

RESULTS

ANALYSIS OF THE RESULTS

Tables 1 to 7 show the descriptive statistics for the different groups under the study.

Table "8" shows the statistical analysis of the levels of AST in the different studied groups as compared to the control group, where its mean level in chronic active hepatitis group was the highest one (307 U/L), its standard deviation was ± 396 and its standard error was 102. There was a significant difference between AST level in the control group and its level in all the other studied groups ($P < 0.05$).

Table "9" shows the percentage of AST elevations in the studied groups as compared to the control group at cut - off point of 50 U/L (the normal value).

It showed that the highest percentage of elevations were in acute hepatitis group (100% i.e. 12 of 12 cases, where its mean level was 141, its standard deviation was ± 70 and it ranged between 60 and 275 U/L.

Table "10" shows the percentage of ALT elevations in the different studied groups as compared to the control group at cut - off value of 50 U/L.

The highest percentages were found in acute hepatitis group (100% i.e 12 of 12 cases) where its level ranged between 75 and 581 U/L, its mean level was 200 U/L and its standard deviation was ± 125 .

Table "11" shows the statistical analysis of the levels of ALT in U/L in the different groups as compared to the control group.

There was a significant difference between ALT level in the control group and its level in the other studied groups ($P < 0.05$).

Table "12" shows the percentage of ALP elevations in U/L in the different studied groups as compared to the control group at mean point of 140 U/L.

The highest percentage of elevations was present in acute hepatitis group (83% i.e 10 of 12 cases), where its mean level was 237, its level ranged between 110 and 430 mg/dl and its standard deviation was ± 102 .

Table "13"; shows the statistical analysis of ALP levels in U/L in the different studied groups as compared to the control group.

It shows that there is significant difference between ALP level in the control group and its level in all other groups ($P < 0.05$).

Table "14" shows the percentage of elevations of total bilirubin in mg/dl in the different studied groups as compared to the control group at mean value of 1.0 mg/dl.

The acute hepatitis group showed the highest percentage of total bilirubin elevation (75% i.e 9 of 12 cases) where its level ranged between 0.9 and 10.9 mg/dl, its mean level was 3.8 mg/dl and its standard deviation was ± 3.4 .

Table "15", shows the statistical analysis of total bilirubin levels in mg/dl in the different studied groups as compared to the control group.

There was a significant difference between its level in the control group and in the other studied groups.

Table "16"; shows the percentage of total protein abnormalities in gm / dl in the different studied groups as compared to the control group at the normal mean level of 6.5 gm/dl.

It showed that the veno - occlusive disease group had the highest percentage of total protein abnormality (60% i.e 3 of 5 cases, where its mean level was 6.6 gm / dl, its level ranged between 5.9 and 8.0 gm/dl and its standard deviation was ± 0.9

There was no significant difference between total protein level in the control group and its level in the other groups except the bilharzial group where p value was less than 0.01 i.e highly significant difference.

Table "17", shows the statistical analysis of total protein levels in gm/dl in the different studied groups as compared to the control group.

It showed that the bilharzial group was the only one that showed significant difference as compared to the control group in total protein level.

Table "18" shows the percentage of albumin abnormality in gm/dl in the different studied groups as compared to the control group at cut - off point of 3.5 gm / dl.

This table showed that, acute hepatitis group had the highest percentage of abnormality (67% i.e 8 of 12 cases), where its level ranged between 3.0 and 4.3 , its mean level was 3.4 gm / dl and its standard deviation was 0.45.

Table "19" shows statistical analysis of albumin levels in gm/dl in the different studied groups as compared to the control group.

There was a significant difference between albumin level in the control group and its level in acute hepatitis, chronic active hepatitis and malignant liver groups, while there was no significant difference between its level in the control group and in the bilharzial, glycogen storage disease and veno - occlusive disease groups.

Table "20"; shows statistical analysis of the levels of CA50 in the different studied groups as compared to the control group.

There was a significant difference between the level of CA50 in the control group and its level in the other groups except the bilharzial one.

Table "21", shows the percentage of CA50 positivity in the different groups as compared to the control group at cut - off point of 17 U/ml.

The highest percentage of positivity was present in the malignant group (78.8% i.e 15 of 19 cases), where CA50 level ranged between

7.0 and 220 U/ml, its mean level was 107 U/ml, while the standard deviation was ± 72 .

The highest rate of false positive cases was found in chronic active hepatitis (73% i.e 11 of 15 cases), where CA50 concentrations ranged between 8 and 164 U/ml, its mean level was 45.3, while its standard deviation was ± 48 and its standard error was 12.5

Table "22"; shows the sensitivity, specificity, positive predictive value and negative predictive value of CA50 in the malignant group compared to the control group.

Table "23" shows the sensitivity, specificity, positive predictive value and negative predictive value of CA50 in the malignant group compared to the non-malignant liver diseases.

Table (24) shows the statistical analysis of the levels of AST, ALT, ALP, T.Bil., T.P., Albumin and CA50 in the non - malignant liver group as compared to the malignant liver group.

There were significant difference between AST., T.P., Albumin and CA50 in the non - malignant and malignant liver groups, while ALT, ALP and T.Bil showed non significant difference between the two groups.

Figure "1" shows the serum concentrations of CA50 in U/ml in the different groups.

The cut - off value is marked as dashed line.

As regard CA 50 at 17 U/ml cut - off value , it was found that :

- 1- In the control group 3 of 19 cases were above the cut - off value.
- 2- In acute hepatitis group 7 of 12 cases were above the cut - off value.
- 3- In chronic active hepatitis group 11 of 15 cases were above the cut - off value.
- 4- In Bilharzial group 5 of 13 cases were above the cut - off value.
- 5- In veno - occlusive disease group 3 of 5 cases were above the cut - off value.
- 6- In Glycogen storage disease group 2 of 6 cases were above the cut - off value.
- 7- In the Malignant liver group 15 of 19 cases were above the cut - off value (17 U/ml).

Figure "2" shows the serum concentrations of AST in U/L in the different studied groups. The normal value is marked as dashed line.

Figure "3"; shows the serum concentrations of ALT in U/L in the different studied groups. The normal value is marked as dashed line.

Figure "1" shows the serum concentrations of CA50 in U/ml in the different groups.

The cut - off value is marked as dashed line.

As regard CA 50 at 17 U/ml cut - off value , it was found that :

- 1- In the control group 3 of 19 cases were above the cut - off value.
- 2- In acute hepatitis group 7 of 12 cases were above the cut - off value.
- 3- In chronic active hepatitis group 11 of 15 cases were above the cut - off value.
- 4- In Bilharzial group 5 of 13 cases were above the cut - off value.
- 5- In veno - occlusive disease group 3 of 5 cases were above the cut - off value.
- 6- In Glycogen storage disease group 2 of 6 cases were above the cut - off value.
- 7- In the Malignant liver group 15 of 19 cases were above the cut - off value (17 U/ml).

Figure "2" shows the serum concentrations of AST in U/L in the different studied groups. The normal value is marked as dashed line.

Figure "3"; shows the serum concentrations of ALT in U/L in the different studied groups. The normal value is marked as dashed line.

Figures 4 to 10 show the mean values of AST, ALT, ALP, total bilirubin, total protein, albumin and CA50 in the different groups respectively.

Table (1) :

Descriptive Statistics for the Control Group

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	22	25	95	0.6	7.0	4.8	5.0
2	30	25	82	0.7	6.8	4.5	5.0
3	28	35	110	0.8	6.5	4.5	10
4	40	45	125	0.9	6.0	3.8	17
5	25	30	85	0.7	7.0	4.3	6
6	38	45	130	0.8	6.0	3.8	16
7	30	35	85	0.6	7.0	4.0	10
8	50	45	138	0.9	6.0	3.3	19
9	22	28	90	0.8	7.2	3.5	10
10	30	35	100	0.7	6.2	3.6	12
11	28	30	88	0.6	6.5	3.6	9.0
12	30	37	115	0.7	6.7	3.7	11
13	50	45	125	0.8	6.0	3.5	15
14	45	42	110	0.7	6.8	3.8	11
15	25	30	75	0.5	7.0	3.8	2
16	30	32	90	0.7	6.5	3.5	4
17	48	49	130	0.9	6.5	3.2	30
18	35	25	85	0.6	6.7	3.8	3
19	40	42	120	0.8	6.5	3.4	10
Range	30	71	108	0.4	1.2	1.6	17
Mean	34	36	104	0.7	6.6	3.8	10.8
*SD	8.9	7.7	19.2	0.11	0.37	0.43	6.49
*SE	2.1	1.8	4.4	0.02	0.08	0.10	1.49

* SD = Standard Deviation

* SE = standard Error

Table (2) :**Descriptive Statistics for Acute Hepatitis Group**

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	65	145	115	1.5	7.2	4.0	11
2	56	135	235	4.0	6.0	3.1	8
3	160	162	215	2.7	6.8	3.3	53
4	150	170	385	4.5	7.0	3.2	20
5	254	181	436	10.9	6.2	3.4	18
6	128	581	390	8.8	6.0	3.0	210
7	89	75	160	1.4	7.0	3.4	9.0
8	275	284	180	1.0	6.8	3.3	230
9	178	208	194	1.0	6.0	3.0	63
10	72	100	169	1.4	7.0	4.1	10
11	150	172	145	0.9	7.2	4.3	11
12	118	197	225	7.9	6.0	2.9	195
Range	219	506	321	10	1.2	1.4	222
Mean	141.3	200	237	3.8	6.6	3.4	69.8
SD	70	125.4	101.8	3.4	0.49	0.45	83.9
SE	19.3	36.2	29.4	0.97	0.14	0.13	24.2

Table (3) :**Descriptive Statistics For Chronic Active Hepatitis Group**

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb</i>	<i>CA50</i>
1	123	304	287	7.9	3.8	3.2	54
2	147	120	270	6.0	3.2	6.7	75
3	501	306	110	7.2	3.5	8.0	16
4	1360	2980	165	6.8	3.1	14.0	164
5	142	132	168	8.0	4.4	1.0	17
6	167	192	124	6.0	2.8	4.2	26
7	1200	2630	168	6.8	3.4	9.8	158
8	37	76	158	6.9	3.8	1.1	12
9	90	67	160	7.2	3.9	0.9	19
10	180	120	158	6.0	2.8	3.2	25
11	160	180	283	6.4	3.1	5.4	31
12	105	75	167	7.0	4.0	1.0	21
13	185	192	150	6.5	3.0	3.0	21
14	172	195	279	6.0	2.9	6.3	33
15	35	25	131	7.5	3.5	0.7	8.0
Range	1333	2960	177	6.4	1.6	13.8	156
Mean	306.9	506.3	185.2	6.8	3.4	4.6	45.3
SD	396.3	907.2	59.4	0.65	0.47	3.8	48.2
SE	102.3	234.2	15.3	0.17	0.12	0.98	12.5

Table (4) :**Descriptive Statistics for bilharzial liver fibrosis group**

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	38	57	155	0.5	7.5	4.0	38
2	75	102	258	1.2	6.5	2.9	19
3	130	105	110	2.0	7.6	3.5	9.0
4	98	102	85	1.9	7.4	3.3	8.0
5	88	150	85	0.8	6.0	2.8	18.5
6	43	45	89	0.7	7.5	4.0	8.5
7	72	56	121	0.9	8.0	3.8	6.5
8	120	180	160	2.0	6.0	3.0	17
9	60	95	260	1.0	6.5	2.8	21
10	38	57	150	0.6	7.0	4.0	37
11	20	31	120	0.7	8.0	4.0	6.0
12	45	55	164	0.6	8.0	4.2	7.8
13	48	40	60	0.8	7.5	4.5	8.0
Range	110	149	200	1.5	8.0	1.7	32
Mean	67.3	82.7	140.0	1.05	7.2	3.6	15.7
S.D	32.4	43.1	59.7	0.53	0.7	.65	10.6
S.E	9.0	11.9	16.6	0.15	0.2	0.16	2.90

Table (5) :

Descriptive Statistics for glycogen-storage disease

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	411	383	152	4.0	6.8	4.0	17
2	176	147	85	1.0	7.4	4.3	6.0
3	147	100	120	0.8	6.0	3.0	49
4	245	200	520	0.6	6.5	3.0	12
5	282	223	95	1.0	6.7	4.1	19
6	188	135	110	0.8	7.5	4.0	16
Range	264	283	435	3.4	1.5	1.4	43.5
Mean	241.5	198	180.0	1.36	6.8	3.7	19.8
S.D	88.0	92.2	153.3	1.2	0.5	0.5	13.7
S.E	35.9	37.6	26.6	0.48	0.21	0.22	5.6

Table (6) :

Descriptive Statistics for veno-occlusive disease group

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	20	34	70	1.0	7.5	4.0	15
2	165	244	165	1.2	5.8	2.6	57
3	200	154	170	1.5	6.0	2.5	59
4	30	25	100	0.8	8.0	4.0	14
5	245	288	159	1.3	5.9	2.7	58
Range	225	263	100	0.7	2.3	4.0	45
Mean	132	149	132.8	1.2	6.6	3.2	40.6
S.D	91.0	106.7	40.3	0.24	0.92	0.69	21.3
S.E	40.7	47.7	18.0	0.11	0.41	0.31	9.5

Table (7) :

Descriptive Statistics for malignant liver disease group

<i>Case No.</i>	<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>ALb.</i>	<i>CA50</i>
1	124	135	450	10.4	6	2.8	220
2	35	38	95	0.8	7	3.5	7.0
3	120	130	193	1.0	6.1	3.0	45
4	40	32	85	0.7	6.5	3.4	12
5	87	90	80	0.8	7	3.5	15
6	125	135	294	5.9	6.2	3.0	50
7	145	162	130	1.1	5.9	2.8	200
8	38	40	120	0.6	6.5	3.4	10
9	40	41	90	0.7	6.7	3.5	40
10	145	165	289	4.7	6.0	3.0	65
11	43	55	103	0.8	6.8	3.4	120
12	152	220	340	6.3	5.9	3.0	170
13	34	38	85	0.6	7.0	4.0	140
14	182	208	422	5.8	5.8	2.7	180
15	32	40	92	0.7	6.5	3.4	94
16	43	50	89	0.8	7.0	3.5	150
17	92	130	180	1.0	6.0	3.0	190
18	35	42	75	0.8	7.0	3.6	160
19	168	192	420	7.2	5.7	2.8	170
Range	150	188	375	9.8	1.3	2.5	213
Mean	88.4	102.2	191.1	2.7	6.4	3.2	107.2
S.D	52.4	63.9	129.7	2.9	0.46	0.34	71.8
S.E	12.04	14.7	29.76	0.67	0.11	0.08	16.5

Table (8) :

Statistical analysis of the levels of AST in U/I in the different studied groups as compared to the control group

<i>Group</i>	<i>Number</i>	<i>X ±SD</i>	<i>T</i>	<i>*P</i>
Control	19	33.73 ± 8.9	-	-
Acute Hepatitis	12	141.25 ± 70	6.67	< 0.01
Chronic Active Hepatitis	15	307 ± 396	2.9	< 0.05
Bilharzial Liver Fibrosis	13	67.30 ± 32.4	4.13	< 0.01
Glycogen Storage Disease	6	241.5 ± 88.0	9.70	< 0.001
Veno- occlusive Disease	5	132 ± 91.0	4.418	< 0.01
Malignant Liver Group	19	88.42 ± 52.4	4.35	< 0.001

* Based on the Comparison with the control group

P< 0.05 (significant)

P> 0.05 (Non- significant)

Table (9) :

The percentage of AST elevations in the different studied groups as compared to the control group at cut-off point of 50 U/l

Group	Number of patients	AST > 50 U/L		M ± SD	T	*P	Range
		Number	Percentage				
Control Group	19	0	0	33.7 ± 8.9	-	-	(20-50)
Acute Hepatitis	12	12	100	141.2 ± 70	6.67	< 0.01 (S)	(60-275)
Chronic Active Hepatitis	15	13	87	307 ± 39.6	2.9	< 0.05 (S)	(35-1360)
Bilharzial Liver Fibrosis	13	8	62	67.3 ± 32.4	4.1	< 0.01 (S)	(20-130)
Veno-occlusive Disease	5	3	60	132 ± 88.0	4.418	< 0.01 (S)	(25-250)
Glycogen Storage Disease	6	6	100	241 ± 91.0	9.7	< 0.001 (S)	(140-420)
Malignant Liver Group	19	10	53	88.4 ± 52.4	4.3	< 0.001 (S)	(35- 220)

* Based on the Comparison with the control group

P < 0.05 (significant)

P > 0.05 (non- significant)

Table (10)

The percentage of ALT elevations in U/I in the different studied groups as compared to the control group at cut-off point of 50 U/I

<i>Group</i>	<i>Number</i>	<i>ALT > 50 U/L</i>		<i>M ± SD</i>	<i>T</i>	<i>*P</i>	<i>Range</i>
		<i>Number</i>	<i>Percentage</i>				
Control Group	19	0	0	36.0 ± 7.7	-	-	(24-50)
Acute Hepatitis	12	12	100	200 ± 125.4	5.4	< 0.001 ¹ (S)	(75-581)
Chronic Active Hepatitis	15	14	93	506.3 ± 907.2	2.185	< 0.05 (S)	(30-2980)
Bilharzial Liver Fibrosis	13	10	77	82.7 ± 43.1	4.08	< 0.01 (S)	(40-180)
Glycogen Storage Disease	6	6	100	198 ± 92.2	7.28	< 0.02 (S)	(100-390)
Veno-occlusive Disease	5	3	60	149 ± 106.7	4.13	< 0.01 (S)	(25-290)
Malignant Liver Group	19	12	70.5	102 ± 63.9	3.1	< 0.01 (S)	(33-200)

* Based on the Comparison with the control group

¹S = significant

Table (11):

Statistical analysis of the the levels of ALT in U/l in the different studied groups as compared to the control group.

<i>Group</i>	<i>Number</i>	<i>X ± SD</i>	<i>T</i>	<i>P</i>
Control	19	36.0 ± 7.7	-	-
Acute Hepatitis •	12	200 ± 125.4	5.42	< 0.001
Chronic Active Hepatitis •	15	506.6 ± 907.2	2.185	< 0.05
Bilharzial Liver Fibrosis •	13	82.7 ± 43.1	4.08	< 0.001
Glycogen Storage Disease	6	198 ± 92.2	7.28	< 0.05
Veno- occlusive Disease	5	149 ± 106.7	4.13	< 0.01
Malignant Liver Group	19	102.2 ± 63.9	3.1	< 0.01

Table (12)

The percentage of ALP elevations in U/L in the different studied groups as compared to the control group at cut-off point of 140 U/L

Group	Number	ALP > 140 U/L		$M \pm SD$	T	*P	Range
		Number	Percentage				
Control Group	19	1	5.2	104 $\pm$ 19.2	-	-	(75-150)
Acute Hepatitis	12	10	83	237 $\pm$ 101.8	5.48	< 0.001	(110-430)
Chronic Active Hepatitis	15	12	80	185.2 $\pm$ 59.4	5.42	< 0.01	(110-300)
Bilharzial Liver Fibrosis	13	6	46	140 $\pm$ 59.7	2.44	< 0.02	(60-250)
Glycogen Storage Disease	6	2	33	180.3 $\pm$ 153	2.02	< 0.05	(85-160)
Veno-occlusive Disease	5	3	60	132.8 $\pm$ 40	2.27	< 0.05	(70-250)
Malignant Liver Group	19	9	47	191 $\pm$ 130	2.81	< 0.01	(75-450)

* Based on the Comparison with the control group

Table (13)

Statistical analysis of ALP levels in U/L in the different studied groups as compared to the control group

<i>Group</i>	<i>Number</i>	<i>X ±SD</i>	<i>T</i>	<i>P</i>
Control	19	104.1±19.2	-	-
Acute Hepatitis	12	237±101.8	5.48	< 0.001
Chronic Active Hepatitis	15	185.2±59.4	5.42	< 0.01
Bilharzial Liver Fibrosis	13	140±59.7	2.44	< 0.02
Glycogen Storage Disease	6	180.3±153	2.02	< 0.05
Veno- occlusive Disease	5	132.8±40	2.27	< 0.05
Malignant Liver Group	19	191±130	2.81	< 0.01

Table (14)

The percentage of elevations of total bilirubin in mg/dl in the different studied groups as compared to the control group at cut- off point of 1.0 mg/dl

Group	Number	Total bilirubin >1.0 mg /dl		M $\pm$ SD	T	P	Range
		Number	Percentage %				
Control	19	1	5.2	0.7 $\pm$ 0.1	-	-	(0.6-1.1)
Acute Hepatitis	12	9	75	3.83 $\pm$ 3.4	3.9	< 0.01	(0.9-10.9)
Chronic Active Hepatitis	15	11	73	4.6 $\pm$ 3.8	4.29	< 0.05	(0.7-14.5)
Bilharzial Liver Fibrosis	13	7	54	1.05 $\pm$ 0.53	2.53	< 0.01	(0.5-2.0)
Glycogen storage disease	6	1	17	1.36 $\pm$ 1.2	2.22	< 0.03	(0.5-4.0)
Veno- occlusive disease	5	3	60	1.2 $\pm$ 0.24	5.56	< 0.01	(0.8-1.5)
Malignant liver disease	19	8	42	2.7 $\pm$ 2.9	2.80	< 0.05	(0.6-10.3)

Table (15)

Statistical analysis of total bilirubin levels in mg/ dl in the different studied groups as compared to the control group

<i>group</i>	<i>number</i>	<i>x ±sd</i>	<i>t</i>	<i>p</i>
Control	19	0.73 ± 0.1	-	-
Acute Hepatitis	12	3.8 ± 3.4	3.9	< 0.01
Chronic Active Hepatitis	15	4.6 ± 3.8	4.29	< 0.05
Bilharzial Liver Fibrosis	13	1.05 ± 0.53	2.53	< 0.01
Glycogen storage disease	6	1.36 ± 1.2	2.22	< 0.03
Veno- occlusive disease	5	1.2 ± 0.24	5.56	< 0.01
Malignant Liver disease	19	2.7 ± 2.9	2.80	< 0.05

Table (16)

The percentage of total protein abnormalities in gm/dl in the different studied groups as compared to the control group at cut-off point of 6.5 gm/ dl.

<i>Group</i>	<i>Number</i>	<i>Total protein < 6.5 gm/dl</i>		<i>M ± SD</i>	<i>T</i>	<i>P</i>	<i>Range</i>
		<i>Number</i>	<i>Percentage</i>				
Control	19	1	5.2	6.6 ± 0.37	-	-	(4.6-8.5)
Acute Hepatitis	12	6	50	6.6 ± 0.50	0.13	> 0.05	(6.0-7.4)
Chronic Active Hepatitis	15	5	33	6.8 ± 0.65	1.18	> 0.05	(6.0-7.5)
Bilharzial liver Fibrosis	13	2	15	7.19 ± 0.72	3.11	< 0.01	(6.0 -8.0)
Glycogen Storage disease	6	1	17	6.8 ± 0.50	1.17	> 0.05	(6.0-7.6)
Veno- occlusive disease	5	3	60	6.62 ± 0.9	0.14	> 0.05	(5.9-8.0)
Malignant Liver	19	9	47	6.4 ± 0.46	1.32	> 0.05	(5.6-7.0)

Table (17)

Statistical analysis of total protein levels in gm / dl in the different studied groups as compared to the control group

<i>Group</i>	<i>Number</i>	<i>X ± SD</i>	<i>T</i>	<i>*P</i>
Control	19	6.6 ± 0.37	-	-
Acute Hepatitis	12	6.6 ± 0.51	0.13	> 0.05 • (NS)
Chronic Active Hepatitis	15	6.8 ± 0.65	1.18	> 0.05 (NS)
Bilharzial Liver Fibrosis	13	7.19 ± 0.72	3.17	< 0.01 (S)•
Glycogen storage disease	6	6.81 ± 0.50	1.17	> 0.05 (NS)
Veno- occlusive disease	5	6.62 ± 0.9	0.14	> 0.05 (NS)
Malignant Liver disease	19	6.4 ± 0.46	1.32	> 0.05 (NS)

* Based on the comparison with the control group

• Ns = Non significant

• S = significant

Table (18)

The percentage of albumin abnormalities in gm/dl in the different studied groups as compared to the control group at cut- off point of 3.5 gm /dl

Group	Number	Albumin > 3.5 gm/dl		M ± SD	T	*P	Range
		Number	Percentage				
Control	19	3	15.8	3.78 ± 0.43	-	-	(3.4-4.7)
Acute Hepatitis	12	8	67	3.41 ± 0.46	0.04	< 0.5 ♦(S)	(3.0-4.3)
Chronic Active Hepatitis	15	8	53	3.4 ± 0.47	2.26	< 0.05 (S)	(2.8-4.2)
Bilharzial liver Fibrosis	13	7	54	3.6 ± 0.47	0.337	> 0.05 (NS)	(2.8-4.5)
Glycogen Storage disease	6	2	33	3.7 ± 0.5	0.27	> 0.05 (NS)	(3.0-4.3)
Veno- occlusive disease	5	3	60	3.2 ± 0.69	2.72	> 0.05 (NS)	(2.5-4.0)
Malignant Liver	19	10	53	2.2 ± 0.34	2.79	< 0.05 (S)	(2.7-4.5)

* Based on the comparison with the control group

♦ S = significant

• Ns = Non significant.

Table (19)

**Statistical analysis of albumin levels in gm/dl in
different studied groups as compared to the control group**

<i>Group</i>	<i>Number</i>	<i>X ± SD</i>	<i>T</i>	<i>*P</i>
Control	19	3.78 ± 0.43	-	-
Acute Hepatitis	12	3.41 ± 0.46	0.040	< 0.05
Chronic Active Hepatitis	13	3.41 ± 0.47	2.26	> 0.05 •(S)
Bilharzial Liver Fibrosis	15	3.6 ± 0.56	0.337	< 0.05 (S)
Glycogen Storage Disease	6	3.7 ± 0.50	0.27	< 0.05 •(NS)
Veno- occlusive Disease	5	3.2 ± 0.69	2.72	< 0.05 (NS)
Malignant Liver Group	19	3.30 ± 0.34	2.79	< 0.05 (S)

* Based on the comparison with the control group

• Ns = Non significant

• S = significant

Table (20)

The percentage of CA50 positivity in the different studied groups as compared to the control group at cut-off 17 U/l

Group	Number	CA 50 > 17 U/ml		Mean $\pm$ S.D	* P value	Range
		Number	%			
Control Group	19	3	15.8	10.8 $\pm$ 6.5	-	3-33 U/ml
Acute Hepatitis	12	7	58	69.8 $\pm$ 84.0	< 0.01 ♦ (S)	8-200 U/ml
Chronic Active Hepatitis	15	11	73.3	45.3 $\pm$ 48.2	< 0.01 (s)	8-164 U/ml
Bilharzial Liver Fibrosis	13	5	38	15.7 $\pm$ 11	> 0.05 ♦ (Ns)	4-38 U/ml
Glycogen Storage Disease	6	2	33.3	19.8 $\pm$ 13.7	< 0.05 (s)	6-49 U/ml
Veno-Occlusive Disease	5	3	60	4.6 $\pm$ 21.3	< 0.01 (s)	14-60 U/ml
Malignant Liver Disease	19	15	78.8	107.3 $\pm$ 71.05	< 0.01 (s)	9-220 U/ml

* Based on the comparison with the control groups

♦ (s) = Significant

(Ns) = Non significant

Table (21)

Statistical analysis of the levels of CA50 in the different studied groups as compared to the control group

<i>Group</i>	<i>Number</i>	<i>X ±SD</i>	<i>T</i>	<i>P</i>
Control	19	10.8 ± 6.5	-	-
Acute Hepatitis	12	69.8 ± 83.9	2.95	< 0.01
Chronic Active Hepatitis	13	15.72 ± 11	1.59	> 0.05
Bilharzial Liver Fibrosis	15	45.3 ± 48.2	2.997	< 0.01
Glycogen Storage Disease	6	19.8 ± 13.7	2.124	< 0.05
Veno- occlusive Disease	5	40.6 ± 21.3	4.23	< 0.01
Malignant Liver Group	19	107.2 ± 71.8	4.2	< 0.01

Table (22)

The sensitivity, specificity, Positive predictive value and negative predictive value of CA50 in the malignant group compared to the control group.

The cut-off value	Sensitivity %	Specificity	Positive predictive value %	Negative predictive value %
17U/ml	79	84	83	80

Table (23)

The sensitivity, specificity, Positive predictive value and negative predictive value of CA50 in the malignant group compared to the non-malignant liver disease groups.

The cut-off value	Sensitivity %	Specificity %	Positive predictive value %	Negative predictive value %
17U/ml	79	49	37	86

Table (24)

Shows the statistical analysis of the levels of AST, ALT, ALP, T.Bil, total protein, albumin and CA50 in the non-malignant liver diseases group as compared to the malignant liver disease group

<i>Group</i>		<i>AST</i>	<i>ALT</i>	<i>ALP</i>	<i>T.Bil</i>	<i>T.P</i>	<i>Albumin</i>	<i>CA50</i>
Non-malignant liver (n = 51)	Mean	182.02	255.07	180.19	2.79	6.84	3.47	40.08
	S.D.	241.32	526.00	93.43	3.10	0.68	0.54	53.41
Malignant liver (n = 19)	Mean	88.40	102.23	191.1	2.67	6.4	3.22	107.26
	S.D.	52.40	63.96	129.73	2.93	0.46	0.34	71.78
t test		2.6	1.9	0.34	0.15	3.1	2.5	3.7
p value		<0.01	> 0.05	> 0.05	> 0.05	< 0.01	< 0.02	< 0.01
significance		* S	+ N S	N S	N S	S	S	S

* Significant

+N S = Non significant

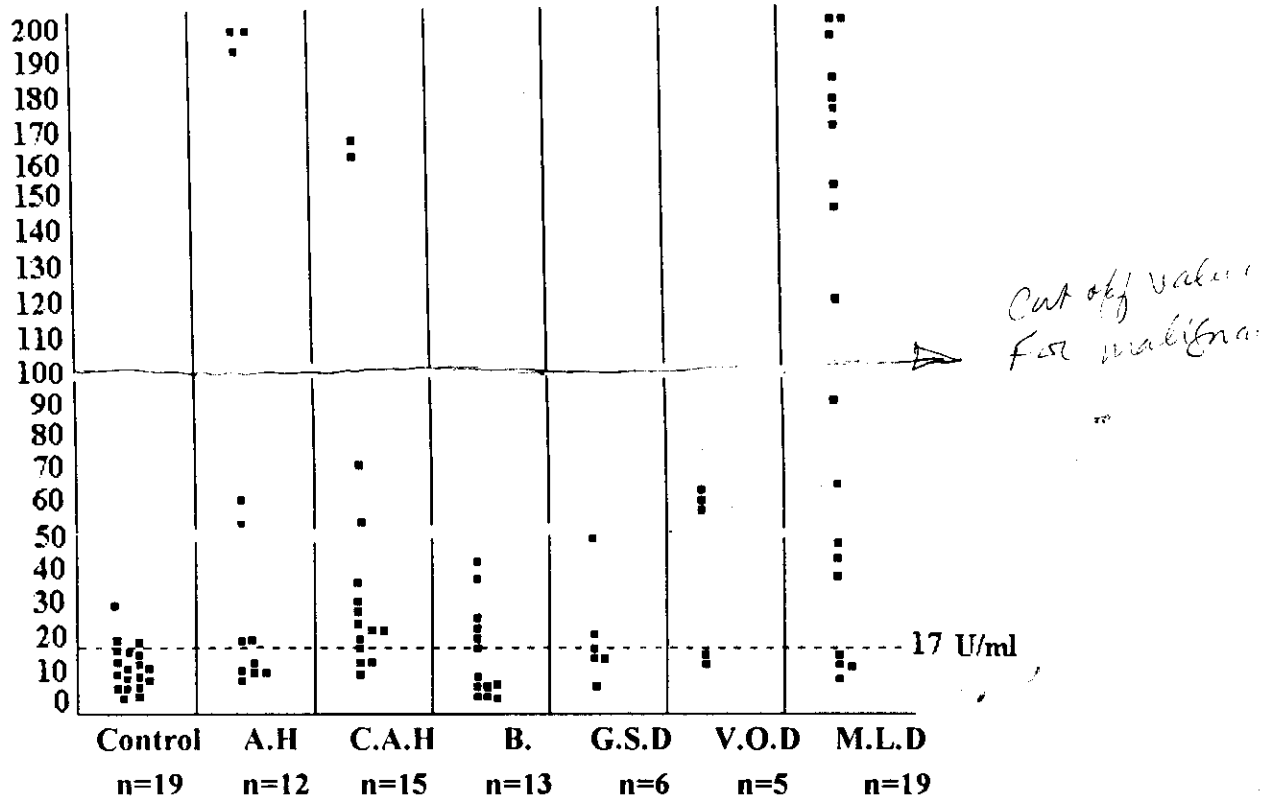


Fig. (1) : Serum concentrations of CA50 in U/ml in control, acute hepatitis (AH), chronic active hepatitis (CAH), bilharzial (B), Glycogen storage disease (GSD), veno-occlusive disease (VOD) and malignant liver disease (MLD) groups.

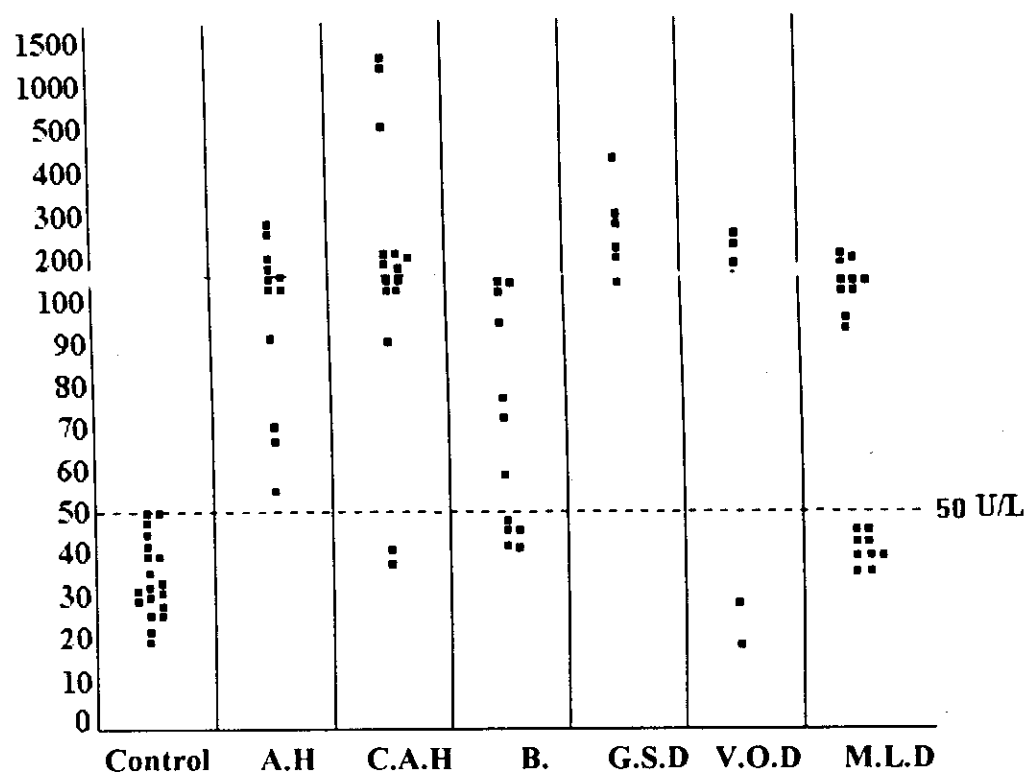


Fig. (2) : Serum concentrations of AST in U/L in the different groups.

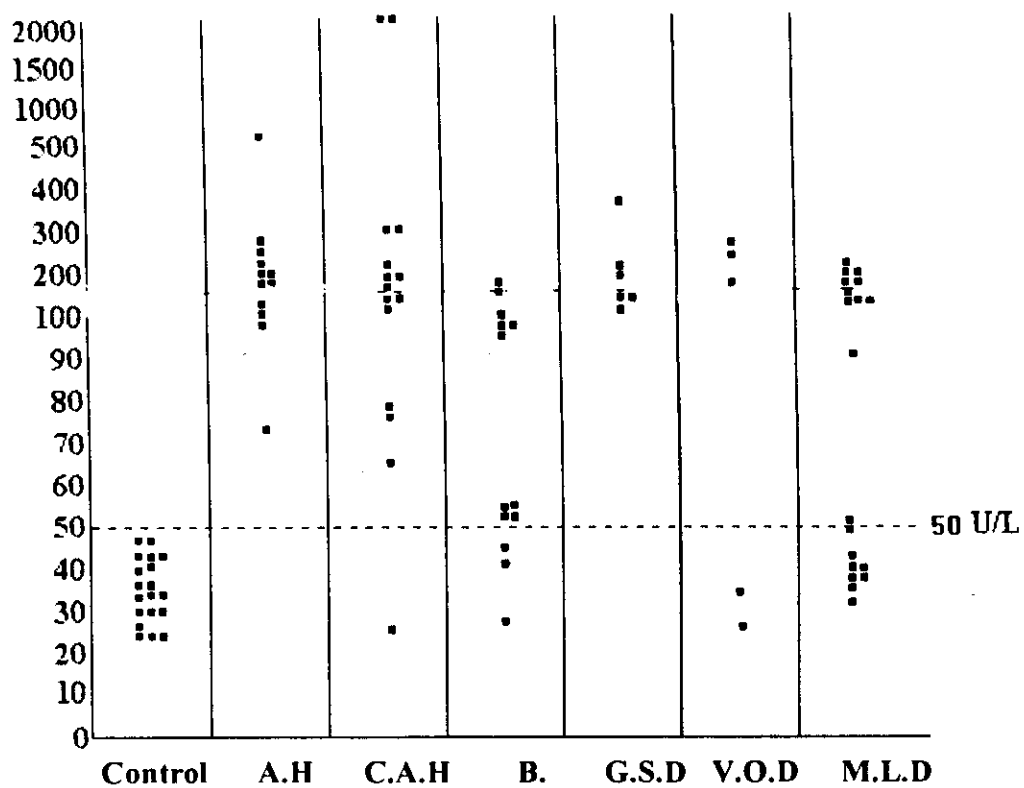


Fig. (3) : Serum concentrations of ALT in U/L in the different groups.

Fig. (4) : Mean values of AST in the different groups

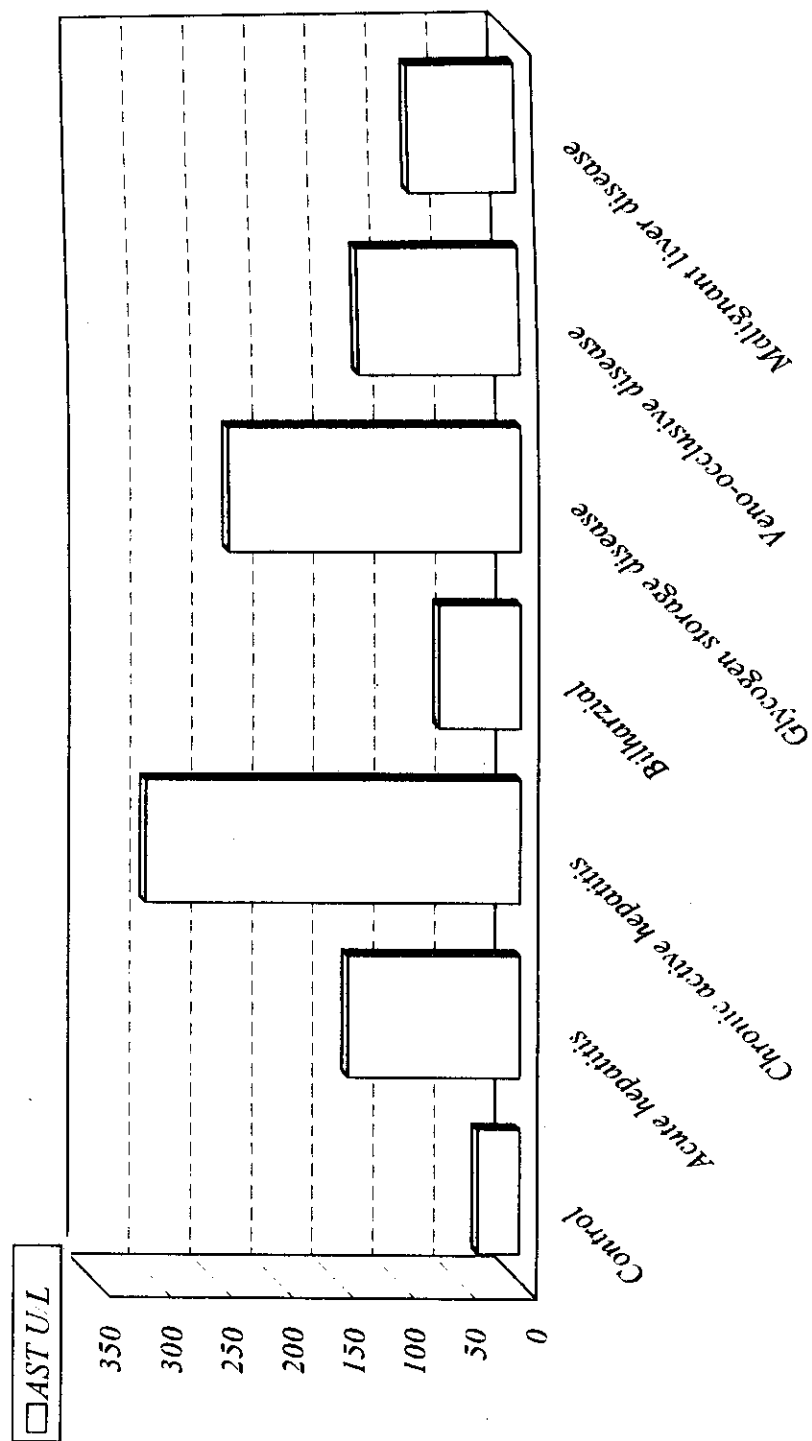


Fig. (5) : Mean values of ALT U/L in the differnt groups

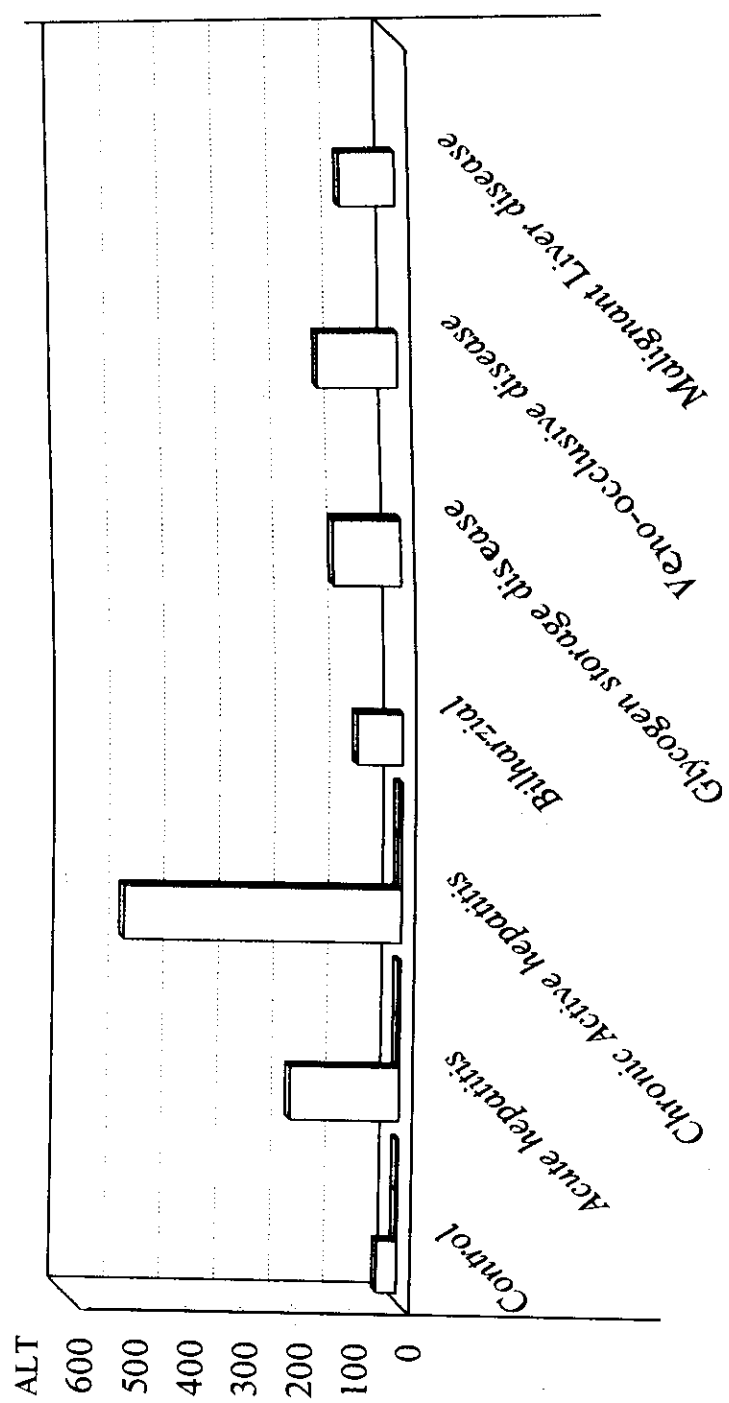


Fig. (6) : Mean values of ALP in the different groups

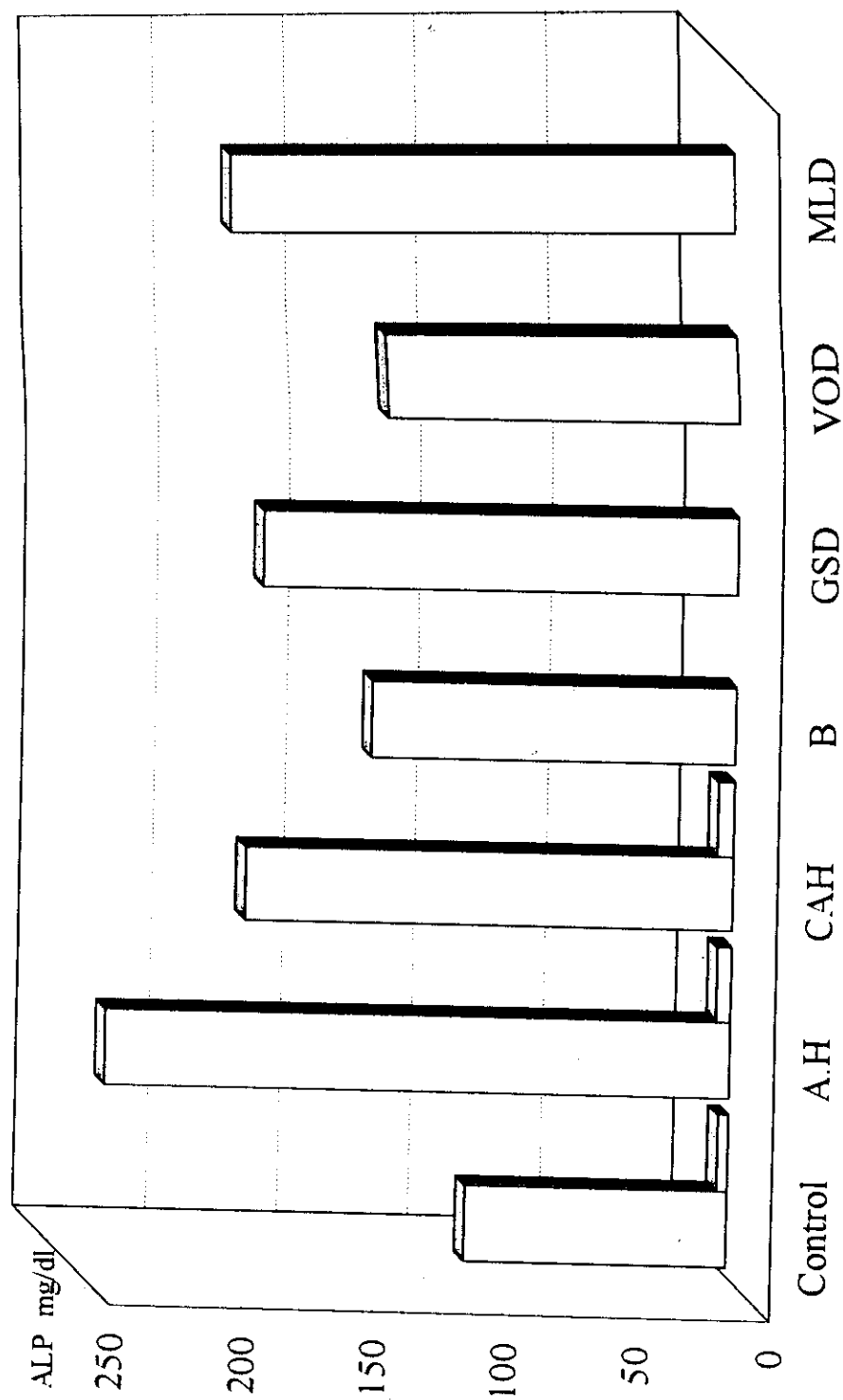


Fig. (7) : Mean values of T.bilirubin mg/dl in the different groups

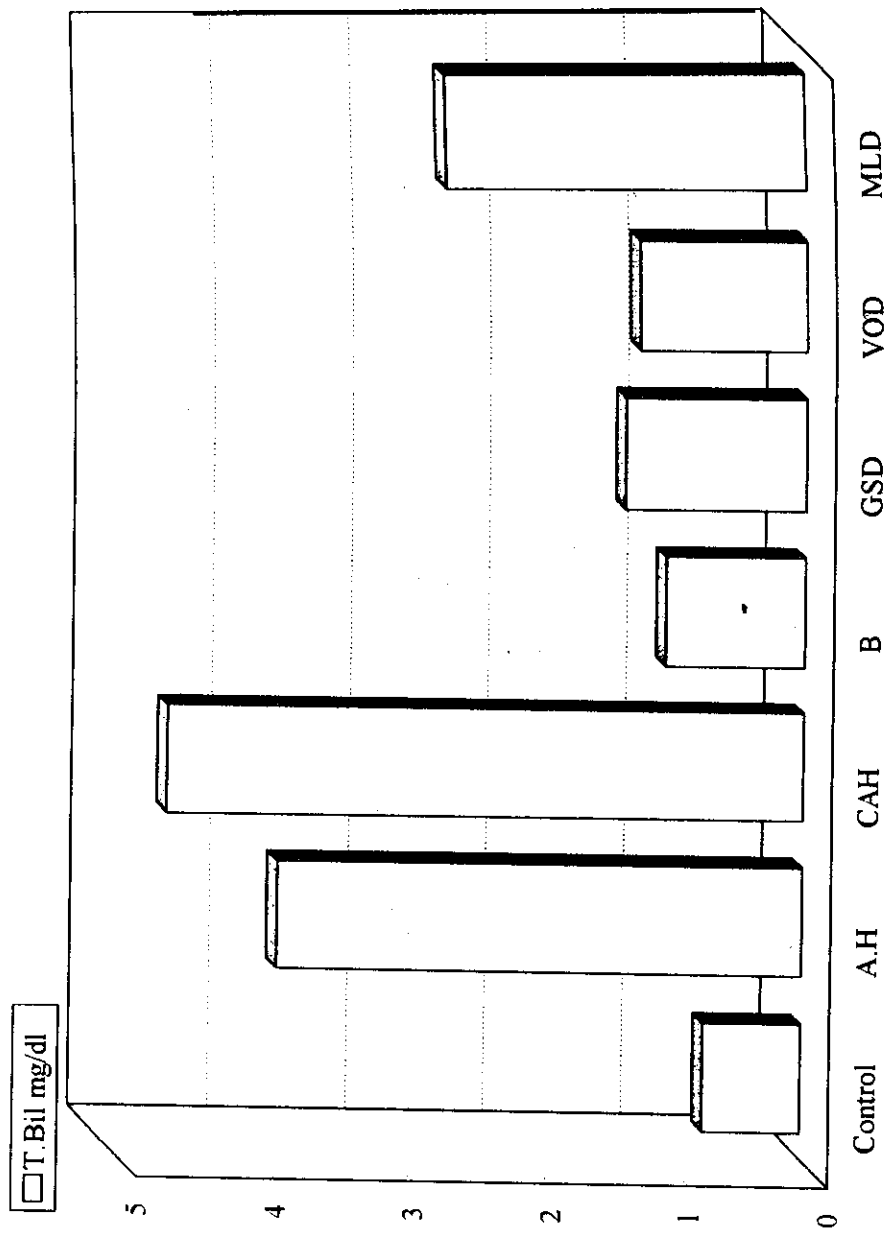


Fig. (8) : Mean values of T.P in the different groups

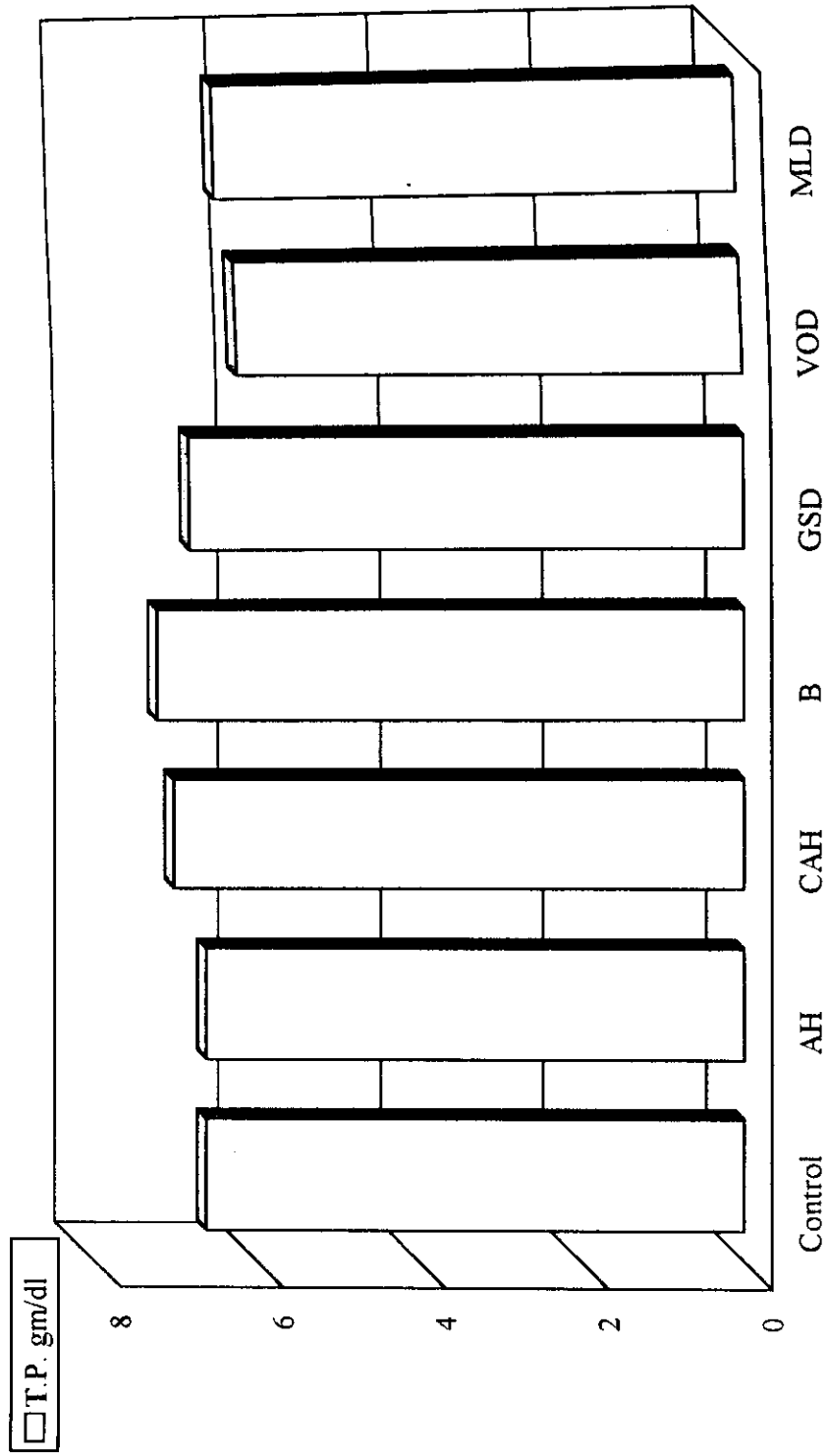


Fig. (9) : Mean values of albumin in the different group

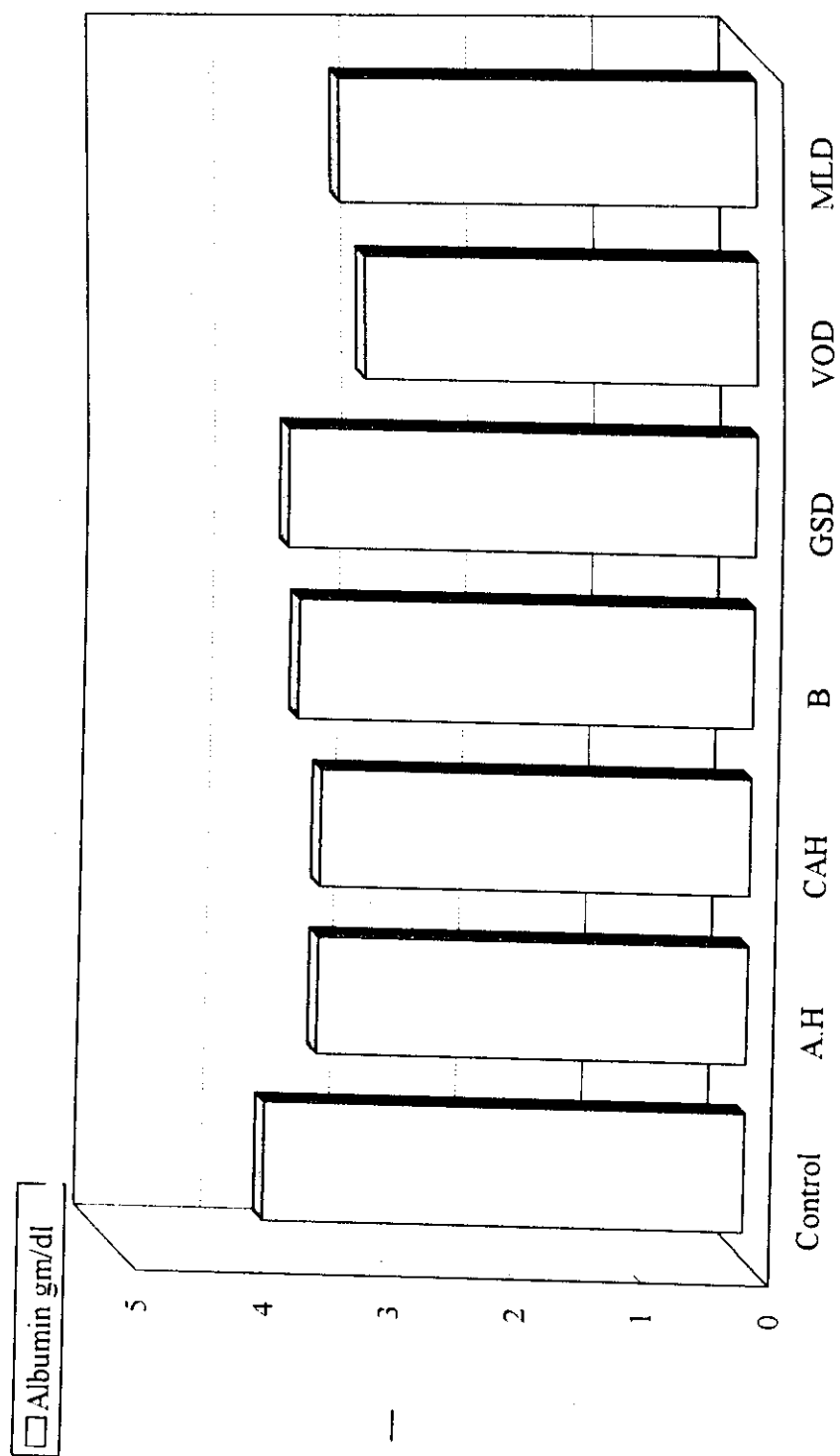


Fig. (10) : Mean values of CA50 in u/ml of the different groups

