RESULTS

A summary of the demographic and clinical data of the patients in the 3 groups and control subjects included in the present study is given in Table (1-4).

Individual laboratory data including plasma endothelin concentrations, liver function tests, renal functions are shown in Table (5-8).

Out of the 25 patients of the group I (Bilharzial hepatic fibrosis), 10 cases (40%) had a history of haematemesis, 10 cases (40%) had no history of haematemesis (non – bleeders), and 5 cases (20%) with functional renal failure (Hepatorenal syndrome) **[Table 1 (A-C) and 5]**

Out of the 25 patients of the group II (Postviral cirrhosis) 7 cases (28%) were cirrhotics without portal hypertension, 6 cases (24%) had a history of haematemesis, 6 cases (24%) were cirrhotics with portal hypertension but with no history of bleeding and 6 cases (24%) were with hepatorenal syndrome **[Table 2 (A-D) and 6]**

In group III (Mixed bilharzial hepatic fibrosis and postviral cirrhosis), out of the 25 cases, 9 cases (36%) had a history of haematemesis, 9 cases (36%) had no history of haematemesis, and 7 cases (28%) were with hepatorenal syndrome **[Table 3 (A-C) and 7]**

Concerning the clinical manifestations, 15 patients in group I (60%) had ascites, 15 patients in group II (60%) also had ascites, whereas 16 patients in group III (64%) had ascites. In group I, 11 patients (44%)

had encephalopathy, and also 11 patients in group II (44%) had encephalopathy and 12 patients in group III (48%) had encephalopathy **(Table 1-3).**

As regards hepatomegaly and splenomegaly, 7 cases (28%) in group I patients had hepatomegaly and 22 patients (88%) had splenomegaly whereas 3 patients (12%) had splenectomy **(Table 1).**

In group II patients, 8 cases (32%) had hepatomegaly, 23 patients (92%) had splenomegaly and 2 patients (8%) had splenectomy **(Table 2).**

In group III patients, there were 8 cases with hepatomegly (32%), 24 cases (96%) with splenomegaly and one patient (4%) had splenectomy **(Table 3).**

As regards the complete blood picture **(Table 9 and 18-20)**, the red blood cells counts of group I patients had a mean value of 4.246 ± 1.04 million/cmm (mean ± SD), while the leucocytic count with a mean value of 5.01 ± 1.24/ cmm (mean ± SD), and platelet count with a mean value of 119.24 ± 61.99/cmm.

Group II patients had a mean RBCs count of 3.92 ± 0.92 million / cmm, leucocytic count with a mean value of 5.42 ± 1.88 /cmm and the platelet count mean value of 105.40 ± 46.60/cmm.

Group III patients had a mean RBCs count of 4.14 ± 0.88 million / cmm, leucocytic count mean of 5.66 ± 3.32 / cmm and the platelet count mean of 112.92 ± 3079/cmm.

The control healthy subjects had RBCs count with a mean 4.85 ± 0.4 million/cmm, WBCs count with a mean 5.51 ± 1.05 / cmm and platelet count with a mean value of 159.90 ± 34.37 / cmm.

There was no significant difference between the patients groups and control healthy subjects as regards the RBCs count ($P > 0.05$).

Also, no significant difference existed between the patients groups and control subject in the WBCs count ($P > 0.05$). While, there was significant increase in patients groups than in controls as regards the platelets count ($P < 0.05$).

The random blood glucose levels of both the patients groups and the healthy controls were within the normal range with means of 104.76 ± 18.39, 110.44 ± 20.92 and 106.24 ± 15.30 mg /dl for the 3 groups of patients respectively, and 96.10 ± 16.16 mg/dl for the healthy controls. No significant difference was found between the patients groups and the control subjects ($P > 0.05$) **(Table 9).**

The blood urea had mean values of 54.00 ± 31.97, 47.68 ± 29.08, 49.80 ± 35.73 and 22.00 ± 1.63 mg/dl in the 3 groups of patients and the control subjects respectively. There was a significant difference between the cases and the control as regards the blood urea level ($P < 0.05$) **(Table 9).**

The serum creatinine levels had mean values of 1.36 ± 0.84, 1.57 ± 0.74, 1.51 ± 0.83 and 0.83 ± 0.14 mg/dl in the 3 groups of patients and the control subjects respectively and there is no significant difference between the patients and the controls ($P > 0.05$) **(Table 9).**

The liver function tests of the 3 groups of patients and the controls were as follows **(Table 9)**.

Total bilirubin mean values are 1.89 ± 0.83, 1.80 ± 0.66, 1.87 ± 0.68 and 0.80 ± 0.13 mg/dl in the 3 groups of patients and the controls respectively.

There was highly significant increase in serum total bilirubin in the patients groups than in the control group ($P < 0.001$). The ALT mean values were 60.36 ± 30.73, 105.64 ± 65.12, 68.24 ± 30.09 and 9.5 ± 2.07 IU/l in the patients groups and the controls respectively. And the AST mean values were 62.08 ± 16.83, 96.96 ± 45.65, 73.28 ± 26.82 and 9.1 ± 1.66 IU/L in the 3 groups of patients and the control subjects respectively.

The ALT ($P < 0.001$) and AST ($P < 0.001$) were significantly higher in the patients groups than in the control group.

The total protein mean values were 6.86 ± 0.59, 6.99 ± 0.51, 6.83 ± 0.38 and 7.84 ± 0.35 gm /dl in the 3 groups of patients and the control group respectively. The total protein was significantly lower in the patients groups than in the control group ($P < 0.001$).

The serum albumin mean values in the 3 patients groups and the control group were 3.49 ± 0.52, 3.20 ± 0.71, 3.63 ± 0.43 and 4.13 ± 0.19 gm /dl respectively. Also, serum albumin was significantly lower in the patients groups compared to the control group ($P < 0.001$).

The prothrombin time mean values were 15.08 ± 1.21, 17.39 ± 1.44, 19.70 ± 3.15, and 12.38 ± 0.42 seconds in the 3 patients groups and the control group respectively. The prothrombin time was prolonged significantly in the patients group than in the control group.

Lastly, the prothrombin concentration mean values were 66.78 ± 8.38, 73.86 ± 3.88, 70.22 ± 3.80 and 88.20 ± 4.16% in the 3 groups of patients and the control group respectively. The prothrombin concentration was generally reduced ($P < 0.001$) in diseased patients than the control groups.

Concerning the plasma endothelin levels, the mean values in the 3 patients groups and in the control group were 24.67 ± 10.86, 24.66 ± 14.70, 24.90 ± 12.05 and 5.20 ± 2.05 pg/ml respectively **(Table 9 and 13)**.

There was a highly significant increase in endothelin level in the patients groups compared to the control group ($P < 0.001$).

There was no significant difference inbetween the 3 groups of patients ($P > 0.05$).

On the other hand, the plasma endothelin level was highly elevated in the patients groups separately than in the control group ($P < 0.001$).

Patients with haematemesis had mean endothelin value of 27.87 ± 7.76 pg/ml and patients without haematemesis had endothelin mean value of 14.43 ± 3.67 pg/ml. There was a highly significant increase in

endothelin levels in patients with haematemesis in comparison with patients without haemtemesis ($P < 0.001$)**(Table 16 - Fig. 10).**

Patients with cirrhosis and normal renal function had endothelin mean value of 26.32 ± 8.73 pg/ml while patients with the hepatorenal syndrome had endothelin mean value of 38.74 ± 12.35 pg/ml **(Table 15 – Fig. 12).**

There was a highly significant increase in plasma endothelin levels between cirrhotic patients with hepatorenal syndrome than in cirrhotics with normal renal function ($P< 0.001$). There was a highly significant increase of plasma endothelin levels in both the hepatorenal syndrome patients and cirrhotic patients but with normal renal function as compared to the control group ($P < 0.001$) **(Table 15).**

Patients with hepatorenal syndrome had the highest endothelin concentrations in comparison with all other patients and healthy subjects ($P< 0.001$).

Correlative studies were performed to study the relation of plasma endothelin levels to the liver function tests, renal functions as well as complete blood picture.

Our results showed that there was significant positive correlation between plasma endothelin level and serum creatinine ($r = 0.53$) **(Fig.** 14). Also, there was significant positive correlation between plasma endothelin concentrations and blood urea ($r = 0.52$) **(Fig. 13).**

There was no significant correlation between plasma endothelin levels and plasma total bilirubin (r = 0.22) **(Fig. 15)**. There was no significant correlation between plasma endothelin levels and plasma total protein level (r = - 0.048).

But, there was significant negative correlation between plasma endothelin levels and serum albumin (r = -0.22) **(Fig. 18)**. There were no significant correlations between plasma endothelin levels and both ALT and AST (r = 0.038 and r = 0.079 respectively) **(Fig. 19 and 20)**.

Also there were no significant correlations between plasma endothelin concentrations and prothrombin time and concentration (r = 0.22 and r = - 0.27) respectively.

There was no significant correlation between plasma endothelin levels and RBCs count (r = - 0.19). Also these was no significant correlation between plasma endothelin levels and platelet count (r = 0.06). But, there was significant positive correlation between the plasma endothelin concentrations and the leucocytic count (r = 0.25) **(Fig. 21 – 23)**.

Portal vein diameters (estimated with the abdominal ultrasonography) had mean values of 15.28 ± 1.51, 14.92 ± 1.66, 15.32 ± 1.31, and 12.20 ± 0.79 mm respectively in the cases groups and controls **(Table 17 – Fig. 24)**.

There was positive significant correlation between endothelin levels and portal vein diameter (r = 0.29).

C. Patients with Hepatorenal syndrome (HRS) : 5 cases

No	Age Y	Sex	History of B	Ascites	Encephal -opthy	Haem- tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleen
21	48	F	+ ve	+	+	+	2.83	7.78	49	--	++
22	51	F	+ ve	+	+	+	2.63	3.7	75	--	+++
23	77	M	+ ve	+	+	+	1.58	4.71	118	--	-
24	35	M	+ ve	+	+	+	4.54	5.01	66	--	++
25	39	M	+ ve	+	+	+	3.98	6.12	112	--	+++

Table (2): Demographic and clinical data among cases with post viral cirrhosis (Group II).

A- Patients without portal hypertension (7 cases)

No	Age Y	Sex	History of B	Ascites	Encepha l-opthy	Haem- tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleen
1	50	F	- ve	+	-	-	3.72	3.00	52	++	++
2	49	M	- ve	-	-	-	4.97	4.45	95	--	++
3	50	F	- ve	-	-	-	2.83	7.16	94	--	+
4	68	M	- ve	+	-	-	2.9	3.8	100	++	++
5	55	M	- ve	-	-	-	4.8	4.2	138	--	+
6	37	M	- ve	-	-	-	5.11	6.2	118	++	++
7	63	F	- ve	-	-	-	4.92	7.00	121	--	+

B. Patients with bleeding OV (bleeders) : (16 cases)

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. / cmm	Platelet X 1000	Liver size	Spl
8	43	F	-ve	+	+	+	3.85	2.14	30	--	+
9	47	M	-ve	+	+	+	4.8	3.9	100	--	-
10	43	M	-ve	+	-	+	3.52	4.6	117	+	+
11	55	M	-ve	-	-	+	5.00	4.6	120	-	-
12	36	F	-ve	+	-	+	2.46	6.0	101	+	+
13	68	F	-ve	+	+	+	3.66	3.6	33	--	+

C. Patients with non – bleeding OV (Non – bleeders) : (6 cases).

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleer
14	47	F	-ve	-	-	-	3.66	8.08	168	-	++
15	65	M	-ve	+	+	-	4.8	4.68	119	+	++
16	48	M	-ve	-	-	-	4.16	4.32	88	+	++
17	53	F	-ve	+	+	-	3.77	7.32	83	+	+++
18	46	M	-ve	-	-	-	2.52	7.89	55	--	+
19	58	F	-ve	+	-	-	-	-	-	-	+

D. Patients with HRS : (6 cases)

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleen
20	67	F	+ve	+	+	+	3.60	4.24	165	--	++
21	38	M	-ve	+	+	+	4.91	5.21	112	--	++
22	50	F	-ve	+	+	+	3.79	7.25	87	--	+++
23	35	M	-ve	+	+	+	4.09	4.11	118	--	+
24	71	F	-ve	+	+	+	2.42	8.4	254	--	++
25	55	M	-ve	+	+	+	5.11	6.88	112	--	++

Table (3): Demographic and clinical data among cases with mixed B hepatic fibrosis and post viral cirrhosis (Group III):

A. Patients with bleeding OV (bleeders) : (9 cases)

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleen
1	42	M	+ ve	+	-	+	5.01	4.8	192	--	++
2	48	F	+ ve	+	+	+	4.9	5.01	160	--	++
3	65	M	+ ve	+	+	+	5.11	4.6	70	-	+
4	64	F	+ ve	-	+	+	3.82	5.02	89	+	+++
5	33	F	+ ve	-	+	+	2.52	1.05	90	--	++
6	28	F	+ ve	+	-	+	4.22	8.2	128	++	++
7	31	M	+ ve	-	-	+	3.91	7.11	111	--	++
8	48	M	+ ve	+	+	+	5.06	6.5	94	++	+
9	58	M	+ ve	+	-	+	4.66	3.20	140	-	++

B. Patients with non – bleeding OV (non – bleeders) : (9 cases).

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Spleen
10	43	M	+ve	+	-	-	5.93	5.11	70	-	+
11	-	F	+ve	+	-	-	3.02	3.77	93	++	++
12	21	M	+ve	-	-	-	4.2	4.5	112	--	-
13	45	M	+ve	+	-	-	5.6	3.93	84	++	++
14	28	M	+ve	-	-	-	4.44	4.8	128	-	++
15	41	F	+ve	-	-	-	3.99	7.2	132	++	++
16	70	F	+ve	+	-	-	2.93	3.2	158	--	++
17	46	F	+ve	-	-	-	4.72	6.5	108	++	+
18	41	M	+ve	-	-	-	3.71	5.9	100	--	++

C. Patients with HRS : (7 cases)

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000	Liver size	Splee
19	50	M	+ve	+	+	+	3.21	7.2	90	-	++
20	46	F	+ve	+	+	+	4.54	11.41	91	--	++
21	52	M	+ve	+	+	+	3.21	10.91	100	--	+
22	42	M	+ve	+	+	+	3.65	4.20	112	-	++
23	48	F	+ve	+	+	+	4.02	3.88	165	--	+++
24	41	M	+ve	+	+	+	4.08	6.50	108	--	++
25	38	M	+ve	+	+	+	2.88	7.20	98	-	++

Table (4): Demographic and clinical data among controls (Group IV) 10 cases.

No	Age Y	Sex	History of B	Ascites	Encephal-opthy	Haem-tenesis	RBCs million /cmm	WBCs thousand. /cmm	Platelet X 1000
1	68	M	-ve	-	-	-	5.11	4.02	150
2	60	F	-ve	-	-	-	4.89	5.10	168
3	20	M	-ve	-	-	-	5.21	5.80	170
4	28	M	-ve	-	-	-	4.89	4.11	200
5	22	M	-ve	-	-	-	5.18	6.01	210
6	30	F	-ve	-	-	-	4.20	5.13	180
7	18	M	-ve	-	-	-	5.01	4.88	172
8	45	M	-ve	-	-	-	5.6	5.00	115
9	40	F	-ve	-	-	-	4.21	7.01	117

Table (5) : Laboratory data in Group I, II, III and control subjects.

	Group I n = 25		Group II n = 25		Group III n = 25		Control n = 10		F test	P value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Bl. Urea	54.00	31.97	47.68	29.08	49.80	35.73	22.00	1.63	2.75	< 0.05 S
S. creatinine	1.36	0.84	1.52	0.74	1.51	0.83	0.83	0.14	2.27	> 0.05 NS
Total protein	6.86	0.59	6.99	0.51	6.83	0.38	7.84	0.35	11.61	< 0.001 HS
Albumin	3.49	0.52	3.20	0.71	3.63	0.43	4.13	0.19	7.65	< 0.001 HS
Proth. Time	15.08	1.21	17.39	1.44	19.70	3.15	12.38	0.42	40.54	< 0.001 HS
Proth. Conc.	66.78	8.38	73.86	3.88	70.22	3.80	88.20	4.16	13.67	< 0.001 HS
ALT	60.36	30.73	105.64	65.12	68.24	30.90	9.50	2.07	20.79	< 0.001 HS
AST	62.08	16.83	96.96	45.65	73.28	26.82	9.10	1.66	7.03	< 0.001 HS
Total bilirubin	1.89	0.83	1.80	0.66	1.87	0.68	0.80	0.13	7.89	< 0.05 S
Plasm endothelin	24.67	10.86	24.66	14.70	24.90	12.05	5.20	2.02	1.53	< 0.001 HS
Random bl. glucose	104.76	18.39	110.44	20.92	106.24	12.30	96.10	16.16	1.53	>0.05 NS
WBCs	5.01	1.24	5.42	1.88	5.66	3.32	5.51	1.05	0.57	> 0.05 NS
RBCs	4.24	1.04	3.92	0.92	4.14	0.88	4.85	0.49	2.58	> 0.05 NS
Platelets count	119.24	61.99	105.4	46.60	112.92	30.79	159.90	34.37	3.37	< 0.05 S

Table (6): Laboratory findings among group I patients (B hepatic fibrosis).

No.	Bl.urea (mg/dl)	S.creatinine (mg/dl)	S. bilirubin mg/dL	Total protein (g/L)	Albumin (g/L)	ALT IU/L	AST IU/L	Random bl. sugar (mg/dl)	Proth. time (PT) seconds	Proth. Conc. (PC)%	Urine & stool for B ova	Sigmoidoscopic biopsy for B ova	Agglutinat Test for B	Endotl con Pg/
1	44	1.1	3.28	7.1	3.04	28	58	130	13.5	68.5	+ve	+ve	+ve	22.
2	38	0.85	1.11	7.01	4.13	83	78	73	15.27	67	+ve	+ve	+ve	38.
3	42	1.1	1.2	7.33	3.91	42	41	99	14.33	70.3	+ve	+ve	+ve	27.
4	35.7	0.7	2.2	8.00	4.22	53	57	101	15.21	50.99	+ve	+ve	+ve	32.
5	37	0.85	1.8	7.76	3.62	133	61	122	13.98	74.1	-ve	+ve	+ ve	21.
6	42.5	0.90	0.7	6.79	3.49	57	42	118	13.91	62.8	-ve	+ve	+ve	36.
7	28	1.01	2.0	6.66	3.11	39	63	98	15.22	70.1	-ve	+ve	+ve	31.
8	29	0.8	1.12	6.10	2.92	61	83	-	-	-	-ve	+ve	+ve	27.
9	80	-	0.99	7.10	3.87	72	51	144	16.78	66.8	+ve	+ve	+ve	25.
10	32	0.98	1.88	6.55	3.711	41	68	119	18.10	68.3	+ve	+ve	+ve	22.
11	44	0.88	3.28	6.02	3.29	28	58	112	17.00	59.1	-ve	+ve	+ve	18.
12	35	1.03	2.62	7.11	4.00	23	51	83	14.31	44.8	-ve	+ve	+ve	17.
13	58	1.3	1.33	6.88	3.01	113	71	102	13.99	85.1	-ve	+ve	+ve	11.
14	32	0.94	1.22	7.26	4.02	51	43	122	14.5	61.9	+ve	+ve	+ve	13.
15	48	0.88	1.41	7.08	4.08	28	51	121	14.22	64.5	-ve	+ve	+ve	15.
16	42	0.91	1.81	6.99	3.91	33	42	97	15.18	70.0	-ve	+ve	+ve	16.
17	40.0	0.75	2.22	6.50	3.82	32	48	88	14.77	67.0	+ve	+ ve	+ve	12.
18	26	0.71	2.13	7.11	4.00	77	81	89	16.00	58.22	-ve	+ ve	+ve	17.
19	28	0.99	1.77	6.97	3.80	52	61	78	17.03	69.50	+ve	+ve	+ve	10.
20	34	0.8	1.33	6.79	3.32	45	58	126	14.22	70	+ve	+ve	+ve	17.
21	78	2.71	1.91	6.1	2.8	55	48	112	13.80	65	+ve	+ve	+ve	55.
22	130	3.5	0.8	5.59	2.51	79	88	120	15.09	67	+ve	+ve	+ve	22.
23	94	2.5	3.3	6.01	2.88	131	111	95	15.10	62	+ve	+ve	+ve	43.
24	120	2.77	3.72	7.88	3.1	70	68	77	14.9	78	-ve	+ve	+ve	32.
25	128	3.01	2.00	6.88	2.71	83	71	93	16.7	80	-ve	+ve	+ve	28.

Table (7): Laboratory findings among group II patients (Postviral cirrhosis).

No.	Bl.urea (mg/dl)	S.creatinine (mg/dl)	S. bilirubin mg/dL	Total protein (g/L)	Albumin (g/L)	ALT IU/L	AST IU/L	Random bl. sugar (mg/dl)	Proth. Time (PT) seconds	Proth. Conc. (PC) %	Hepatitis. Markers	PCR for HCV	Endothelin conc. Pg/ml
1	24	1.03	0.99	6.88	3.5	156	121	118	16	72.3	HbsAg + NCV Ab	+ve	9.5
2	38	1.40	0.86	8.0	4.5	192	150	122	17	79.2	HCV Ab	+ve	11.2
3	34	0.9	1.13	6.71	4.2	75	54	132	19	77.5	Hbs Ag	-	8.9
4	71	1.4	2.5	6.49	3.09	130	112	131	16	80.2	HBs Ag	-	12.1
5	22	1.70	1.72	7.01	3.88	67	58	108	18	71.5	HCV Ab	+ve	14.8
6	24	1.02	3.33	7.11	2.91	174	206	98	17	72.5	HBs Ag + HCV Ab	+ve	10.5
7	38	1.33	2.00	6.51	2.88	116	97	143	13.9	77.2	HCV Ab	+ve	14.9
8	21	0.96	1.69	7.01	3.81	86	131	81	14.8	72.0	HBs Ag	-	22.5
9	58	1.2	1.11	6.90	4.00	102	86	113	19	71.2	HBs Ag	-	24.8
10	29	0.9	2.8	8.00	2.80	191	134	122	20	68.5	HCV Ab	+ve	31.5
11	65	1.4	2.11	7.11	3.87	330	185	133	17.2	77.5	HBs Ag +HCV Ab	+ve	35.9
12	33	1.2	1.95	7.32	2.03	108	120	112	18	78.2	HCV Ab	+ve	40.2
13	53	1.7	0.7	6.88	2.11	39	75	117	16.5	68.9	B-ve, Ab HCv +ve	+ve	38.2
14	28	0.97	1.92	6.37	2.36	40	78	78	18.11	68.8	Ab HCv +ve	+ve	18.5
15	31	1.05	1.78	7.11	3.71	67	34	71	17.02	72.2	HBs Ag	-	15.8
16	29	0.97	2.35	7.99	3.09	126	112	88	16.99	77	HBs Ag	-	11.1
17	20	0.99	1.2	7.08	2.52	113	158	92	18.6	76.1	Ab HCV +ve	+ve	12.3
18	28	0.81	2.11	6.99	3.99	45	43	128	17.18	78	HBs Ag +HCV Ab	+ve	14.8
19	29	0.7	1.99	7.00	4.01	89	94	145	16.98	75	HCV Ab	+ve	17.7
20	70	2.54	1.74	5.88	2.99	79	73	97	17.07	72.8	HBs Ag	-	40.2
21	110	2.5	1.58	7.21	3.02	71	62	123	20.00	68.0	HCV Ab	+ve	42.5
22	110	3.03	2.5	6.39	2.9	41	89	115	19.22	66.5	HBs Ag	-	31.5
23	54	3.2	2.0	6.5	2.07	79	39	74	16.99	73.3	HBs Ag	-	22.1
24	104	2.5	1.22	7.22	2.97	88	52	109	17.21	75.1	HBs Ag+HCV Ab	+ve	55.9
25	89	2.5	1.18	7.11	2.78	71	61	111	16.88	77.0	HCV Ab	+ve	59.1

Table (8): Laboratory findings among group III patients (mixed B hepatic fibrosis and post viral cirrhosis):

No	Bl.urea (mg/dl)	S.creat-inine (mg/dl)	S. bilirubin mg/dL	Total protein (g/L)	Albumin (g/L)	ALT IU/L	AST IU/L	Random bl. sugar (mg/dl)	Proth. Time (PT) seconds	Proth. Conc. (PC) %	Hepatitis markers	PCR for HCV	Urine & stool for B ove	Colonoscopic biopsy for B	Agglut. Test for B
1/51	38	0.9	2.66	-	-	68	97	120	18.1	72	Anti HCV Ab	+ve	+ve	+ve	+ve
2/52	32	0.81	1.91	7.01	3.91	77	82	131	17.8	63	HBsAG	-ve	+ve	+ve	+ve
3/53	31	1.01	1.96	6.11	3.01	93	133	118	17.7	61	HBsAg	-ve	-ve	+ve	+ve
4/54	28	1.03	2.62	7.22	4.22	23	51	83	16.9	58	Anti HCV	+ve	-ve	+ve	+ve
5/55	32	0.9	1.47	7.11	4.00	36	80	100	18.2	58	HBsAg + HCV Ab	+ve	-ve	+ve	+ve
6/56	27	0.99	1.31	6.89	3.51	78	72	111	19.0	66	HbsAg	-ve	-ve	+ve	+ve
7/57	31	1.03	0.98	7.12	3.89	77	88	108	17.8	68	HCV Ab	+ve	+ve	+ve	-ve
8/58	18	0.9	1.4	6.89	3.74	131	148	92	18.7	71	HCV Ab	+ve	-ve	+ve	-ve
9/59	22	1.01	0.88	6.11	3.11	82	91	78	16.99	66	HbsAg+HCV Ab	+ve	+ve	+ve	-ve
10/60	37	1.11	0.86	6.20	3.02	53	72	113	17.11	63	HbsAg	+ve	+ve	+ve	-ve
11/61	22	0.98	0.97	7.03	4.11	81	93	121	17.91	68	HCVAb	+ve	-ve	+ve	-ve
12/62	26	1.20	1.38	7.27	3.06	72	69	126	16.98	58	HbsAg+HCVAb	+ve	-ve	+ve	-ve
13/63	24	0.9	1.21	7.0	4.1	62	89	104	18.10	51	HCVAb	+ve	-ve	+ve	-ve
14/64	28	0.98	1.91	6.91	3.82	47	58	98	19.92	52	HbsAg+HCVAb	-ve	+ve	+ve	-ve
15/65	27	1.11	2.22	6.88	3.28	52	61	88	20.10	57	HBsAg	-ve	+ve	+ve	-ve
16/66	30	1.42	3.01	7.07	4.00	43	44	96	21.24	66	HBsAg	+ve	-ve	+ve	-ve
17/67	37	1.10	1.88	6.92	3.19	28	39	91	22.12	68	HCV Ab	+ve	+ve	+ve	-ve
18/68	31	1.12	1.71	6.11	3.00	154	47	85	18.89	68	HCV Ab	+ve	-ve	+ve	-ve
19/69	126	3.6	1.43	6.49	3.71	57	52	98	27.00	72	HbsAg+HCVAb	+ve	-ve	+ve	-ve
20/70	118	2.5	1.53	7.00	3.97	35	38	121	19.22	53	HCV	-ve	+ve	+ve	-ve
21/71	84	2.54	2.11	7.22	3.90	93	60	122	19.38	67	HbsAg	-ve	-ve	+ve	-ve
22/72	87	2.6	3.10	6.91	3.81	53	57	121	26.04	67	HbsAg	+ve	-ve	+ve	-ve
23/73	112	2.61	2.99	6.88	3.47	61	62	96	28.00	52	HCVAb	+ve	-ve	+ve	-ve
24/74	80	2.5	2.5	6.18	2.9	93	88	98	22.18	66	HbsAg	-ve	+ve	+ve	-ve
25/75	117	2.99	2.33	7.00	4.01	58	61	102	20.20	68	HbsAg+HCVAb	+ve	-ve	+ve	-ve

Table (9): Laboratory findings among group IV control subjects.

No.	Bl. urea (mg/dl)	S. creatinine (mg/dl)	S.bilirubin mg/dl	Total protein (g/l)	Albumin g/l	ALT IU/l	AST IU/l	Random bl. sugar (mg/dl)	Proth time (PT) seconds	Proth. Conc (PC) %	Endothelin conc. Pg/ml
1	20	0.7	0.9	8.3	4.1	8	9	-	12.50	85	7.7
2	22	0.9	0.93	8.11	4.3	10	11	120	13.10	80	3.5
3	23	0.8	0.73	7.60	4.2	9	12	80	11.9	95	7.0
4	21	0.88	0.62	7.22	4.0	11	7	78	12.10	88	3.1
5	25	0.71	0.91	7.70	3.99	12	8	90	13	90	3.0
6	20	0.90	0.66	7.5	3.98	9	8	88	12.5	85	7.2
7	22	0.94	0.78	8.11	4.4	12	10	77	11.99	84	4.8
8	24	0.71	0.69	8.20	4.41	7	9	111	12.5	88	3.3
9	21	0.66	0.99	7.99	3.98	6	7	118	12.11	90	4.4
10	22	1.10	0.77	7.66	3.90	11	10	99	12.09	92	8.0

Table (10): Mean value ± SD of endothelin levels in group I subdivisions and controls.

	Patients with bleeding oesophageal varices n = 10		Non-bleeding Oesophageal varices n = 10		Hepatorenal syndrome n = 5		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Endothelin (Pg /ml)	28.52	6.08	15.02	2.91	36.28	12.92	5.20	2.05	41.36	< 0.001 HS.

N.B.: P > 0.05 NS P < 0.05 S P < 0.001-0.01 HS

Table (11) : Mean value ± SD of endothelin levels in group II subdivisions and controls

	Patients without portal hypertension n = 7		Patients with bleeding oesophageal varices n = 6		Non – bleeders n = 6		Hepatorenal syndrome n = 6		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P valu
Endothelin (Pg /ml)	11.70	2.39	32.18	7.25	15.03	2.92	41.88	14.11	5.20	2.05	35.81	< 0.0(H.S

Table (12): Mean value ± SD of endothelin levels in group III subdivisions and controls.

	Patients with bleeding oesophageal varices n = 10		Non-bleeding Oesophageal varices n = 10		Hepatorenal syndrome n = 5		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Endothelin (Pg /ml)	24.28	8.77	15.49	2.98	37.80	11.78	5.20	2.05	31.43	< 0.001 H.S

Table (13): Mean value ± SD of endothelin levels among cases and controls.

	Control subjects n = 25		Group I n = 25		Group II n = 25		Group III n = 25			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Endothelin (Pg /ml)	5.20	2.05	24.67	10.86	24.66	14.70	24.90	12.05	7.89	< 0.001 H.S

Table (14) : Mean value ± SD of endothelin in healthy subjects, cirrhotics without ascites, cirrhotics with ascites and normal renal function and patients with hepatorenal syndrome.

	Healthy subjects n = 10		Cirrhotics without ascites n = 28		Cirrhotics with ascites and normal renal function n = 30		Hepatorenal syndrome n = 17			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Endothelin (pg/ml)	5.20	2.05	19.44	8.71	20.32	8.73	38.74	12.35	33.26	< 0.001 HS

Table (15): Mean value ± SD of endothelin levels among patients with liver cirrhosis and normal renal function, patients with hepatorenal syndrome and control subjects.

	Cirrhotic with normal renal function n = 58		Patients with hepatorenal synd. n = 17		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	F value	P value
Endothelin (pg/ml)	20.32	8.73	38.74	12.35	5.20	2.05	47.58	< 0.001 H.S

Table (16): Mean value ± SD of endothelin level in cases with and without haematemesis in the 3 groups of patients.

	Cases with haematemosis n = 26		Cases without haematemesis N = 32			
	Mean	SD	Mean	SD	F value	P value
Endothelin (Pg /ml)	27.87	7.76	14.43	3.07	8.97	< 0.001 H.S

N.B. We exclude the cases of hepatorenal syndrome.

Table (17) : Mean value ± SD of portal vein diameter in cases, and controls.

	Group I n = 25		Group II n = 25		Group III n = 25		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Portal vein diameter mm	15.28	1.51	14.92	1.66	15.32	1.31	12.20	0.79		< 0.05

Table (18) : Mean value ± SD of RBCs in cases and control subjects

	Group I n = 25		Group II n = 25		Group III n = 25		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
RBCs Counts	4.24	1.04	3.93	0.92	4.14	0.88	9.85	1.05	2.58	> 0.05 NS

Table (19): Mean value ± SD of WBCs in cases and control subjects

	Group I n = 25		Group II n = 15		Group III n = 25		Controls n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
WBCs Counts	5.01	1.24	5.42	1.88	5.66	2.32	5.51	1.05	0.57	> 0.05 N.S

Table (20): Mean value ± SD of platelet counts in cases and controls.

	Group I n = 25		Group II n =25		Group III n=25		Control n = 10			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F value	P value
Platelets count	119.24	61.99	105.40	46.60	112.92	36.79	159.90	34.37	3.47	< 0.05 S

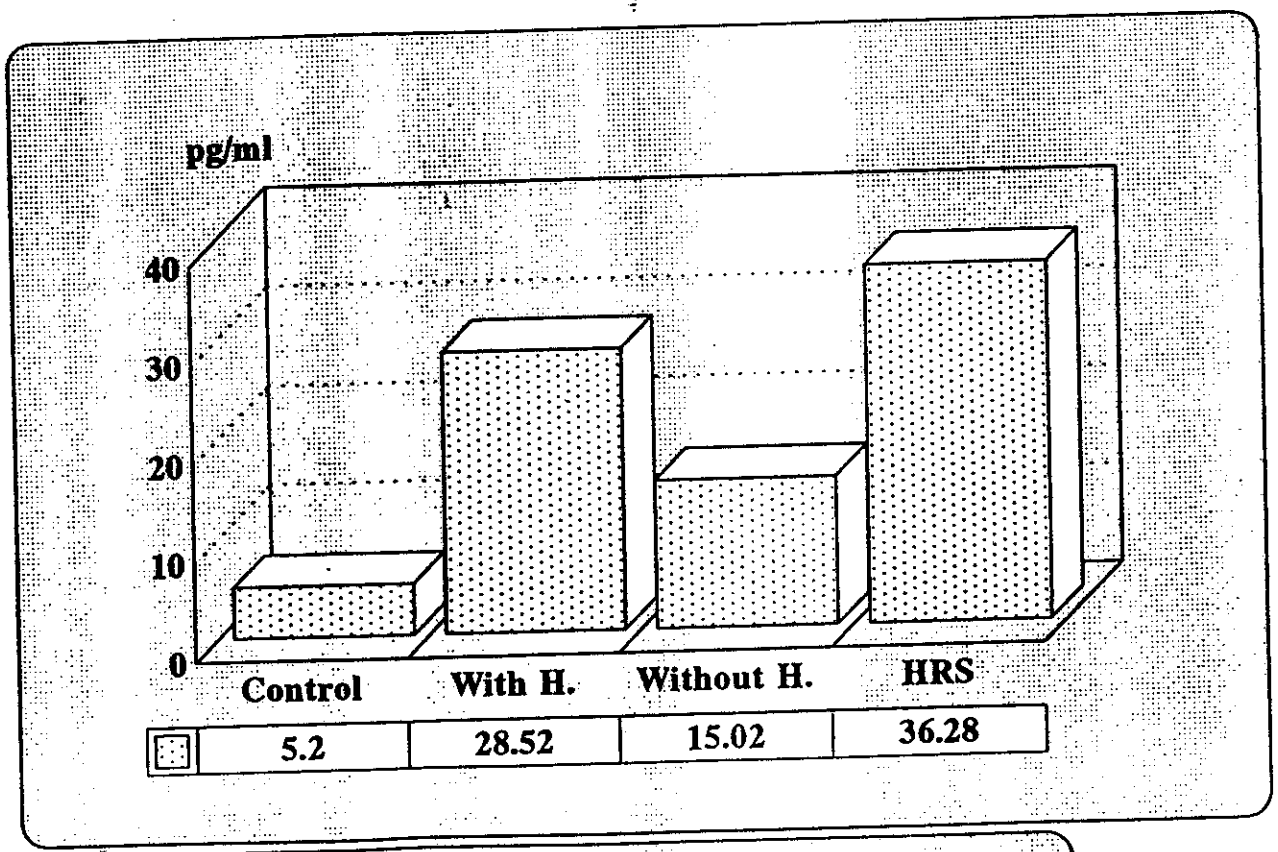


Fig. (6): Comparison between control, patients with, without haematemesis and HRS among group-I regarding plasma endothelin level

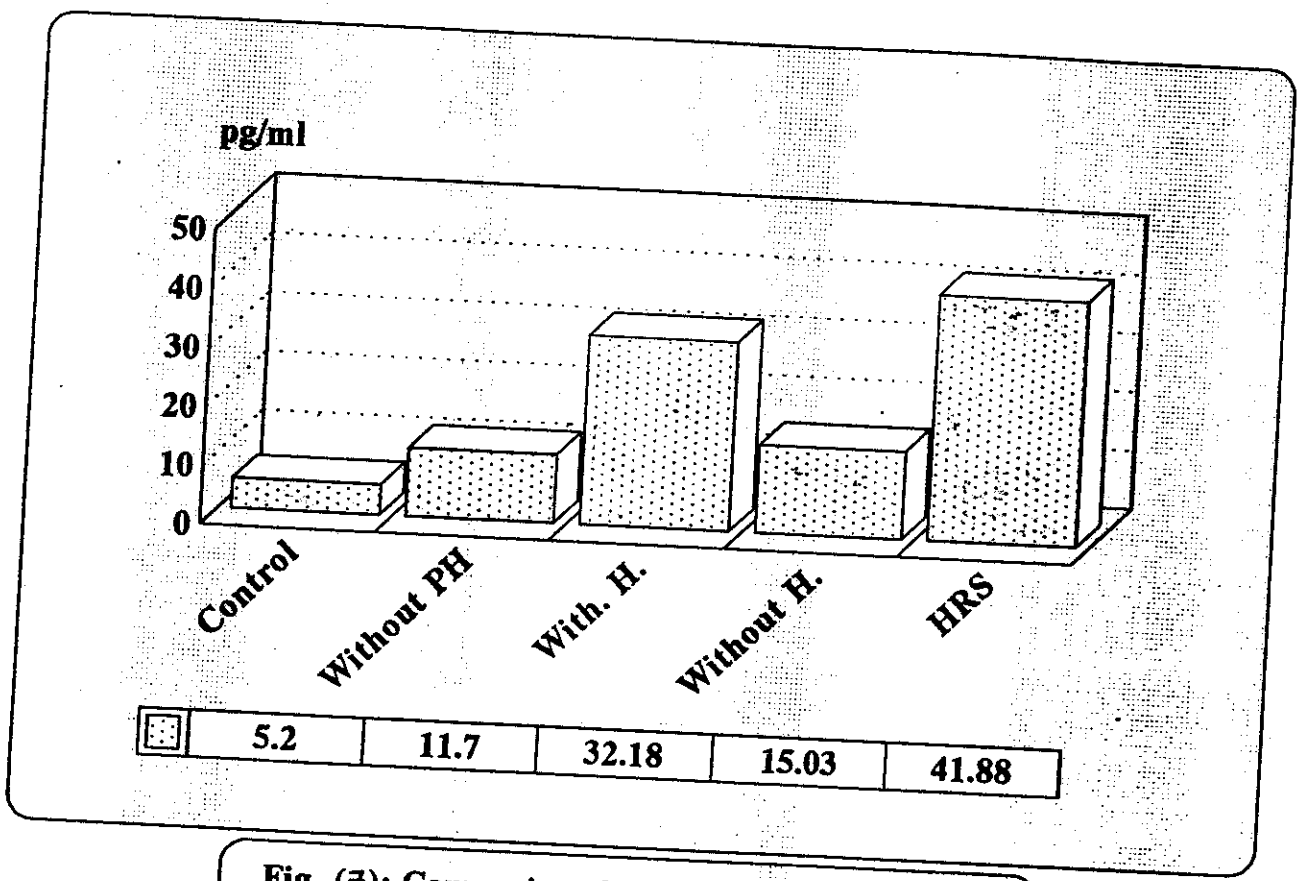


Fig. (7): Comparison between control, patients without PH, with, without haematemesis and HRS among group-II regarding plasma endothelin level

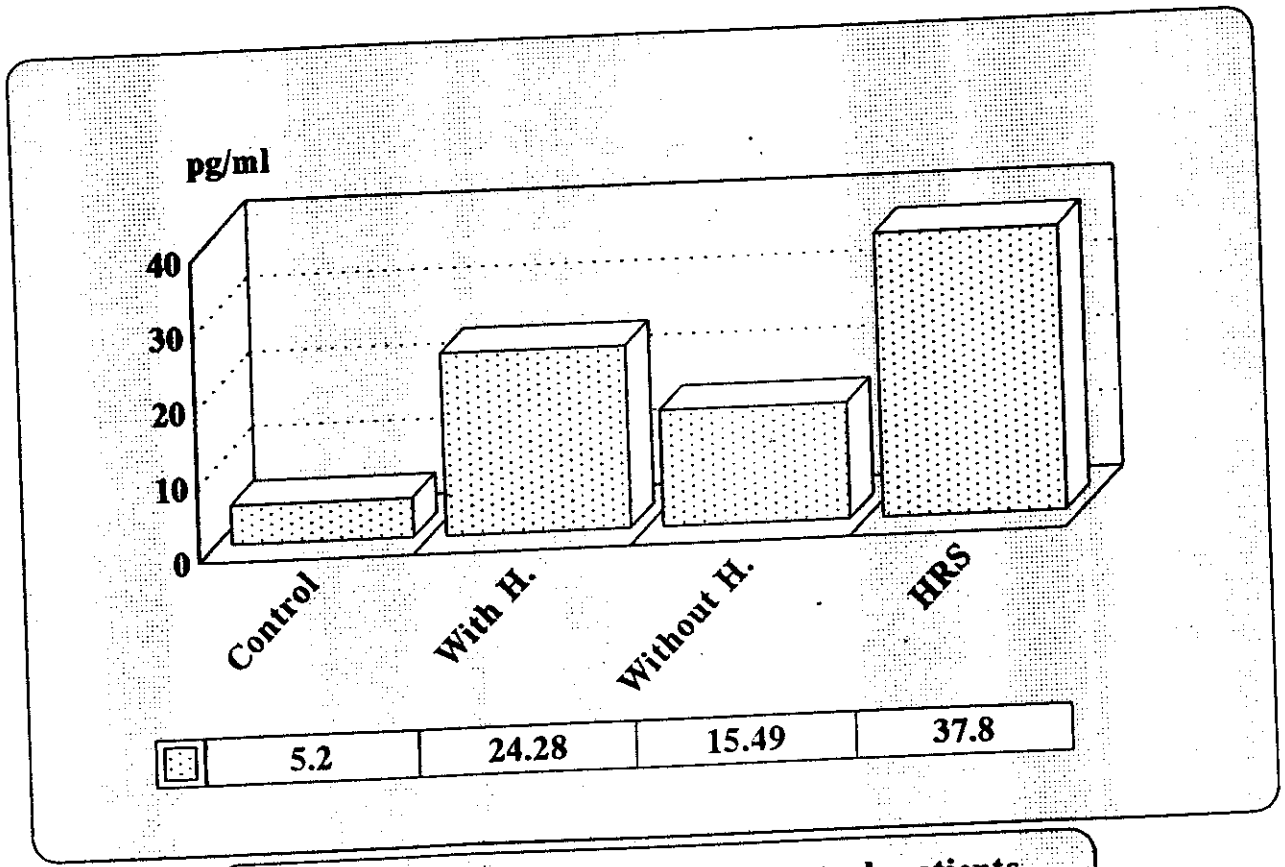


Fig. (8): Comparison between control, patients with, without haematemesis and HRS among group-III regarding plasma endothelin level

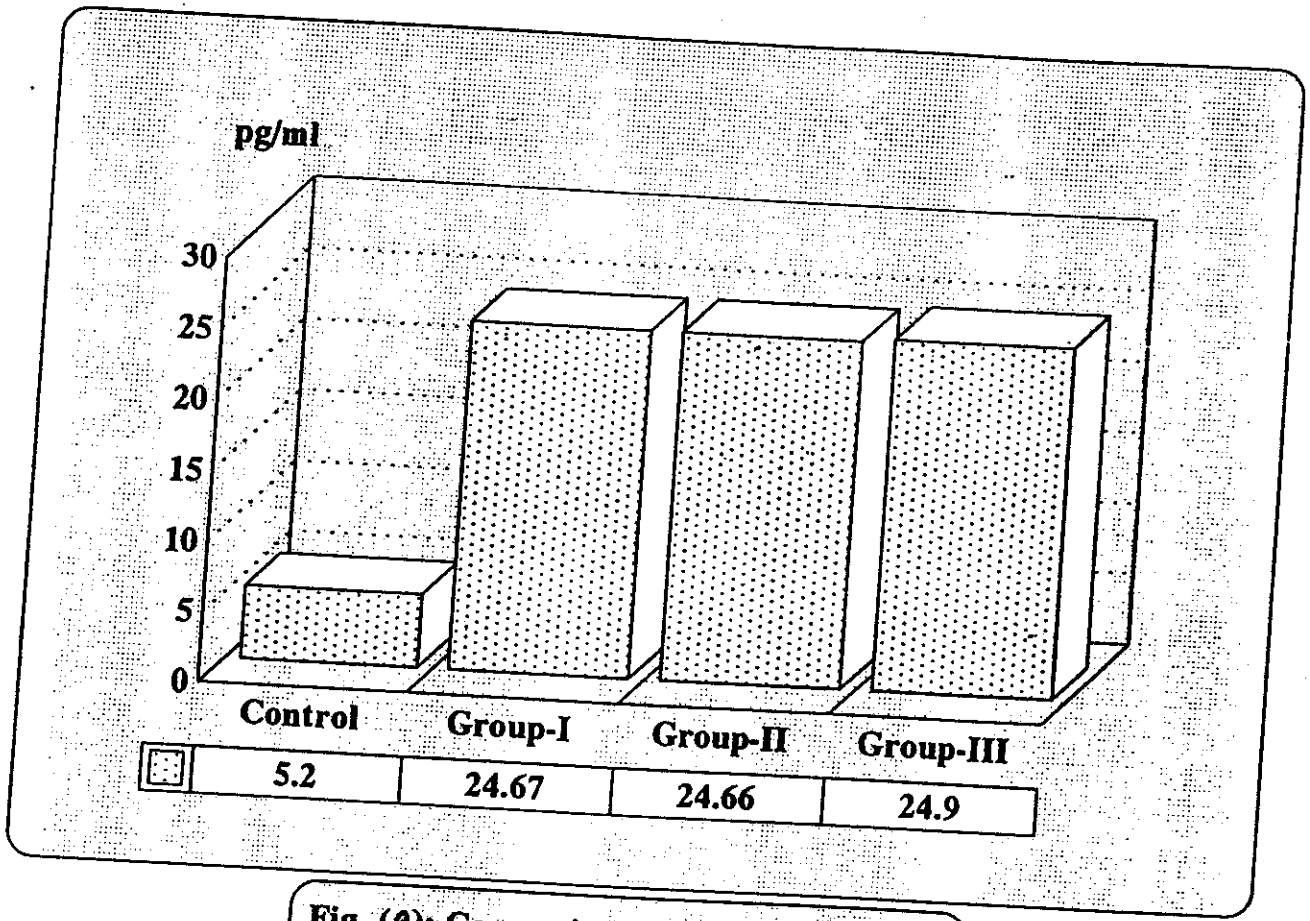


Fig. (9): Comparison between all studied groups regarding plasma endothelin level

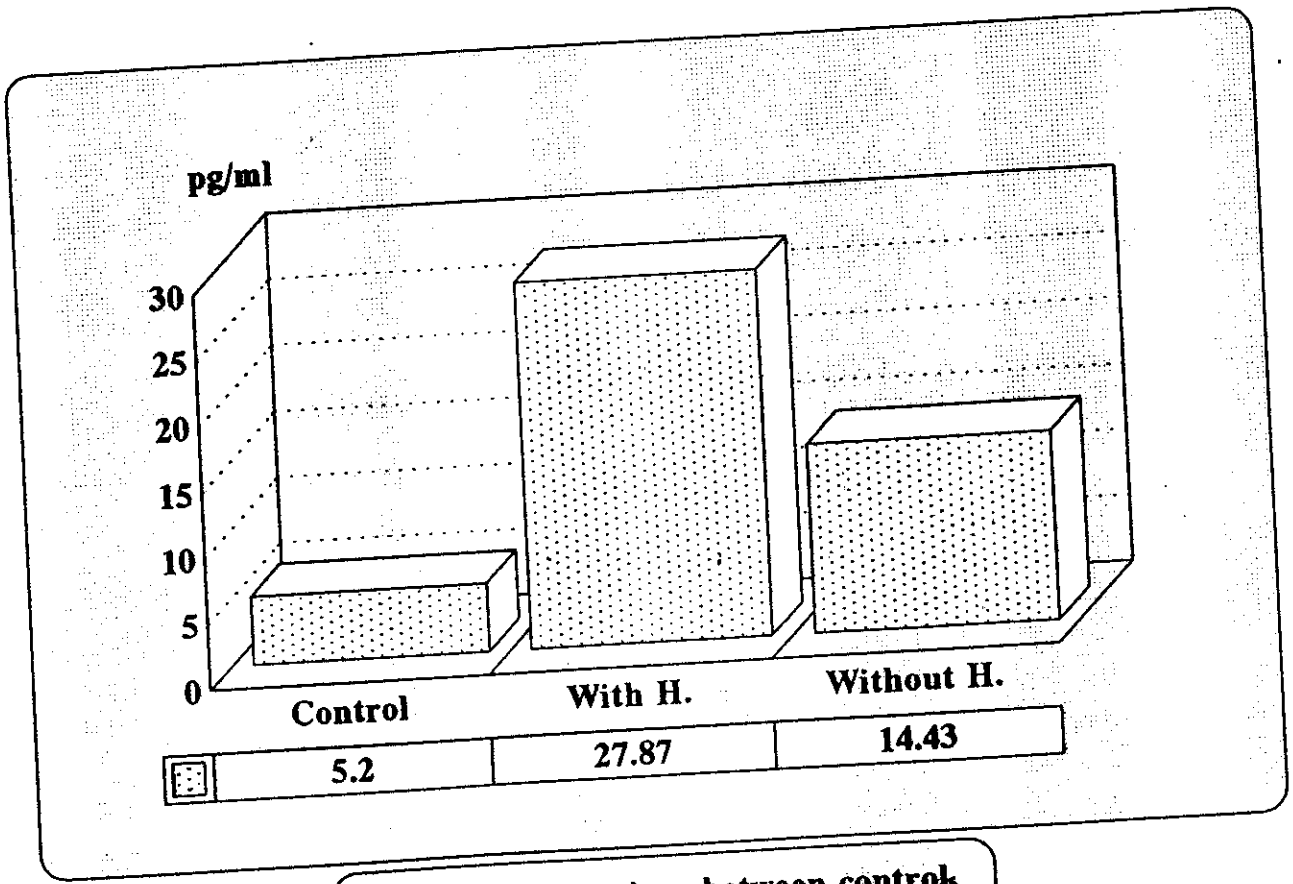


Fig. (10): Comparison between control, patients with and without haematemesis regarding plasma endothelin level

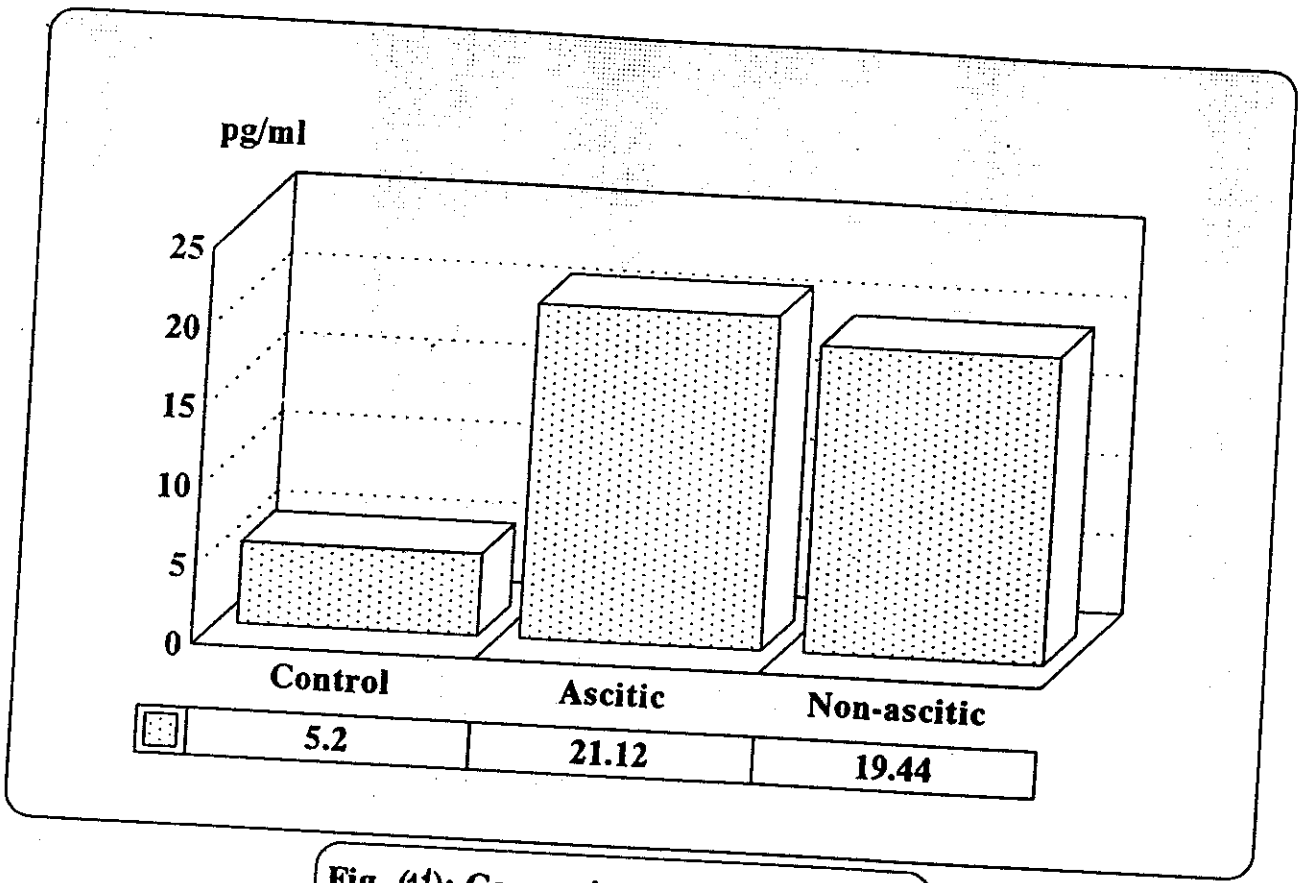


Fig. (11): Comparison between control, ascitic and non-ascitic patients regarding plasma endothelin level

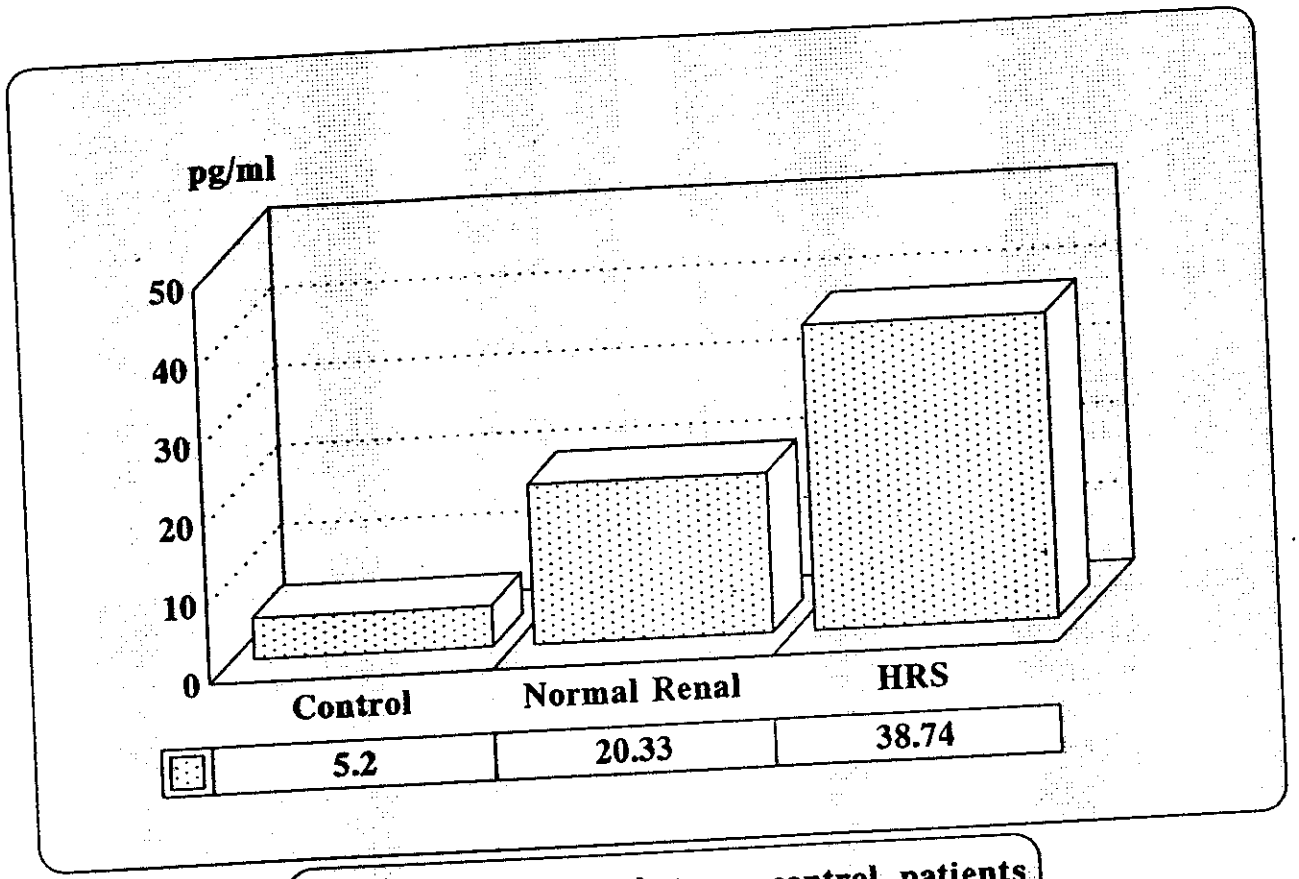
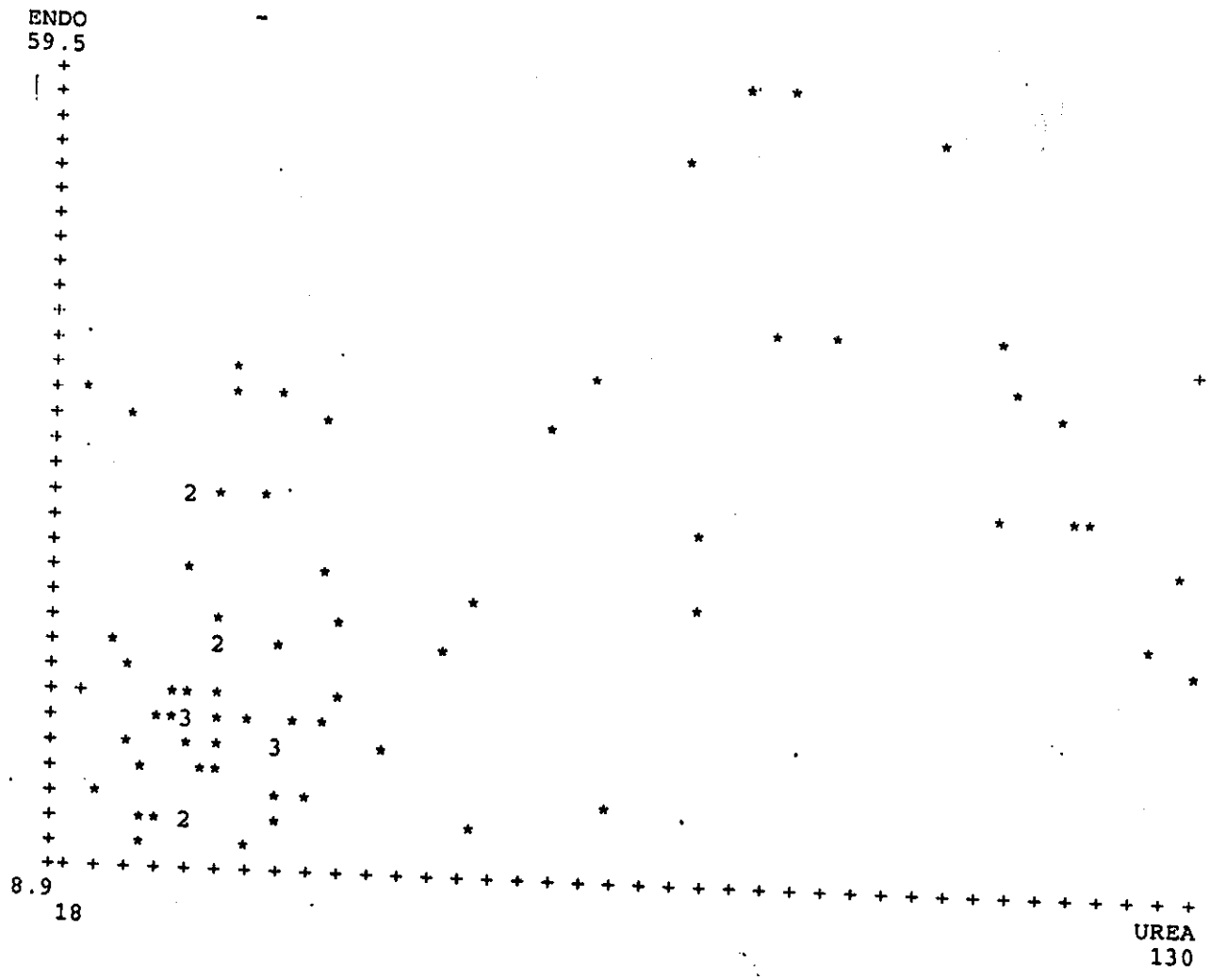


Fig. (12): Comparison between control, patients with normal renal functions and HRS regarding plasma endothelin level

Fig. (13) : Correlative studies between plasma endothelin conc. and bl. Urea. (r = 0.53)



Positive significant correlation

Critical value ± 0.19

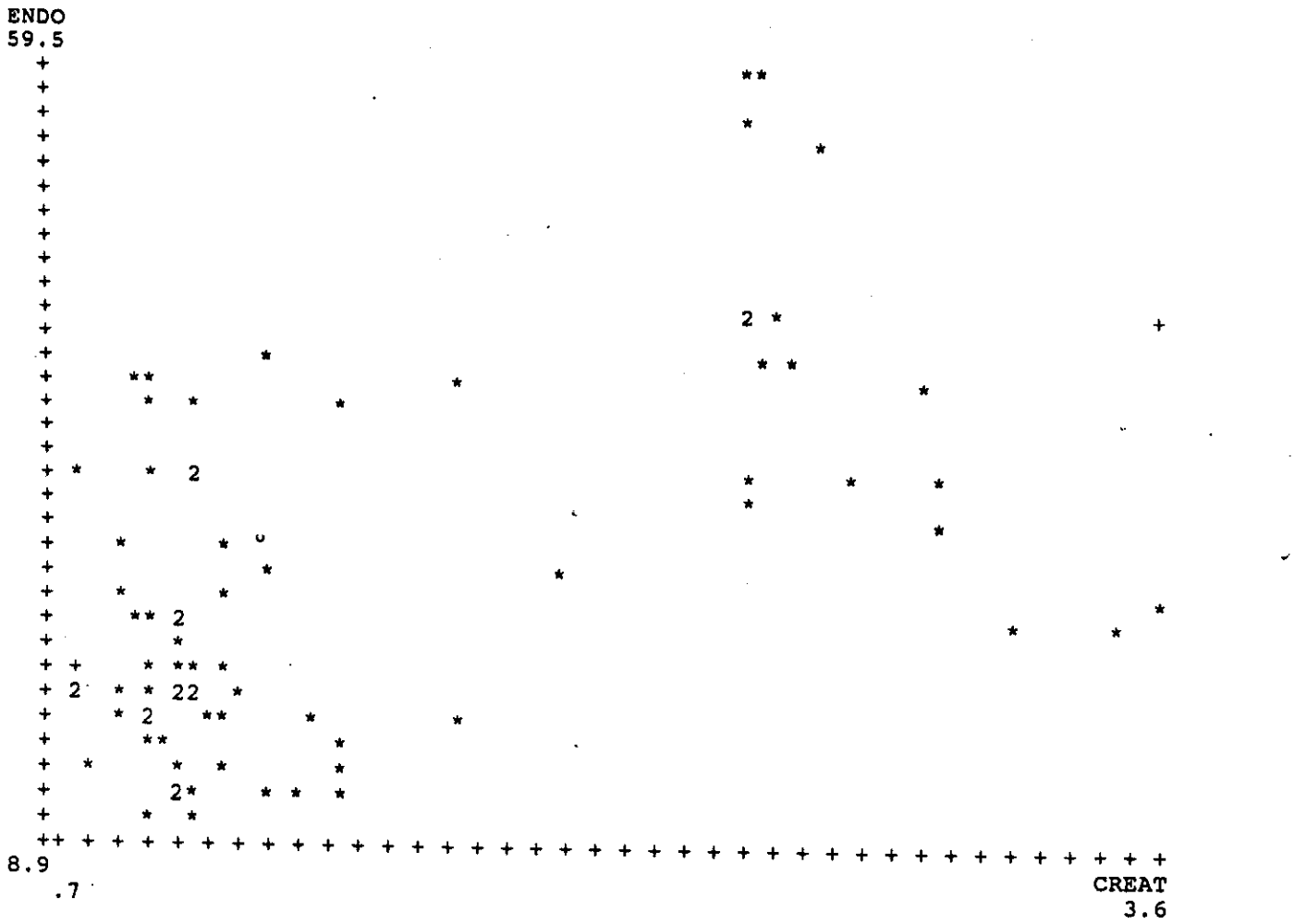
< Critical value : Non significant

> Critical value : Significant

\+ positive correlation.

\- neg. correlation.

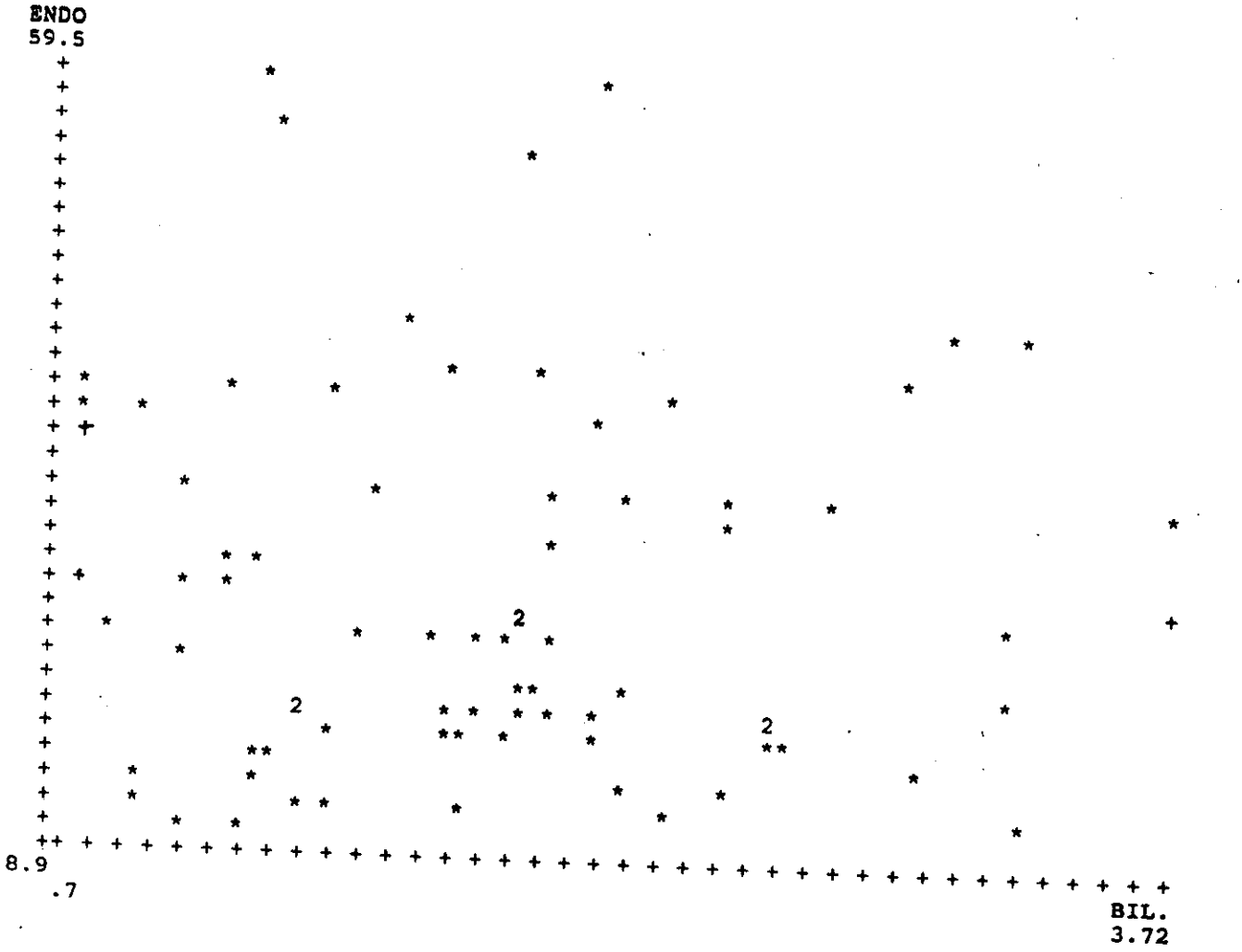
Fig. (14) : Correlative studies between plasma endothelin conc. And S. creatinine (r = 0.53)



Positive significant correlation

(Fig. 15) : Correlative studies between plasma endothelin conc. and S.bilirubin

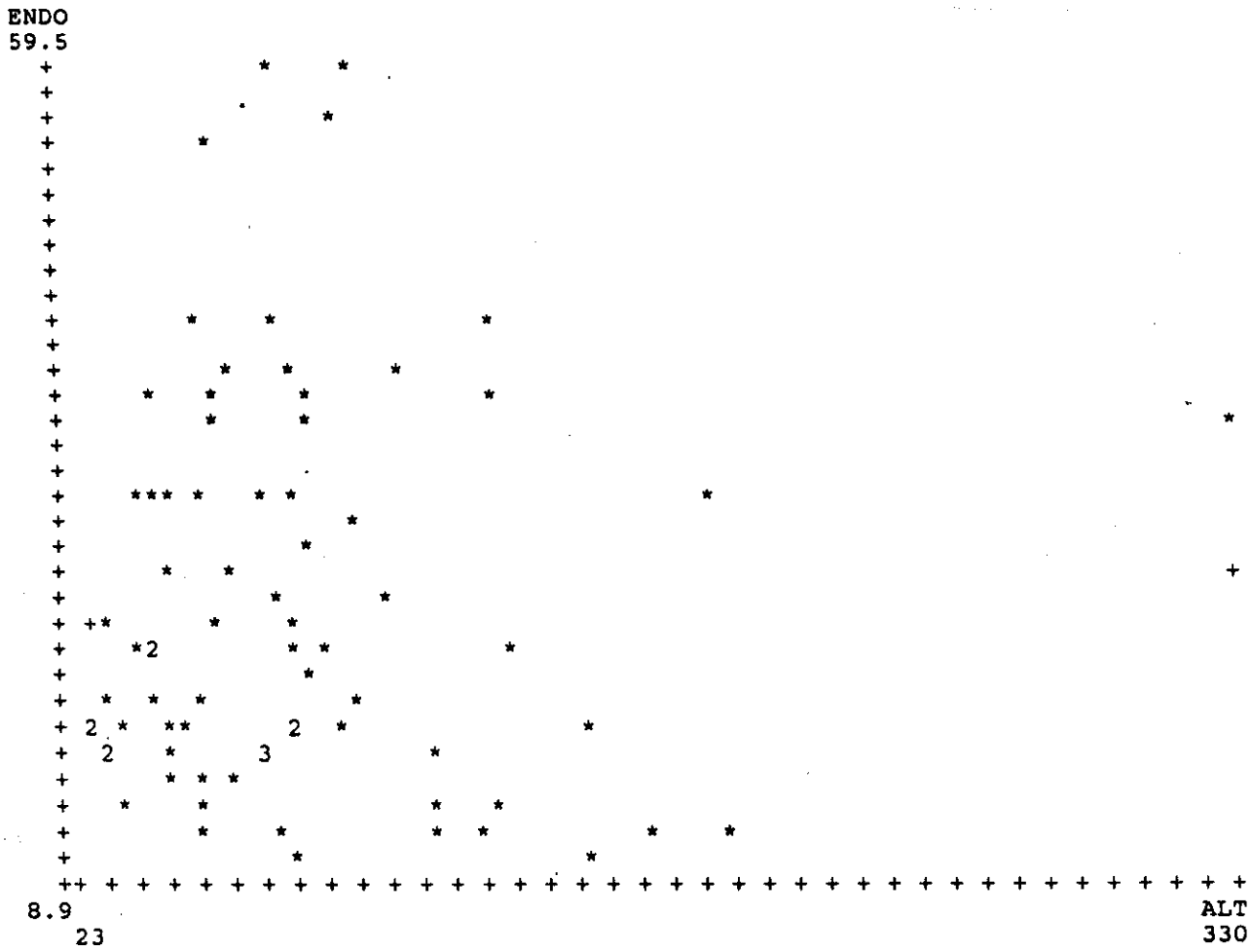
($r = 0.22$)



Positive significant correlation

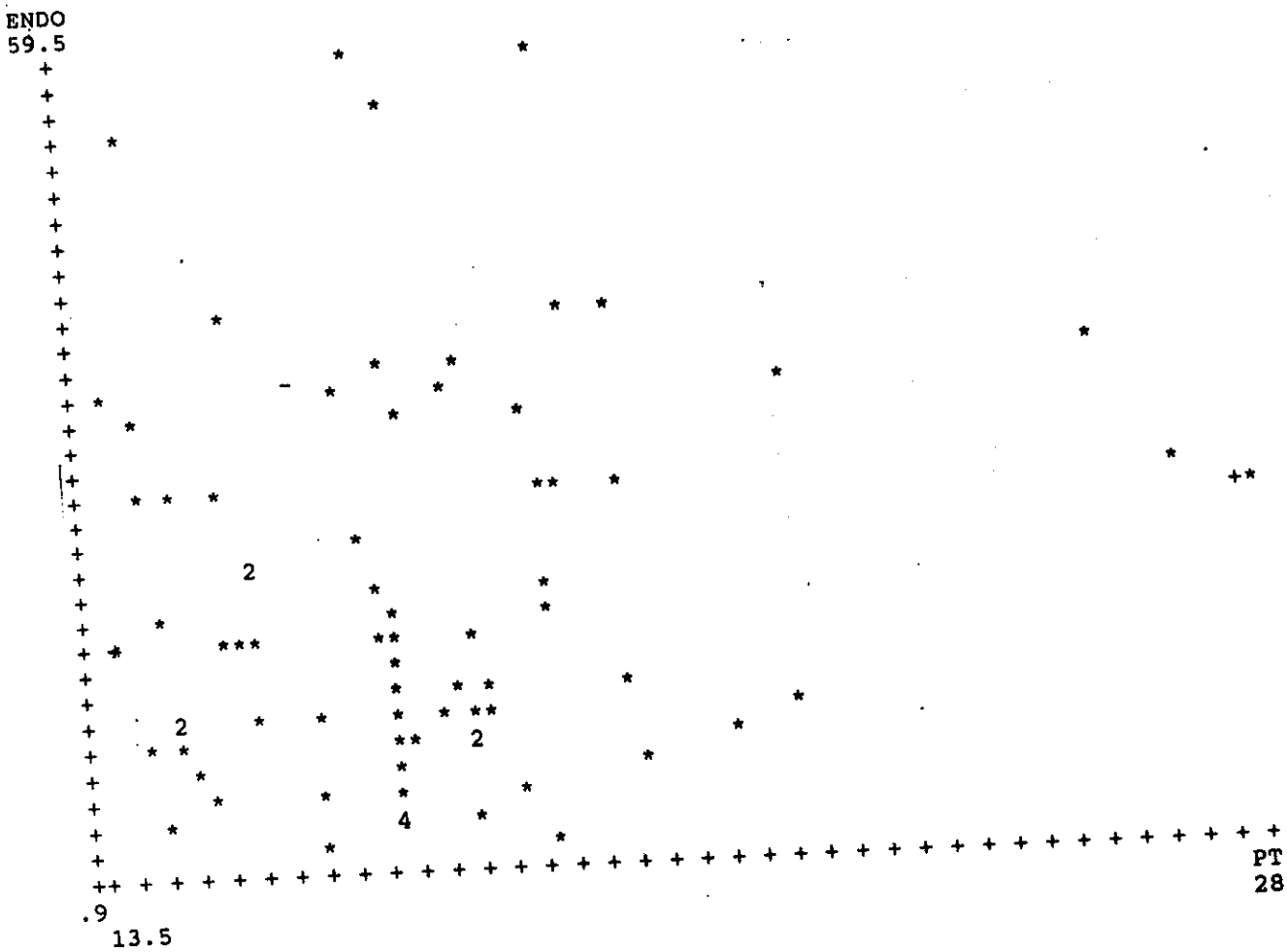
Fig. (16) : Correlative studies between plasma endothelin conc. and ALT.

(r = 0.038)



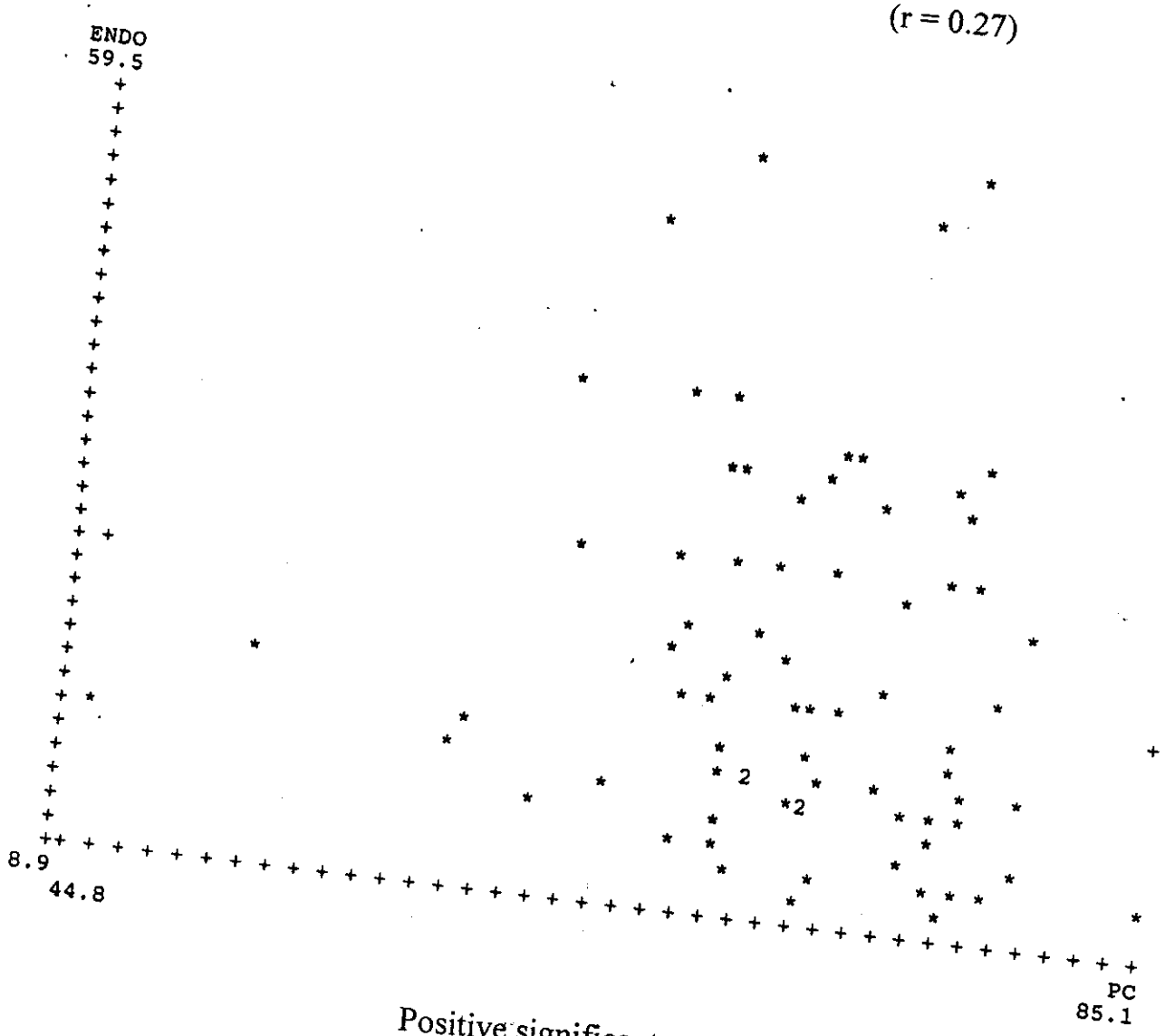
Non significant correlation

Fig. (19) : Correlative studies between plasma endothelin conc. and proth. time. (PT) (r = 0.22)



Positive significant correlation

Fig. (20) : Correlative studies between plasma endothelin conc. and PC (r = 0.27)



Positive significant correlation