}$	37.32	44.53	1.45	> 0.05
Mg/dl	± S.D	18.04	9.17		
LDL	$\bar{X}$	113.11	58.19	4.90	< 0.001
Mg/dl	± S.D	38.62	25.71		
Triglycride	$\bar{X}$	206.23	114.61	7.26	< 0.0001
Mg/dl	± S.D	43.10	29.27		**

* High significant
** Very high significant

Table (11): Statistical analysis of hormonal and lipid changes in group III (T.B. cases) and controls.

Data		Group III T.B.cases (8)	Controls (16)	t-test	P
T_3 ng/dl	$\bar{X}$	155.23	161.67	0.34	> 0.05
	± S.D	44.61	44.20		
T_4 Mg/dl	$\bar{X}$	8.72	8.96	0.29	> 0.05
	± S.D	1.93	1.83		
TSH	$\bar{X}$	3.31	3.89	0.86	> 0.05
milli Iu/L	± S.D	2.10	1.27		
Cortisol Mg/dl	$\bar{X}$	21.23	12.30	2.34	< 0.05
	± S.D	13.69	5.19		
Cholesterol	$\bar{X}$	176.50	127.31	3.73	< 0.01
Mg/dl	± S.D	37.82	26.35		
HDL	$\bar{X}$	39.75	44.53	0.67	> 0.05
Mg/dl	± S.D	2605	9.17		
LDL	$\bar{X}$	96.13	58.19	3.25	< 0.01
Mg/dl	± S.D	31.13	24.71		
Triglycride	$\bar{X}$	164.25	114.61	3.97	< 0.01
Mg/dl	± S.D	28.13	29.27		

P > 0.05 = non significant
P < 0.05 = significant

Table (12): Statistical analysis of hormonal and lipid changes in all cases and controls.

Data		All cases (62)	Controls	t-test	P
T_3 ng/dl	$\bar{X}$	138.40	161.68	1.82	> 0.05
	± S.D	45.85	44.20		
T_4 Mg/dl	$\bar{X}$	9.88	8.96	1.20	> 0.05
	± S.D	2.93	1.83		
TSH	$\bar{X}$	3.99	3.89	0.17	> 0.05
milli Iu/L	± S.D	2.18	1.27		
Cortisol Mg/dl	$\bar{X}$	32.47	12.29	5.30	< 0.001*
	± S.D	14.95	5.19		
Cholesterol	$\bar{X}$	197.34	127.31	4.16	< 0.001*
Mg/dl	± S.D	65.69	26.35		
HDL	$\bar{X}$	39.44	44.53	0.91	> 0.05
Mg/dl	± S.D	21.85	9.17		
LDL	$\bar{X}$	109.65	58.19	1.09	< 0.01
Mg/dl	± S.D	63.90	24.71		
Triglycride	$\bar{X}$	208.42	114.61	4.83	< 0.001*
Mg/dl	± S.D	75.96	29.27		

* High significant

Table (13): Statistical analysis of hormonal and lipid changes in group I (septic cases) before and after cure.

Data		Before cure (35)	After cure (29)	Paired t-test	P
T_3 ng/dl	$\bar{X}$	132.06	143.82	1.5	> 0.05
	± S.D	45.65	35.48		
T_4 Mg/dl	$\bar{X}$	9.58	9.41	0.29	> 0.05
	± S.D	2.07	1.76		
TSH	$\bar{X}$	4.37	4.75	0.51	> 0.05
milli Iu/L	± S.D	2.49	2.59		
Cortisol Mg/dl	$\bar{X}$	33.90	17.00	5.28	< 0.001*
	± S.D	14.30	7.00		
Cholesterol	$\bar{X}$	200.78	185.97	3.02	< 0.01
Mg/dl	± S.D	80.02	62.42		
HDL	$\bar{X}$	40.53	34.04	3	< 0.05
Mg/dl	± S.D	23.26	21.63		
LDL	$\bar{X}$	110.86	105.03	1.04	> 0.05
Mg/dl	± S.D	78.57	66.30		
Triglycride	$\bar{X}$	219.38	210.93	2.18	< 0.05
Mg/dl	± S.D	92.85	94.42		

* High significant

Table (14): Statistical analysis of hormonal and lipid changes in group II (aseptic cases) before and after cure.

Data		Before cure (19)	After cure (18)	Paired t-test	P
T_3 ng/dl	$\bar{X}$	142.98	163.52	0.50	> 0.05
	± S.D	46.76	42.74		
T_4 Mg/dl	$\bar{X}$	10.93	8.71	1.53	< 0.05
	± S.D	4.19	3.91		
TSH	$\bar{X}$	3.58	3.75	0.19	> 0.05
milli Iu/L	± S.D	1.43	1.49		
Cortisol Mg/dl	$\bar{X}$	34.69	18.34	4.07	< 0.01
	± S.D	15.23	9.52		
Cholesterol	$\bar{X}$	199.78	175.41	2.74	< 0.05
Mg/dl	± S.D	41.83	31.04		
HDL	$\bar{X}$	37.32	30.96	1.9	> 0.05
Mg/dl	± S.D	18.04	12.66		
LDL	$\bar{X}$	113.11	102.54	0.73	> 0.05
Mg/dl	± S.D	38.62	36.48		
Triglycride	$\bar{X}$	206.83	179.52	3.56	< 0.01
Mg/dl	± S.D	43.07	47.52		

Table (15): Statistical analysis of hormonal and lipid changes in group III (T.B.cases) before and after cure.

Data		Before cure (8)	After cure (7)	Paired t-test	P
T_3 ng/dl	$\bar{X}$	155.23	147.43	2.64	> 0.05
	± S.D	44.61	22.82		
T_4 Mg/dl	$\bar{X}$	8.72	8.32	1.66	> 0.05
	± S.D	1.93	1.15		
TSH	$\bar{X}$	3.31	3.42	0.33	> 0.05
milli Iu/L	± S.D	2.10	1.89		
Cortisol Mg/dl	$\bar{X}$	21.23	10.50	2.64	< 0.05
	± S.D	13.69	8.19		
Cholesterol	$\bar{X}$	176.50	168.00	1.66	> 0.05
Mg/dl	± S.D	37.82	34.64		
HDL	$\bar{X}$	39.75	35.18	1.09	> 0.05
Mg/dl	± S.D	26.05	21.19		
LDL	$\bar{X}$	96.13	102.44	1.01	> 0.05
Mg/dl	± S.D	31.13	35.32		
Triglycride	$\bar{X}$	164.25	155.43	3.6	<0.01
Mg/dl	± S.D	28.13	24.19		

Table (16): Statistical analysis of hormonal and lipid changes in all cases before and after cure.

Data		Before cure (62)	After cure (54)	Paired t-test	P
T_3 ng/dl	$\bar{X}$	138.40	141.64	1.12	> 0.05
	± S.D	45.85	36.40		
T_4 Mg/dl	$\bar{X}$	9.88	9.04	1.62	> 0.05
	± S.D	2.93	2.62		
TSH	$\bar{X}$	3.99	4.25	1.00	> 0.05
milli Iu/L	± S.D	2.18	2.23		
Cortisol Mg/dl	$\bar{X}$	32.47	16.60	7.25	< 0.0001**
	± S.D	14.95	8.28		
Cholesterol	$\bar{X}$	197.34	180.12	4.14	< 0.001*
Mg/dl	± S.D	65.69	50.50		
HDL	$\bar{X}$	39.44	33.16	3.73	< 0.05
Mg/dl	± S.D	21.85	18.76		
LDL	$\bar{X}$	109.65	103.87	1.04	> 0.05
Mg/dl	± S.D	63.41	53.78		
Triglycride	$\bar{X}$	208.42	193.26	4.20	< 0.001 *
Mg/dl	± S.D	75.96	77.00		

* High significant
** Very high significant

Table (17): Statistical analysis of hormonal and lipids changes in group I (septic cases) and group III T.B. cases.

Data		Group III T.B. cases	Group I Septic	Paired t-test	P
T_3 ng/dl	$\bar{X}$	155.22	132.06	1.03	> 0.05
	± S.D	44.61	45.65		
T_4 Mg/dl	$\bar{X}$	8.73	9.57	1.06	> 0.05
	± S.D	1.93	2.01		
TSH	$\bar{X}$	3.31	4.37	1.12	> 0.05
milli Iu/L	± S.D	2.09	2.49		
Cortisol Mg/dl	$\bar{X}$	21.23	33.70	2.24	< 0.05
	± S.D	13.69	14.30		
Cholesterol	$\bar{X}$	176.50	200.77	0.83	> 0.05
Mg/dl	± S.D	37.82	80.02		
HDL	$\bar{X}$	39.75	40.53	0.08	> 0.05
Mg/dl	± S.D	26.05	23.26		
LDL	$\bar{X}$	96.13	110.26	0.52	> 0.05
Mg/dl	± S.D	31.13	78.57		
Triglycride	$\bar{X}$	164.25	219.38	1.65	> 0.05
Mg/dl	± S.D	28.13	92.85		

Table (18): Statistical analysis of hormonal and lipids changes in group II aseptic cases and group III T.B. cases.

Data		Group III T.B. cases	Group II Aseptic	Paired t-test	P
T_3 ng/dl	$\bar{X}$	155.22	142.98	0.63	> 0.05
	± S.D	44.61	46.76		
T_4 Mg/dl	$\bar{X}$	8.72	10.93	1.41	> 0.05
	± S.D	1.93	4.19		
TSH	$\bar{X}$	3.31	3.58	0.39	> 0.05
milli Iu/L	± S.D	2.10	1.43		
Cortisol Mg/dl	$\bar{X}$	21.23	34.96	2.20	< 0.05
	± S.D	13.69	15.23		
Cholesterol	$\bar{X}$	176.50	199.78	1.36	> 0.05
Mg/dl	± S.D	37.82	41.83		
HDL	$\bar{X}$	39.75	37.32	0.28	> 0.05
Mg/dl	± S.D	26.05	18.04		
LDL	$\bar{X}$	96.13	113.11	1.10	> 0.05
Mg/dl	± S.D	31.13	38.62		
Triglycride	$\bar{X}$	169.25	206.83	2.56	< 0.05
Mg/dl	± S.D	28.13	43.07		

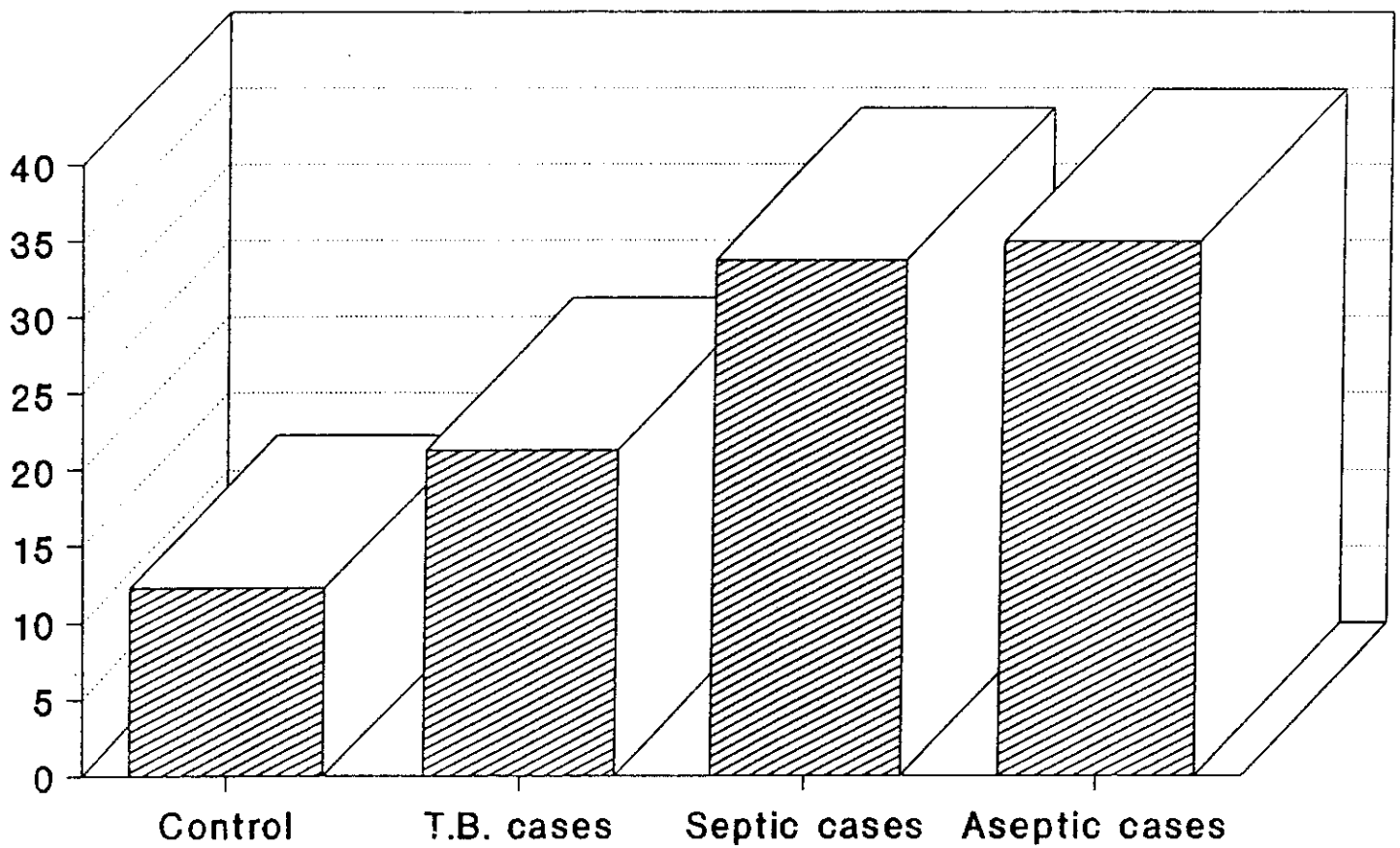

Fig.(1): Comparison between cortisol changes in various studied groups with control.

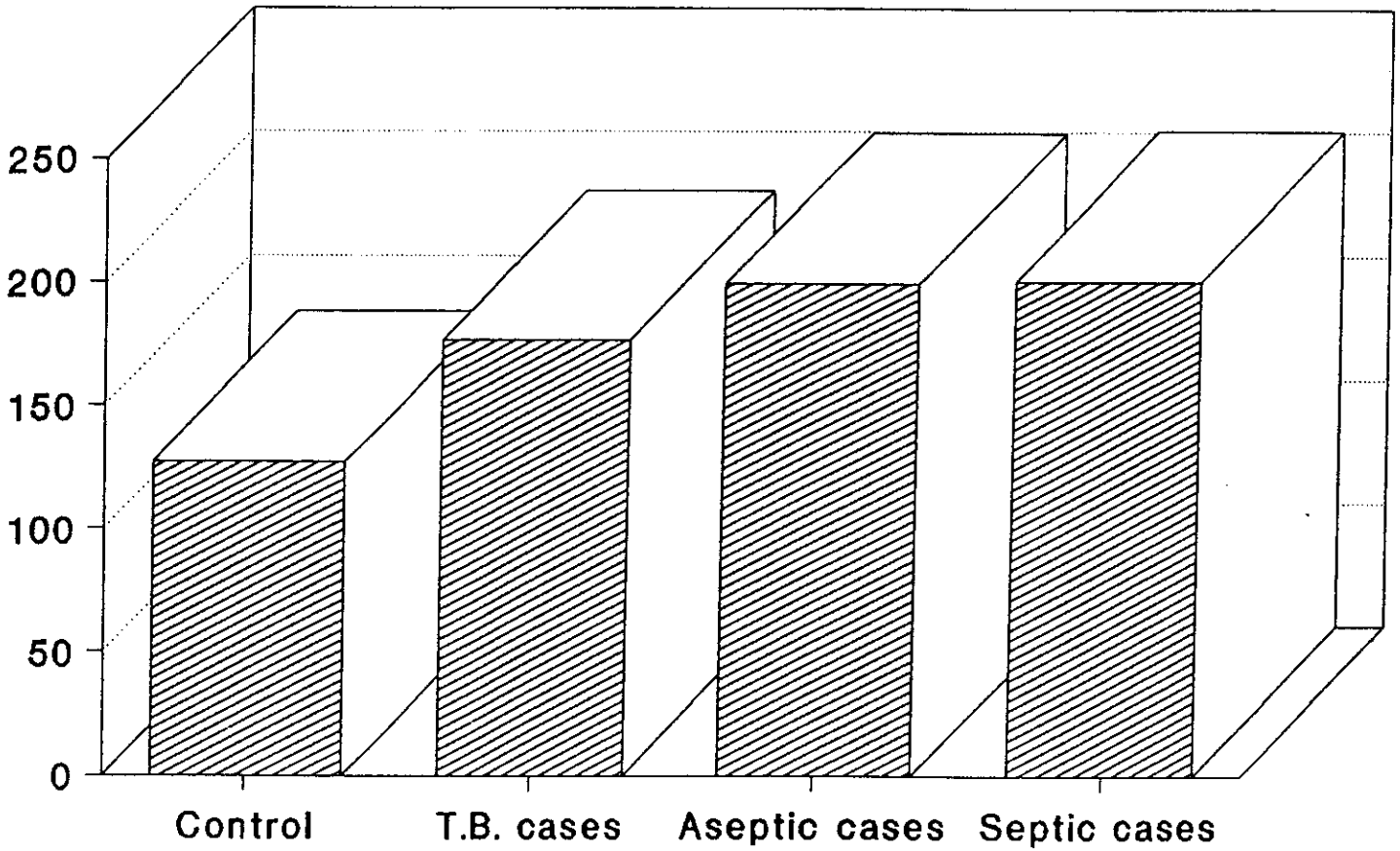

Fig.(2): Comparison between cholesterol changes in various studied groups with control.

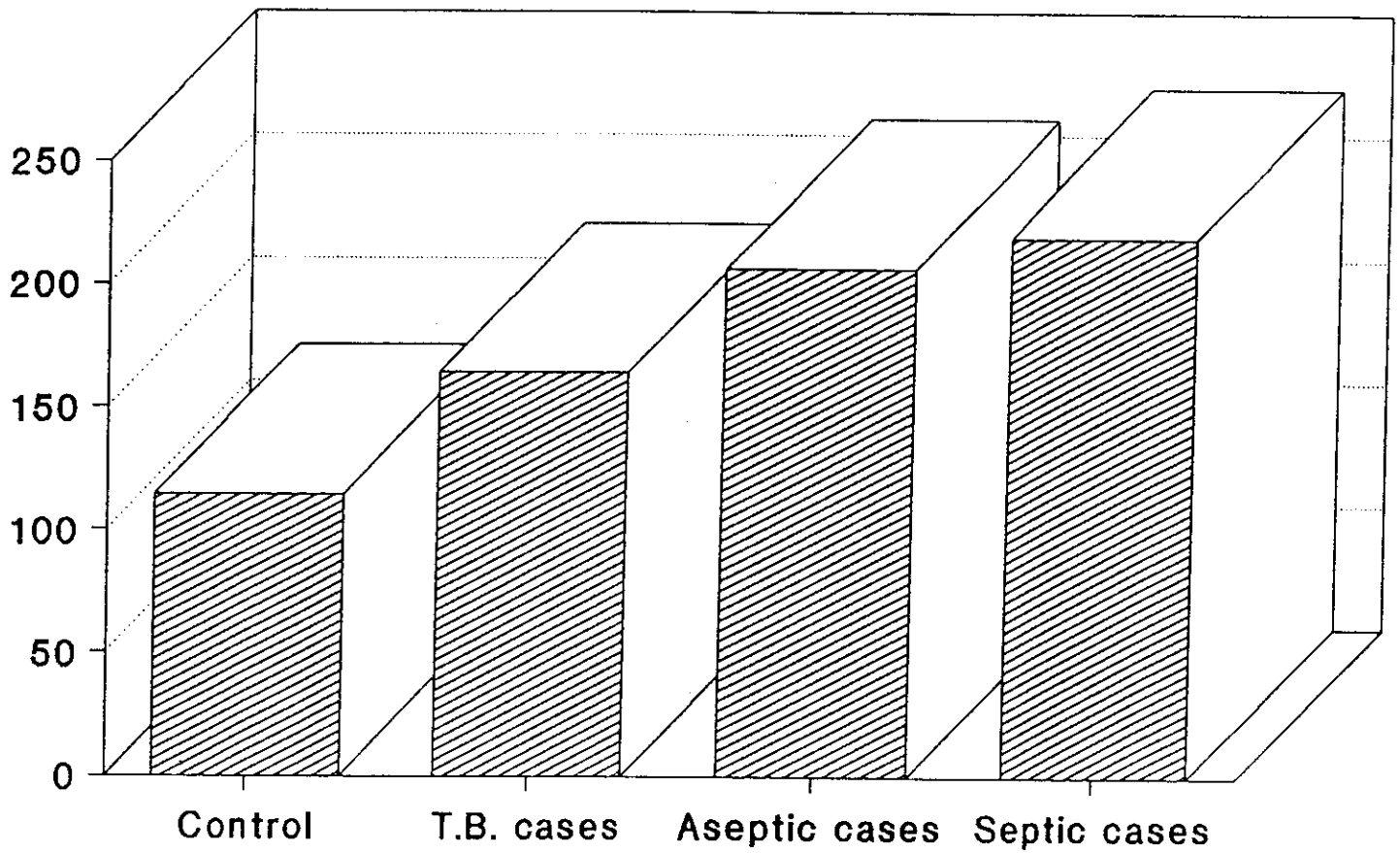

Fig.(3): Comparison between triglysride changes in various studied groups with control.

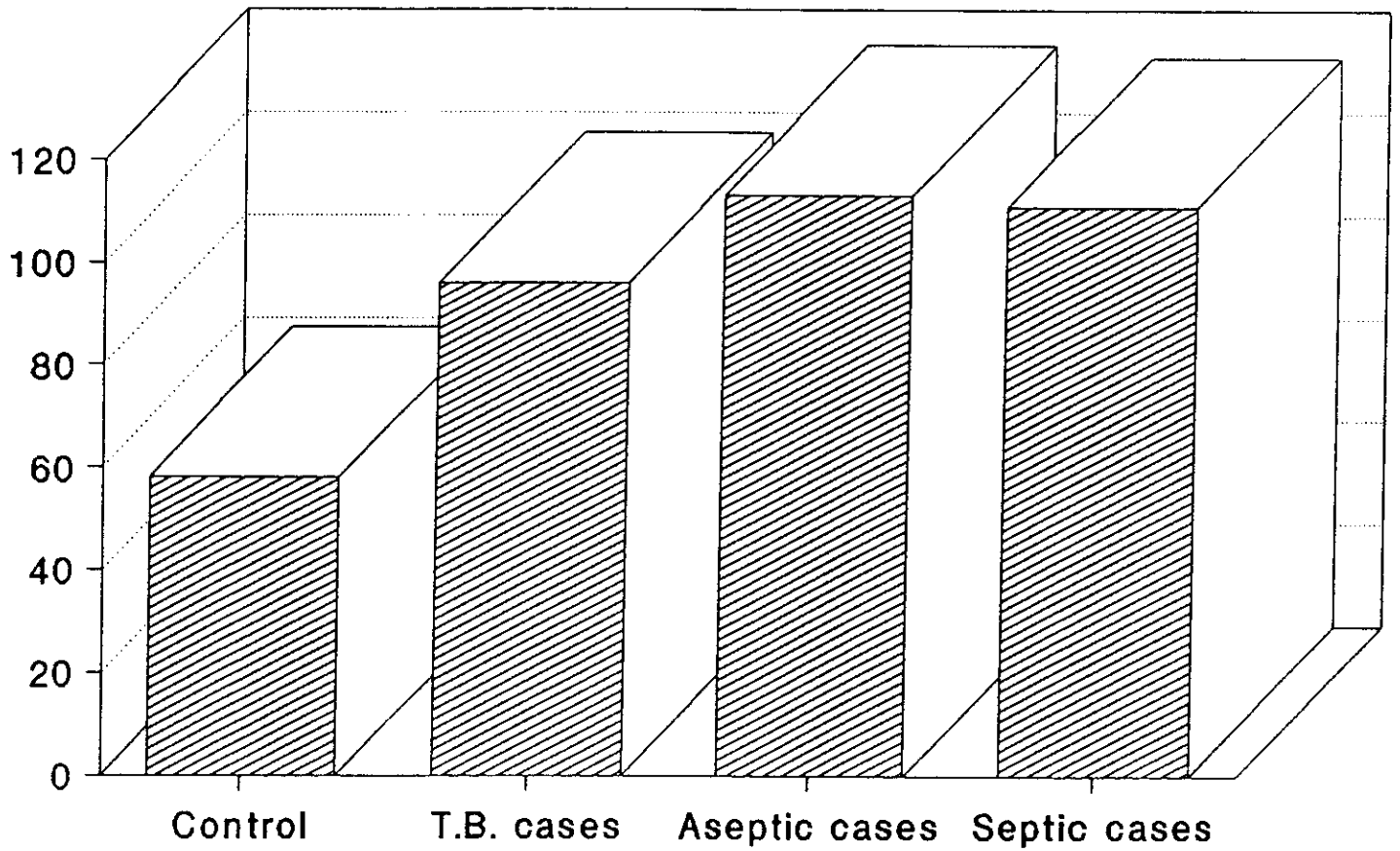

Fig.(4): Comparison between low density lipoprotiens (LDL) changs in studied groups and control.