RESULTS

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This study was carried on 50 patients divided into 3 groups:

Group A: includes 20 patients of portal hypertension and eosophageal varices who treated with injection sclerotherapy.

Group B: includes 20 patients who completed schedule of injection sclerotherapy.

Group C: control group includes 10 patients with portal hypertension without history of bleeding varices nor injection sclerotherapy.

Table (1) shows age, sex and diagnostic findings of patients treated with injection schlerotherapy (group A). The age of this group was found to range from 33 to 69 years with a mean value of 49.5 years. There were 18 males and 2 females.

17 patients (85%) had Schistozomal hepatic fibrosis while 11 patients (55%) had liver cirrhosis. 11 patients (55%) had splenomegaly, all patients (100%) had haematemasis and melaena, 10 patients (50%) had ascites while 3 patients (15%) had hepatic encephalopathy,2 patients (10%) were hepatitis C +ve.

Table (2) shows the age, sex and diagnostic findings in patients completed schedule of injection sclerotherapy (group B). The age was

found to range from 29 to 61 years with a mean value of 45.5 years. All patients were males.

All patients (100%) had Schistozomal hepatic fibrosis. All patients (100%) had obliterated esophageal varices by injection sclerotherapy. 18 patients (90%) had splenomegaly and two patient (10%) had anaemia. 2 patients (10%) were hepatitis C +ve.

Table (3) shows the age, sex and diagnostic findings in patients with portal hypertensions without history of bleeding varices nor injection sclerotherapy (control group). The age of this group was found to range from 40 to 65 years with a mean value of 53.2 years.

All patients were males. 8 patients (80%) had Schistozomal hepatic fibrosis while 8 patients (80%) had liver cirrhosis. No patients had haematemesis nor melaena. 6 patients (60%) had splenomegaly, 7 patients (70%) had ascites, 2 patients (20%) were hepatitis C +ve. 2 patients (20%) had hepatic encephalopathy, 3 patients (30%) had jaundice.

Table (4) shows liver function tests and degree of hepatic decompensation (Child's Classification) among group A. The serum bilirubin of this group was found to range from 0.6 to 4.5 mg/100ml with a mean value of 1.83 mg/100ml. Prothrombin activity was found to range from 40 to 100% with a mean value of 68.9%. Aspartate transaminase (SGOT) was found to range from 10 to 58 R&F units with a mean value of 26.85 units. Alanine transaminase (SGPT) was found to range from 15 to 67 R&F units with a mean value of 29.4 units.

Serum albumin was found to range from 2 to 3.7 gm/100ml with a mean value of 2.9 gm/100ml. Ascites of different amounts were found in 10 patients (50%). Hepatic encephalopathy was found in 3 patients (15%).

According to Child's Classification 10 patients (50%) were class A, 7 patients (35%) were class B and 3 patients (15%) were class C.

Table (5) shows liver function tests and degree of hepatic decompensation (Child's Classification) among group B. The serum bilirubin was found to range from 0.6 to 2.5 mg/100ml with a mean value of 1.25 mg/100ml prothrombin activity was found to rang from 60 to 85% with a mean value of 73%.

Aspartate transaminase (SGOT) was found to range from 17 to 39 R&F units with a mean value of 26.2 units. Alanine transaminase (SGPT) was found to range from 15 to 45 R&F units with a mean value of 32 units. Serum albumin was found to range from 2.3 to 3.4 gm/100ml with a mean value of 2.85 gm/100ml. Ascites of mild amount was found in 5 patient (25%). Hepatic ncephalopathy was not found in any patient. According to Child's Classification 15 patients (75%) were class A and 5 patient (25%) was class B.

Table (6) shows liver function tests and degree of hepatic decomposation (Child's Classification) among control group. The serum bilirubin was found to range from 0.3 to 6.7 mg/100ml with a mean value of 2.58 mg/100ml. Prothrombin activity was found to range from 47% to 76% with a mean value of 64%. Aspartate transaminase (SGOT)

was found to range from 23 to 95 R & F units with a mean value of 47.8 units. Alanine transaminase (SGPT) was found to range from 25 to 117 R&F units with a mean value of 54.1 units. Serum albumin was found to range from 2 to 3.5 gm/100 ml with a mean value of 2.52 gm/100ml. Ascites of different amount was found in 8 patients (80%). Hepatic encephalopathy was found in 2 patients (20%).

According to Child's Classification 2 patients (20%) were class A, 3 patients (30) were class B and 5 patients (50%) were class C.

Table (7) shows distribution of Child's classification among the three study groups. In group A, 50% of patients were class A, 35% were class B and 15% were class C. In group B, 75% of patients were class A, and 25% were class B. In group C, 20% of patients were group A, 30% were group B and 50% were class C.

Table (8) shows cardiopulmonary manifestations among patients of group A after esophageal variceal sclerotherapy. Retrosternal pain was reported in only 5 patients (25%) but there was no cough, dyspnoea or haemoptysis in any of our patients.

Table (9) shows forced vital capacity (FVC) among group A before and after injection sclerotherapy, group B and control group. In group A, forced vital capacity (FVC) before injection sclerotherapy was found to range from 1 to 3.2 liters with a mean value of 1.8 liters. One day after sclerotherapy, FVC was found to range from 0.7 to 2.8 liters with a mean value of 1.36 liters. In group B forced vital capacity was

found to range from 1 to 3.2 liters with a mean value of 1.89 liters. FVC was found to range from 1.1 to 1.8 liters with a mean value of 1.48 liters.

Table (10) shows arterial blood gases study among group A patients before and after injection sclerotherapy. PO_2 before injection sclerotherapy was found to range from 63.4 to 97.5 mmHg with mean value of 82.74 mmHg. One day after sclerotherapy PO_2 was found to range from 56.1 to 88.5 mmHg with a mean value of 73.58 mmHg.

pH before injection sclerotherapy was found to range from 7.37 to 7.48 with a mean value of 7.43. One day after sclerotherapy pH was found to range from 7.35 to 7.49 with a mean value of 7.42.

PCO_2 before injection sclerotherapy was found to range from 26.9 to 56.8 mmHg with a mean value of 39.64 mmHg. One day after sclerotherapy PCO_2 was found to range from 32 to 58.4 with a mean value of 39.72 mmHg.

HCO_3 before injection sclerotherapy was found to range from 18.6 to 38.1 mmol/dl with a mean value of 26.54 mmol/dl. One day after sclerotherapy, HCO_3 was found to range from 20.2 to 40.1 mmol/dl with a mean value of 27.55 mmol/dl.

O_2 saturation before injection sclerotherapy was found to range from 92.1 to 98.6% with a mean value of 96.57%. One day after sclerotherapy, O_2 saturation was found to range from 88.7 to 96.9% with a mean value of 93.87%.

Table (11) shows arterial blood gases study in group B. PO_2 was found to range from 66.6 to 99.3 mmHg with a mean value of 86.11 mmHg. pH was found to range from 7.37 to 7.45 with a mean value of 7.42. PCO_2 was found to range from 25.7 to 46 mmHg with a mean value of 38.51 mmHg. HCO_3 was found to range from 16.1 to 32.1 mmol/dl with a mean value of 25.53 mmol/dl. O_2 saturation was found to range from 91.7 to 98.7% with a mean value of 95.7%.

Table (12) shows arterial blood gases study in control group. PO_2 was found to range from 73.4 to 99.3 mmHg with a mean value of 81.34 mmHg. pH was found to range from 7.35 to 7.45 with a mean value of 7.41. PCO_2 was found to range from 31.6 to 42.9 mmHg with a mean value of 38.82 mmHg. HCO_3 was found to range from 19.5 to 29.5 mmol/dl with a mean value of 23.81 mmol/dl. O_2 saturation was found to range from 92.5 to 98.7 with a mean value of 95.74%.

Table (13) shows Echocardiographic findings in group A before injection sclerotherapy and 3 months after sclerotherapy which were the same with no changes only 2 patients had valvular lesions as mild pulmonary hypertension and mild found to range from 57 - 77% with a mean value of 69.85%. Left ventricular endsystolic diameter (ESD) was found to range from 26 to 36 mm with a mean value of 31 mm. Left ventricular end diastolic diameter (EDD) was found to range from 47 to 58 mm with a mean value of 53.4 mm. Right ventricular diameter (RVD) was found to range from 20 to 26 mm. With a mean value of 21.6 mm.

Interventricular septum was found to range from 7 to 10 mm with a mean value of 8.36 mm. There was no change in Echocardiographic findings before or after injection sclerotherapy.

Table (14) shows Echocardiographic findings in group B. Three patients had valvular lesions as mild tricuspid regurge (2 patients) and fibrocalcific aortic regure (one patient). Ejection fraction was found to range from 63 to 83% with a mean value of 70.8%. LVESD was found to range from 30 to 37 mm with a mean value of 33.1. LVEDD was found to range from 50 to 58 mm with a mean value of 53.05 mm. RVD was found to range from 20 to 26 mm with a mean value of 21.9 mm. IVS was found to range from 7 to 9.6 mm with a mean value of 8.55 mm.

Table (15) shows Echocardiographic findings in control group. Valvular lesions was found only in one patient as mistral value prolapse. Ejection fraction was found to range from 55 to 73% with a mean value of 67.9%. LVESD was found to range from 30 to 42 mm with a mean value of 33.6 mm LVEDD was found to range from 18 to 24 mm with a mean value of 20.9 mm. IVS was found to range from 7.2 to 13mm with a mean value of 8.54 mm.

Table (16) shows comparison between mean values of FVC and arterial blood gases in group A before and after sclerotherapy. The FVC was 1.815±0.64 liters before sclerotherapy and 1.36±0.5 liters after sclerotherapy. FVC after sclerotherapy was significantly lower than that before sclerotherapy PO_2 was 82.74±9.25 mmHg before sclerotherapy and 73.57±9.87 mmHg after sclerotherapy. PO_2 after sclerotherapy was

significantly lower than that before sclerotherapy. pH was 7.430 .042 before sclerotherapy and 7.42 0.03 after sclerotherapy with no significant difference. PCO_2 was 39.64 5.94 mmHg before sclerotherapy and 39.72 8.044 mmHg after sclerotherapy with no significant difference. HCO_3 was 26.54 4.86 mmol/dl and 27.555 .39 mmol/dl. O_2 saturation was 96.57 1.65 % before sclerotherapy and 93.87 2.85% after sclerotherapy O_2 saturation after sclerotherapy was significantly lower than that before sclerotherapy.

Table (17) shows comparison between mean values of FVC and PO_2 among control group, group A after sclerotherapy by one day and group B who completed injection sclerotherapy and had obliterated varices. FVC was 1.48 $\pm$0.24 liters in control group, 1.36$\pm$0.5 liters in group A and 1.89$\pm$0.45 liters in group B. FVC in group B was significantly higher than that in group A after sclerotherapy.

Table (18) shows comparison between mean values of arterial blood gases in group A after sclerotherapy, group B and control group.

PO_2 was 81.34 7.45 mmHg in control group, 73.579 .87 mmHg in group A after sclerotherapy and 86.11 7.48 mmHg in group B. PO_2 in group A after sclerotherapy was significantly lower than that in control group and that in group B. pH was 7.41 0.03 in control group, 7.42 0.042 in group A after sclerotherapy and 7.420 .025 in group B with no significant difference between the 3 groups, PCO_2 was 38.82 3.49 mmHg in control group, 39.645 .94 mmHg in group A after sclerotherapy and 38.5 4.78 mmHg in group B with no significant difference between the 3 groups. HCO_3 was 23.813 .66 mmol/dl in

found to range from 54000 to 255000 with a mean value of 116960. While after sclerotherapy platelets were found to range from 72000 to 282000 with a mean value of 156500.

Table (21) shows WBCs and platelets count in group B patients. WBCs were found to range from 2500 to 6200 with a mean value of 3350. Platelets were found to range from 30000 to 180000 with a mean value of 105000.

Table (22) shows WBCs and platelets count among patients of group C (control group) WBCs were found to range from 2100 to 10111 with a mean value of 4130. Platelets were found to range from 65000 to 195000 with a mean value of 157900.

Table (23) shows comparison between mean value of WBCs and platelets count in group A before and after injection sclerotherapy. WBCs count before sclerotherapy was 5965±3287 while after sclerotherapy was 8120±3057. WBCs count after sclerotherapy was significantly higher than that before sclerotherapy. Platelets count before sclerotherapy was 116960±54029 while after sclerotherapy was 156500±53820. Platelets count after sclerotherapy was significantly higher than that before sclerotherapy.

Table (24) shows comparison between mean values of WBCs and platelets among control group, group A after sclerotherapy and group B. WBCs count was 4130±2486 in control group, 8120±3057 in group A after sclerotherapy and 3350±809 in group B. WBCs count in group A

after sclerotherapy was significantly higher than that in control group, and that in group B.

Platelets count was157900±68326 in control group, 157900±53820 in group A after sclerotherapy and 106950±35099 in group B. Platelets count in group A after sclerotherapy was significantly higher than that in group B, but no significant difference between group A and control group.

Figure (1) shows distribution of Child classes among patients of group A, B and C.

Among patients of group A 50% were class A, 35% were class B and 15% class C.

Among patients of group B 75% were class A and 25% were class B. Among patients of group C 20% were class A, 30% were class B and 50% were class C.

Figure (2) shows a three dimensional histogram which demonstrates the mean value of FVC among group A patients before and after injection sclerotherapy FVC was significantly lower after sclerotherapy than before sclerotherapy.

Figure (3) shows a three dimensional histogram which demonstrates the mean value of PO2 among group A patients before and after injection sclerotherapy. PO2 was significantly lower after sclerotherapy than before sclerotherapy.

Figure (4) shows a three dimensional histogram which demonstrates the mean values of FVC in control group, group A after injection sclerotherapy and group B. FVC in group A after sclerotherapy was significantly lower than group B and control group.

Figure (5) shows a three dimensional histogram which demonstrates the mean values of PO2 in control group, in group A after sclerotherapy and group B. PO2 in group A after sclerotherapy was significantly lower than group B and control group.

Figure (6) shows the mean values of FVC in control group, group A after sclerotherapy and group B. FVC in group A after sclerotherapy was significantly lower than group B and control group.

Figure (7) shows the mean values of PO2 in control group, group A after sclerotherapy and group B. PO2 in group A after sclerotherapy was significantly lower than group B and control group.

Figure (8) shows comparison between FVC mean values in group A before and after injection sclerotherapy and group B. FVC after injection sclerotherapy (one day after) was significantly lower than that before sclerotherapy but it return to normal value again in group B (after completing schedule of sclerotherapy) which is significantly higher than group A after sclerotherapy.

Figure (9) shows comparison between PO_2 mean values in group A before and after injection sclerotherapy and group B. PO_2 after injection sclerotherapy (one day after) was significantly lower than that

efore injection sclerotherapy but it returned to normal value again in roup B (after completing schedule of sclerotherapy) which is gnificantly higher than group A after sclerotherapy.

Figure (10) shows the correlation between the changes in PO2 and VC among injected patients of group A after sclerotherapy. There was significant correlation between the decrease in PO2 and the percentage decrease in FVC.

Figure (11) shows mean values of WBCs and platelets count among group A before and after sclerotherapy. WBCs and platelets count was significantly higher after sclerotherapy than before sclerotherapy.

Figure (12) shows mean values of WBCs and platelets count in control group, group A after sclerotherapy and group B. WBCs count in group A after sclerotherapy was significantly higher than group B and control group. Platelets count in group A after sclerotherapy was significantly higher than group B, but there was no significant difference between group A and control group.

Figure (13) shows comparison between mean values of WBCs and platelets count in group A before and after injection sclerotherapy and group B. WBCs and platelets count after sclerotherapy (one day after) was significantly higher than before sclerotherapy but it returned to be low again in group B (after completing schedule of sclerotherapy) which is significantly lower than group A after sclerotherapy.

Table (1): Age, sex and diagnosis for patients treated with injection sclerotherapy (group A).

Patient No.	Age (years)	Sex	Diagnosis
1	56	F	HCV+ve, Liver cirrhosis, Haematemesis
2	69	M	Liver cirrhosis, splenomegaly, massive ascites, Haematemesis
3	33	M	BHF, Splenomegaly, Haematemesis
4	54	M	BHF, cirrhosis, Splenomegaly, Hepatic encephalopathy, Haematemesis, moderate ascites
5	54	M	BHF, cirrhosis, Splenomegally, tense ascites, Haematemesis
6	67	M	BHF, HCV+ve, cirrhosis splenomegaly, ascites, Haemetemesis
7	36	F	BHF, Splenomegaly, Haematemesis
8	43	M	BHF, cirrhosis, Haemetemesis, hepatic encephalopathy, jaundice, ascites
9	39	M	BHF, spelenomegaly, Haematemesis
10	52	M	BHF, Haematemesis, hepatic encephalopathy, ascites
11	48	M	BHF, splenomegaly, Haematemesis
12	61	M	Liver cirrhosis, moderte ascites, haematemesis
13	49	M	BHF, haematemesis
14	51	M	BHF, haematemesis
15	48	M	BHF, Splenomegaly, haematemesis
16	52	M	BHF, cirrhosis, jaundice, Splenomegaly, haematemesis, ascites
17	41	M	BHF, haematemesis
18	43	M	BHF, haematemesis
19	43	M	BHF, cirrhosis, Splenomegaly, ascites, haematemesis
20	51	M	BHF, cirrhosis, splenomegaly, haematemesis, moderate ascites
Mean S.D.	49.5 9.4		

S.D. : Standard deviation
F : Female
M : Male.

Table (3): Age, sex and diagnosis for patients with portal hypertension without history of bleeding varices nor injection sclerotherapy (control group).

No.	Age (years)	Sex	Diagnosis
1	40	M	BHF, liver cirrhosis, splenomegaly, no ascites
2	58	M	BHF, cirrhosis, HCV +ve, hepatic encephalopthy, jaundice
3	41	M	Liver cirrhosis, tense ascites, splenomegaly
4	61	M	BHF, anaemia
5	41	M	BHF, cirrhosis, splenomgely, jaundice, moderate ascites
6	65	M	BHF, cirrhosis, hepatosplenomegaly tense ascites
7	51	F	BHF, cirrhosis, splenomgely, HCV +ve, tense ascites, jaundice
8	50	M	Liver cirrhosis, moderate ascites, splenomegaly
9	63	M	BHF, cirrhosis, tense ascites, splenomegaly
10	62	M	BHF, tense ascites, hepatic encephalopathy, jaundice
Mean S.D.	49.5 9.4		

M : Male
F : Female

...on (Child's classification) among group A.

Patient No.	Serum bilirubin (mg/100 ml)	Prothrombin activity (%)	SGOT (R&F units)	SGPT (R&F units)	Serum Albumin (gm/100 ml)	Ascites	Hepatic encephalopathy	Child class
1	0.8	68	24	34	3.7	-	-	A
2	2.1	68	15	18	3	massive	-	B
3	1.5	60	25	28	3.5	-	-	A
4	3	64	52	67	2.3	moderate	Confused	C
5	2	62	25	15	3.1	tense	-	B
6	1.5	61	35	28	3	moderate	-	B
7	0.7	75	30	37	3.4	-	-	A
8	4.5	40	26	26	2.1	moderate	coma	C
9	0.6	73	16	15	3.6	-	-	A
10	1.6	52	10	18	2	mild	confused	C
11	1.8	96	21	35	3.2	-	-	A
12	2.2	52	58	35	2.8	moderate	-	B
13	0.9	44	22	24	3.2	-	-	A
14	2	70	15	31	3.3	-	-	A
15	1.2	75	35	35	2.9	-	-	A
16	4	70	37	35	2.5	mild	-	B
17	1.5	100	23	42	2.8	-	-	A
18	1.3	84	28	26	3.5	-	-	A
19	2.1	80	19	20	2.6	mild	-	B
20	1.3	84	21	19	2.4	moderate		B
Mean±SD	1.83±1.016	68.9±15.58	26.85±11.94	29.4±11.94	2.9±0.5			

(Child's classification) among group B.

Patient No.	Serum bilirubin (mg/100 ml)	Prothrombin activity (%)	SGOT (R&F units)	SGPT (R&F units)	Serum Albumin (gm/100 ml)	Ascites	Hepatic encephalopathy	Child class
1	0.9	80	20	28	3.3	-	-	A
2	0.6	85	39	35	2.9	-	-	A
3	0.9	60	33	35	3.1	-	-	A
4	0.8	80	22	35	2.7	-	-	A
5	0.8	75	20	15	3.4	-	-	A
6	1.1	73	18	30	2.7	-	-	A
7	0.9	65	30	30	2.9	-	-	A
8	1.3	80	35	36	2.7	-	-	A
9	2.2	62	28	45	2.5	mild	-	B
10	1.2	70	17	31	3	-	-	A
11	1.1	65	22	18	2.6	-	-	A
12	0.9	68	23	20	2.8	-	-	A
13	2.5	67	21	21	2.3	mild	-	B
14	1.8	64	24	19	2.7	mild	-	B
15	1.0	80	20	25	3.1	-	-	A
16	1.2	77	23	26	3.0	-	-	A
17	1.1	81	30	28	3.1	-	-	A
18	2.1	69	31	21	2.9	mild	-	B
19	0.9	70	32	20	2.8	mild	-	B
20	1.0	82	28	21	2.7	-	-	A
Mean±SD	1.25±0.44	73.0±8.55	26.2±7.8	32.0±7.6	2.85±0.28			

(Child's classification) among control group.

Patient No.	Serum bilirubin (mg/100 ml)	Prothrombin activity (%)	SGOT (R&F units)	SGPT (R&F units)	Serum Albumin (gm/100 ml)	Ascites	Hepatic encephalopathy	Child class
1	0.4	76	37	24	3.5	-	-	A
2	4.2	60	75	85	2.2	mild	confused	C
3	2.7	64	63	92	2	tense	-	C
4	0.3	75	31	25	3	-	-	A
5	6.7	48	95	117	2.1	moderate	-	C
6	2.1	70	34	37	2.6	tense	-	B
7	3.4	60	42	38	2	tense	-	C
8	1.3	70	25	30	2.8	moderate	-	B
9	1.2	70	23	35	2.7	tense	-	B
10	3.5	47	53	58	2.3	tense	Coma	C
Mean±SD	2.58±1.96	64.0±10.27	47.8±23.5	54.1±32.68	2.52±0.49			

Table (7): Distribution of child class among three studied groups.

Child class	Group A		Group B		Group C	
	No.	%	No.	%	No.	%
Class A	10	50	15	75	2	20
Class B	7	35	5	25	3	30
Class C	3	15	0	0	5	50
Total	20	100	20	100	10	100

Table (8): Cardio-pulmonary manifestations among patients of group A after oesophageal variceal injection sclerotherapy.

Patient No.	Retrosternal pain	Cough	Dyspnoea	Haemoptysis
1	-	-	-	-
2	+	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	+	-	-	-
10	-	-	-	-
11	+	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	+	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	+	-	-	-

Table (9): FVC among group A (before and after injection Sclerotherapy), group B and Control group.

PATIENT NO.	GROUP A		GROUP B	CONTROL GROUP
	Before	After		
1	1.2	1	2.1	1.6
2	1.2	1.1	1.7	1.2
3	3.2	2.8	2.0	1.4
4	1	0.8	1.5	1.8
5	2	1.5	1.0	1.6
6	1.1	1	3.2	1.4
7	1.4	1.1	1.7	1.3
8	1.5	1.2	1.6	1.8
9	2.5	1.8	1.8	1.6
10	1.3	0.8	2.1	1.1
11	2.4	1.8	2.5	
12	1	0.7	2.0	
13	2.2	1.8	1.8	
14	2	1.1	1.7	
15	2.2	1.5	1.5	
16	2.1	1.7	1.6	
17	2.4	1.8	2.1	
18	1.1	0.8	1.7	
19	2.7	1.6	1.8	
20	1.8	1.3	2.4	
Mean±S.D.	1.815±0.64	1.36±0.50	1.89±0.45	1.48±0.24

FVC : Forced vital capacity.

Table (10): Arterial blood gases study among group A (Before and after injection sclerotherapy).

NO.	PO_2 (mm Hg)		pH		PCO_2 (mm Hg)		HCO_3 (mmol/dl)		O_2 saturation (%)	
	Before	after	Before	After	Before	After	Before	After	Before	after
1	73.9	63.5	7.4	7.48	40.7	37.7	25.3	27.9	95.0	93.8
2	70.4	64.8	7.38	7.48	36.1	39	21.8	21.1	94.1	92.6
3	91.1	83.9	7.37	7.36	40.1	41.3	19	23.2	96.3	93.7
4	68.7	61.9	7.46	7.45	35	39.1	25.1	24.9	94.8	93.7
5	97.5	77.8	7.38	7.35	40.6	41.5	30	22.8	97.8	89.1
6	84.8	76.9	7.48	7.46	40.6	38.3	30.9	20.2	97.7	89.0
7	82.6	79.2	7.44	7.44	34	33.1	27.1	26.7	97.2	96.9
8	84.8	63.9	7.46	7.48	28	36.8	28.7	26.9	96.0	93.9
9	78.8	68.2	7.38	7.4	35	36.2	25.3	22.5	95.0	92.3
10	87.9	80.5	7.41	7.42	44	41.1	28.1	27.5	98.0	93.1
11	77.7	56.1	7.43	7.49	51	32.7	33.1	24.9	98.6	92.3
12	90.9	80.2	7.41	7.41	32	32	20.4	27.0	97.7	92.2
13	88.2	75.4	7.42	7.44	40.2	49.8	34.2	33.1	98.2	95.4
14	94.6	88.5	7.45	7.38	26.9	40.4	18.6	23.0	97.5	96.6
15	92.6	87.7	7.42	7.41	42.2	34.8	27.2	22.2	97.8	95.5
16	85.4	78.8	7.42	7.38	56.8	39.4	36.7	33.5	96.5	91.8
17	63.4	60.2	7.41	7.38	43.6	42.1	27.6	25.7	92.1	88.7
18	86	84.4	7.45	7.44	35.6	58.4	24.7	40.1	96.8	96.6
19	83.3	75.8	7.44	7.43	56.5	39.9	38.1	31.1	96.4	95.1
20	72.3	63.8	7.42	7.42	35.5	39.1	29	26.5	97.8	95.0
M S. D	82.75 9.25	73.58 9.87	7.43 0.04	7.42 0.03	39.64 5.94	39.72 8.04	26.54 4.86	27.55 5.39	96.57 1.65	93.87 2.85

Table (11): Arterial blood gases study in Group B.

NO.	PO_2 (mm Hg)	pH	PCO_2 (mm Hg)	HCO_3 (mmol/dl)	O_2 saturation (%)
1	77	7.37	33.7	19.4	94.7
2	89.7	7.45	35.3	23.2	95.1
3	95.2	7.42	37.2	22.9	98.3
4	87.5	7.45	30.4	26.7	98.4
5	85.7	7.45	39.3	27.3	96.9
6	81.1	7.42	45.8	30.0	91.7
7	99.3	7.45	42.9	29.5	97.9
8	66.6	7.44	37.7	27.5	94.5
9	86.7	7.42	46.0	32.1	98
10	87.8	7.41	25.7	16.1	98.7
11	82.1	7.38	43.2	28.1	97.1
12	87.3	7.43	39.4	23.5	95.8
13	79.4	7.4	37.7	24.6	92.9
14	84.2	7.39	40.5	27.5	94.3
15	88.3	7.44	41.3	21.8	95.3
16	94.3	7.41	39.1	28.4	97.7
17	92.3	7.42	38.5	30.5	96.8
18	77.5	7.39	38.5	19.8	94.1
19	87	7.44	37.7	29.4	91.8
20	93.2	7.43	40.2	22.3	94
M S.D	36.11 7.49	7.42 0.02	38.51 4.78	25.53 4.27	95.7 2.19

Table (12): Arterial blood gases study in Control Group.

NO.	PO_2 (mm Hg)	pH	PCO_2 (mm Hg)	HCO_3 (mmol/dl)	O_2 saturation (%)
1	99.3	7.45	42.9	29.5	97.8
2	80.7	7.41	41.3	26.1	95.3
3	82.1	7.44	34.9	23.8	98.3
4	73.9	7.35	31.6	19.9	93.8
5	82.4	7.38	40.3	20.2	94.5
6	75.3	7.43	39.3	22.5	97.5
7	78.8	7.39	41.2	25.7	95.2
8	84.6	7.43	38.9	29.0	93.8
9	82.9	7.41	36.5	21.9	98.7
10	73.4	7.42	41.3	19.5	92.5
M	81.34	7.41	38.82	23.81	95.74
S.D	7.45	0.03	3.49	3.66	2.18

Table (13): Echo findings in Group A (Before and after injection sclerotherapy).

NO.	VALVULAR TEXTURE & MOTION		EJECTION FRACTION (%)		LV ESD (mm)		LV EDD (mm)		RVD (mm)		IVS (mm)	
	Before	after	Before	After	Before	After	Before	After	Before	After	Before	after
1	Mild pulmonary HTN	Mild pulmonary HTN	76	76	26	26	47	47	26	26	8	8
2	Normal	Normal	62	62	36	36	50	50	22	22	7.3	7.3
3	Normal	Normal	57	57	35	35	50	50	21	21	7.5	7.5
4	Normal	Normal	75	75	32	32	56	56	21	21	8.5	8.5
5	Normal	Normal	69	69	34	34	56	56	20	20	8.3	8.3
6	Normal	Normal	77	77	29	29	54	54	22	22	8.2	8.2
7	Normal	Normal	70	70	31	31	50	50	20	20	7	7
8	Normal	Normal	69	69	32	32	51	51	22	22	8.2	8.2
9	Mild M.V.P	Mild M.V.P	69	69	34	34	58	58	23	23	9	9
10	Normal	Normal	67	67	35	35	53	53	21	21	8	8
11	Normal	Normal	70	70	32	32	51	51	23	23	8.1	8.1
12	Normal	Normal	68	68	35	35	54	54	20	20	7.3	7.3
13	Normal	Normal	73	73	35	35	56	56	20	20	9.1	9.1
14	Normal	Normal	71	71	32	32	51	51	22	22	10	10
15	Normal	Normal	69	69	35	35	53	53	22	22	9	9
16	Normal	Normal	70	70	35	35	53	53	21	21	10	10
17	Normal	Normal	71	71	36	36	55	55	22	22	7.9	7.9
18	Normal	Normal	72	72	34	34	57	57	21	21	8.2	8.2
19	Normal	Normal	74	74	34	34	56	56	23	23	9	9
20	Normal	Normal	68	68	34	34	57	57	20	20	8.7	8.7
M S.D			69.85 4.557	69.85 4.557	33.3 2.494	33.3 2.494	53.4 2.998	53.4 2.998	21.6 1.465	21.6 1.465	8.365 0.819	8.365 0.819

* HTN : Hypertension.
* M.V.P. : Mitral valve prolapse.
* LVESD : Left ventricular end systolic diameter.
* LVEDD : Left ventricular end diastolic diameter.
* RVD : Right ventricular diameter
* IVS : Interventiricular septum.

Table (14): Echo findings in Group B.

NO.	VALVULAR TEXTURE & MOTION	EJECTION FRACTION (%)	LVESD (mm)	LVEDD (mm)	RVD (mm)	IVS (mm)
1	Mild tricuspid regurge (grade I)	75	32	58	25	7
2	Normal	68	36	50	20	9.1
3	Normal	70	33	52	21	8.1
4	Normal	70	35	53	22	7.9
5	Normal	67	33	52	20	9.1
6	Normal	67	31	55	21	9.1
7	Normal	69	30	50	22	7.5
8	Normal	71	36	51	23	9.2
9	Normal	70	30	50	20	9.3
10	Normal	73	31	53	22	9.2
11	Normal	71	36	56	23	9.5
12	Normal	73	33	56	20	8.1
13	Trivial tricuspid regurge (grade I)	83	23	50	26	7.9
14	Normal	70	37	52	22	8.1
15	Fibrocalcific aortic regurge (grade II)	70	33	51	21	8
16	Normal	71	36	53	23	9.2
17	Normal	73	34	56	20	9.5
18	Normal	72	35	53	21	8.1
19	Normal	63	32	53	23	7.5
20	Normal	70	36	57	23	9.6
M S.D		70.8 3.888	33.1 3.227	53.05 2.502	21.9 1.683	8.55 0.802

* LVESD : Left ventricular end systolic diameter.
* LVEDD : Left ventricular end diastolic diameter.
* RVD : Right ventricular diameter
* IVS : Interventiricular septum.

Table (15): Echo findings in Control Group.

NO.	VALVULAR TEXTURE & MOTION	EJECTION FRACTION (%)	LVESD (mm)	LVEDD (mm)	RVD (mm)	IVS (mm)
1	Normal	68	31	53	20	7.9
2	Normal	71	33	52	22	8.5
3	Normal	68	35	56	20	8.1
4	Normal	62	30	53	23	7.3
5	Normal	70	36	57	19	8.9
6	Normal	55	42	78	24	13
7	Normal	69	31	51	18	8.5
8	M.V.P.	63	33	50	22	7.2
9	Normal	73	31	50	20	7.5
10	Normal	60	34	53	21	8.5
M S.D		67.9 4.864	33.6 3.534	55.3 8.301	20.9 1.853	8.54 1.668

* M.V.P. : Mitral valve prolapse.
* LVESD : Left ventricular end systolic diameter.
* LVEDD : Left ventricular end diastolic diameter.
* RVD : Right ventricular diameter
* IVS : Interventiricular septum.

Table (16): Comparison between FVC & arterial blood gases in group A before and after sclerotherapy.

	Before sclerotherapy	After sclerotherapy
FVC(liters)		
Mean	1.815	1.36
S.D.	0.64	0.509
T		2.47
P		0.009*
PO_2 (mmHg)		
Mean	82.74	73.57
S.D.	9.25	9.87
t		3.03
p		0.002*
pH		
Mean	7.43	7.42
S.D.	0.042	0.03
t		0.304
p		0.05
PCO_2 (mm Hg)		
Mean	39.64	39.72
S.D.	5.94	8.044
t		-0.038
p		0.05
HCO_3 (mmol/dl)		
Mean	26.54	27.55
S.D.	4.86	5.39
t		-0.62
p		0.05
O_2 saturation (%)		
Mean	96.57	93.87
S.D.	1.65	2.85
t		-3.67
p		0.05*

P is significant if <0.05
* Significant levels

Table (17): Comparison of FVC (in liter) in group A (after Sclerotherapy),control group and group B.

	Control group	**Group A (after sclerotherapy)**	**Group B**
FVC (in liters)			
Mean	1.48	1.36	1.89
S.D.	0.24	0.50	0.45
T		0.87	1.82
P		0.19	0.04*
t2			2.21
p^2			0.02*

t2, comparison between group A and group B
P is significant if < 0.05
* Significant level

Table (18): Comparison of arterial blood gases in group A (after sclerotherapy), group B and control group.

	Control group	Group A	Group B
PO_2 (mm Hg)			
Mean	81.34	73.57	86.11
S.D.	7.45	9.87	7.49
T		2.40	
P		0.01*	
T2			3.30
P2			0.001*
PH			
Mean	7.41	7.42	7.42
S.D.	0.03	0.03	0.025
T		-0.942	
P		0.05	
T2			0.412
P2			0.05
PCO_2 (mm Hg)			
Mean	38.82	39.72	38.505
S.D.	3.49	8.04	4.78
T		-0.399	
P		0.05	
T2			0.663
P2			0.05
HCO_3 (mmol/dl)			
Mean	23.81	27.55	25.53
S.D.	3.66	5.39	4.27
T		-1.56	
P		0.05	
T2			0.698
P2			0.05
O_2 saturation (%)			
Mean	95.74	93.87	95.7
S.D.	2.18	2.85	2.19
T		1.82	
P		0.05*	
T2			-2.28
P2			0.05*

- Significant difference

Table (19): Comparison of Echo findings in group A, group B and control group.

	Control group	Group A	Group B
Ejection Fraction (%)			
Mean	67.9	69.85	70.8
S.D.	4.86	4.56	3.89
T		-1.08	
P		0.05	
t2			-0.709
p2			0.05
LVESD (mm)			
Mean	33.6	33.3	33.1
S.D.	3.53	2.49	3.23
T		0.27	
P		0.05	
t2			0.219
p2			0.05
LVEDD (mm)			
Mean	55.3	53.4	53.05
S.D.	8.3	3.00	2.5
t		0.923	
p		0.05	
t2			0.40
p2			0.05
RVD (mm)			
Mean	20.9	21.6	21.9
S.D.	1.85	1.47	1.68
t		-1.13	
p		0.05	
t2			-0.60
p2			0.05
IVS thickness (mm)			
Mean	8.54	8.365	8.55
S.D.	1.67	0.82	0.802
t		0.389	
p		0.05	
t2			-0.72
p2			0.05

Table (20): WBCs and platelets counts among group A before and after injection sclerotherapy.

Patient No.	WBCs (/mm^3)		Plateletes (/mm^3)	
	Before	After	Before	After
1	9800	10100	125000	190000
2	5300	9700	110200	180500
3	1300	2100	56000	87000
4	7100	8000	131000	153500
5	4500	6100	125000	170000
6	5300	7500	255000	282000
7	6300	8700	212000	248000
8	6200	8900	152000	195000
9	15300	16800	185000	215000
10	7100	9800	150000	185000
11	1300	5100	65000	110000
12	7600	8500	54000	120000
13	4000	7300	90000	140000
14	4000	8500	76000	150000
15	6100	8300	110000	145000
16	4900	6100	123000	156000
17	1400	3700	65000	86000
18	10600	12200	94000	115000
19	5600	7200	106000	130000
20	5600	7800	55000	72000
Mean ±S.D.	5965 ±3287.02	8120 ±3057.1	116960 ±54029.3	156500 ±53820.1

WBCs : White blood cells.

Table (21): WBCs and platelets counts in group B.

Patient No.	WBCs (/mm^3)	Platelets (/mm^3)
1	2600	30000
2	3200	120000
3	3900	130000
4	2600	125000
5	2500	90000
6	3400	65000
7	2900	110000
8	3100	115000
9	3000	180000
10	2700	85000
11	3900	120000
12	6200	170000
13	3500	130000
14	3400	91000
15	3000	75000
16	3100	128000
17	2800	85000
18	3500	67000
19	3900	110000
20	3800	113000
Mean±SD	3350±809.483	106950±35099.07

Table (22): WBCs and platelets counts in group C.

Patient No.	WBCs (/mm^3)	Platelets (/mm^3)
1	7200	304000
2	3800	160000
3	3100	175000
4	2700	90000
5	2800	105000
6	3200	195000
7	2100	65000
8	3000	120000
9	10000	195000
10	3400	170000
Mean±SD	4130±2486.88	157900±68326.7

Table (23): Comparison between WBC and platelets counts in group A before and after injection sclerotherapy.

	Before sclerotherapy	After sclerotherapy
WBCs (/mm^3)		
Mean	5965.00	8120.00
S.D.	3287.02	3057.10
T		2.14
P		0.019*
Platelets (/mm^3)		
Mean	116960.00	156500.00
S.D.	54029.33	53820.12
T		2.31
P		0.012*

P is significant if ?0.05

- Significant levels.

Table (24): Blood analysis in control group, group A (after Sclerotherapy) and group B.

	Control group	Group A (after sclerotherapy)	Group B
WBCs (/mm^3)			
Mean	4130.0	8120.0	3350
S.D.	2486.8	3057.1	809.5
T		3.82	2.3
P		0.0005*	0.01*
t2			3.5
P^2			0.001*
Plateletes (/mm^3)			
Mean	157900	156500	106950
S.D.	68326.7	53820.12	35099.07
T		2.40	2.3
P		0.01*	0.01*
t2			
p^2			

t2, comparison between group A and group B.
P is significant if ?0.05
* Significant levels.

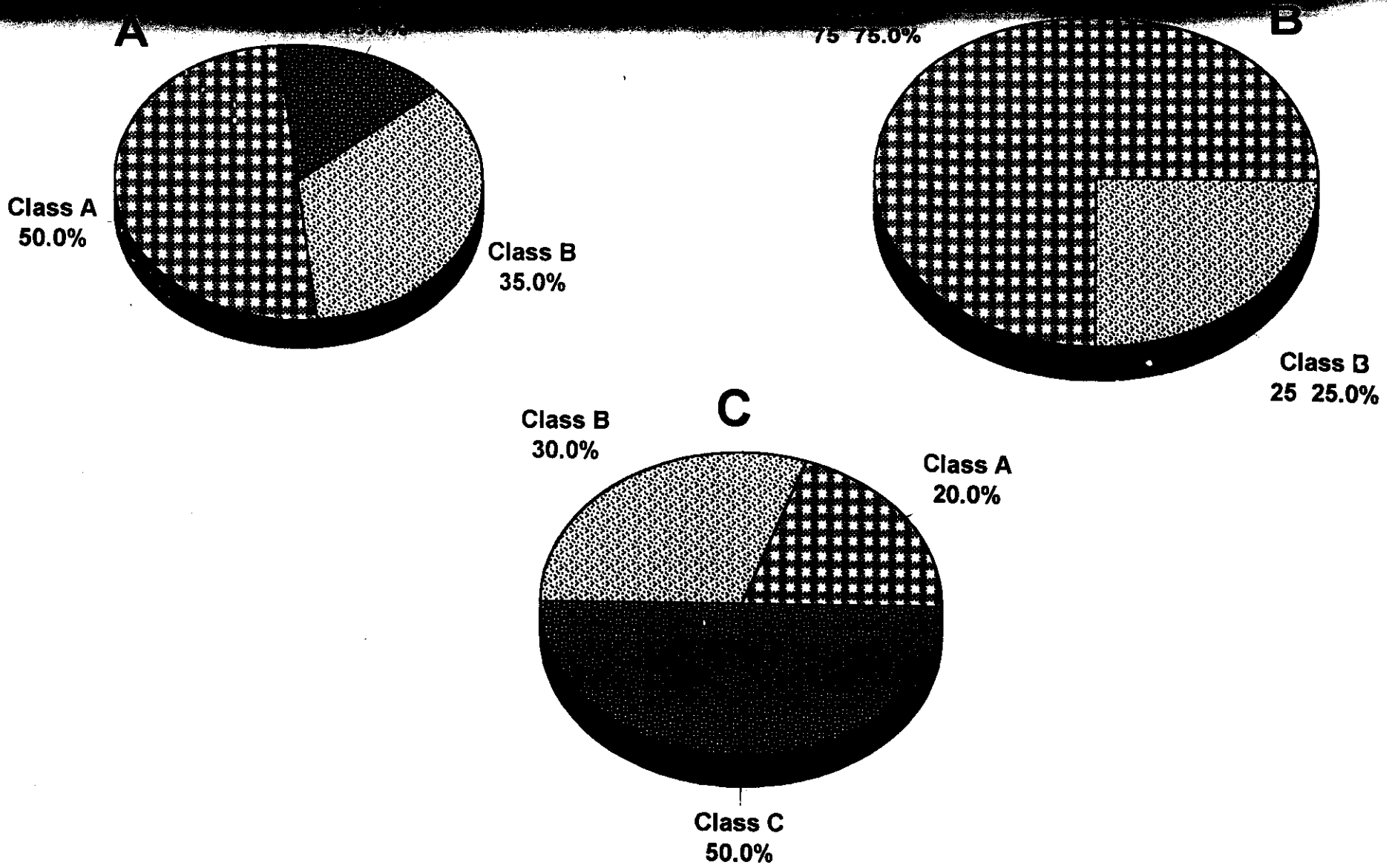

Fig.(1): Distribution of Child's classification among patients of groupA, B.and.controlgroup.

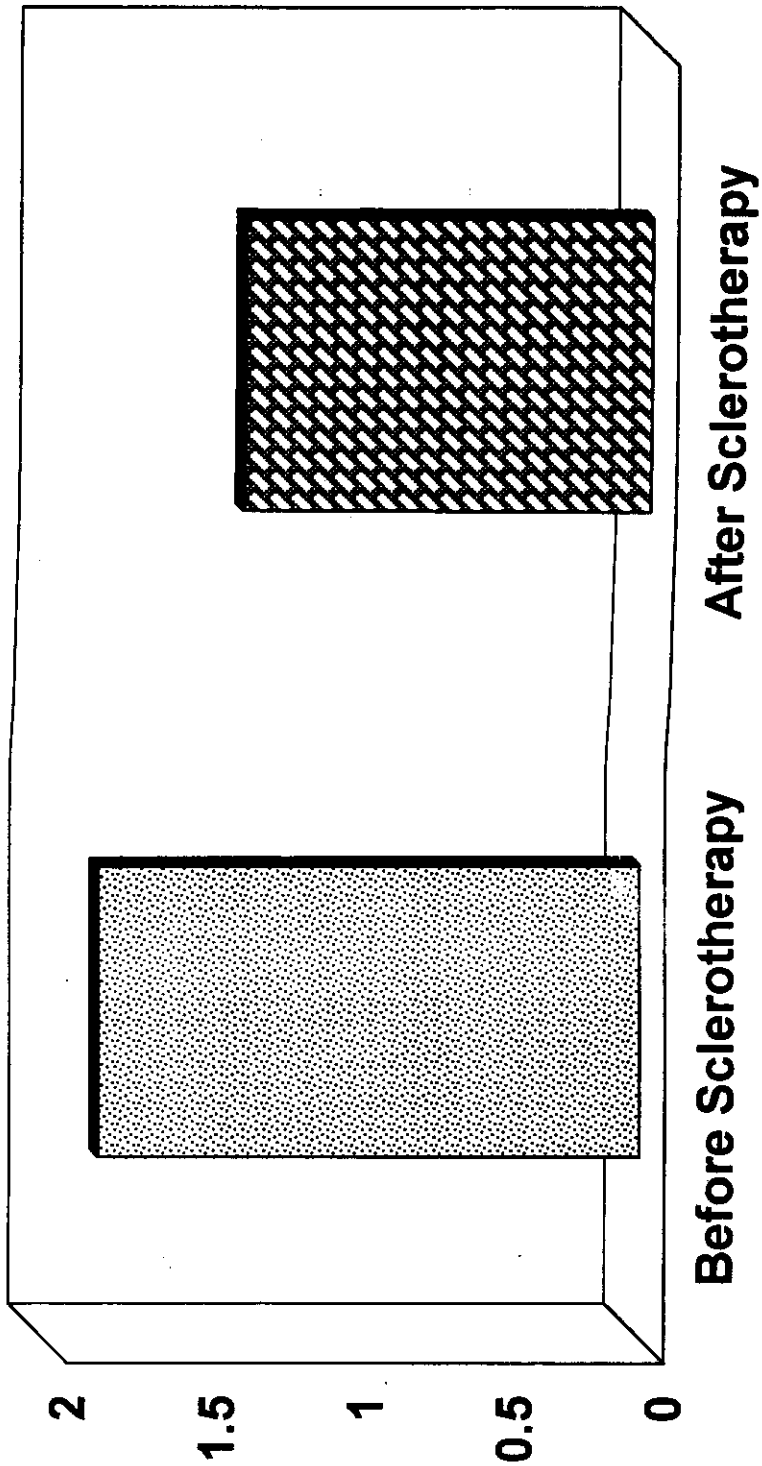

Fig. (2): FVC (in liters) among group A before and after injection sclerotherapy.

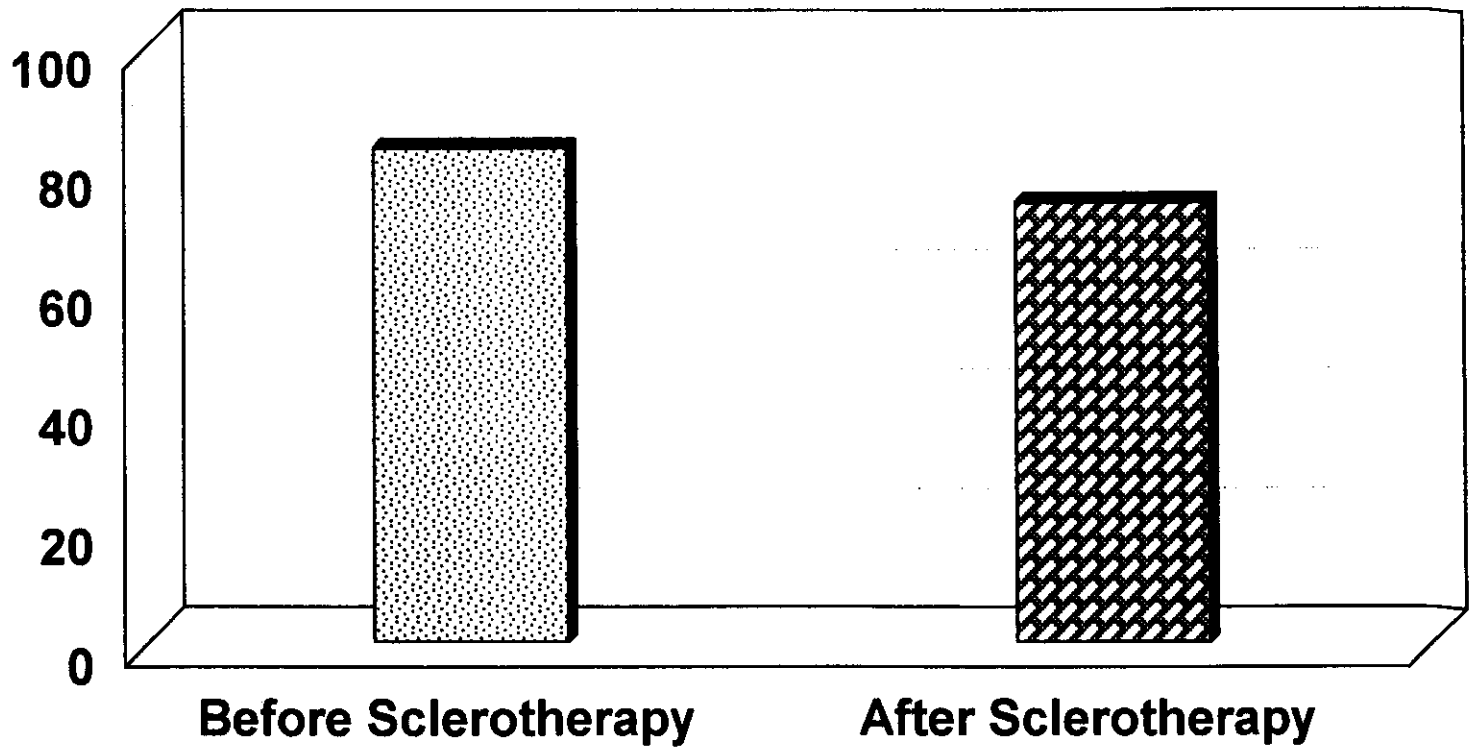

Fig. (3): PO_2(mmHg) among group A before and after injection sclerotherapy.

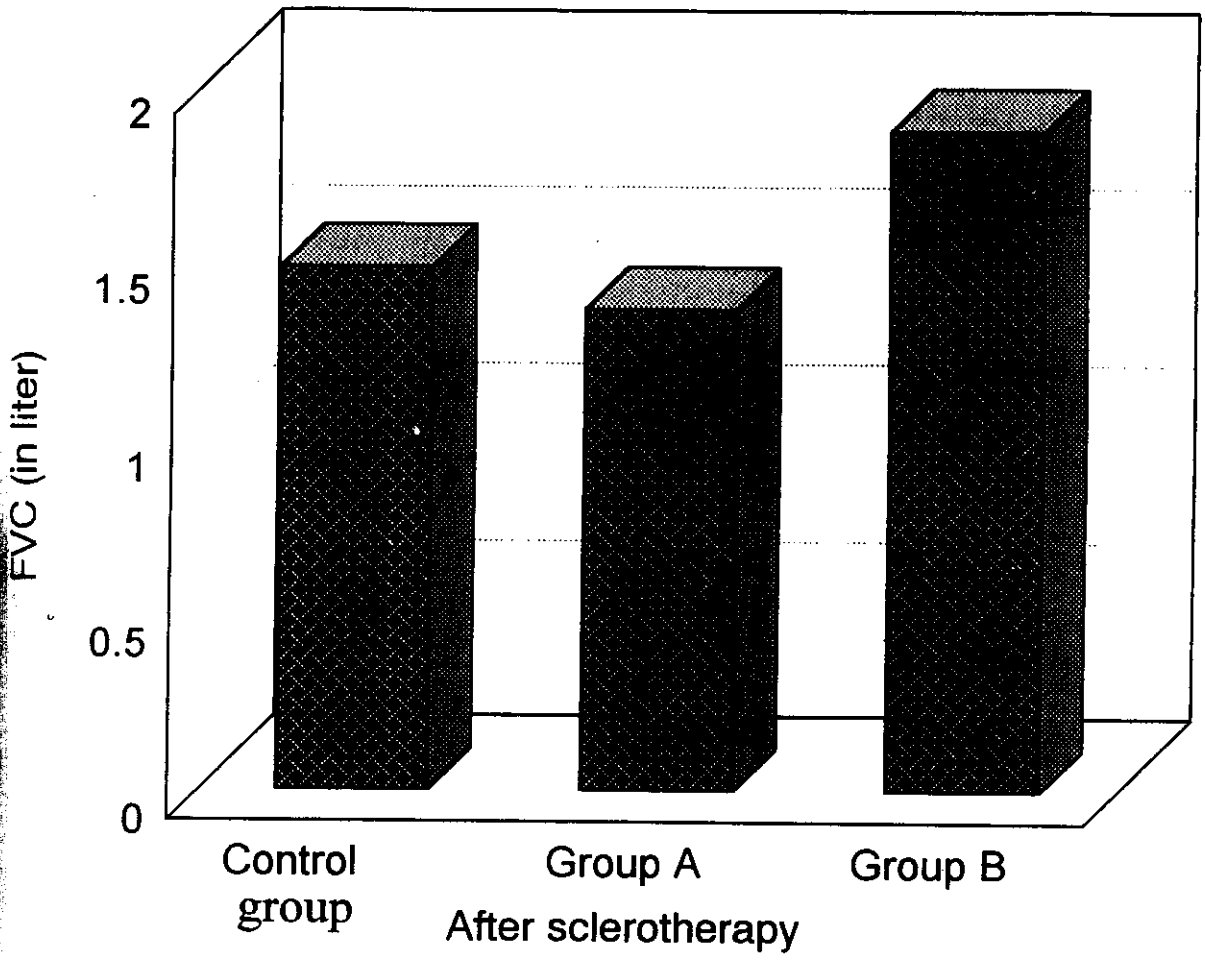

Fig.(4):FVC (in liters), among patients of groupA(after sclerotherapy),B and control group.

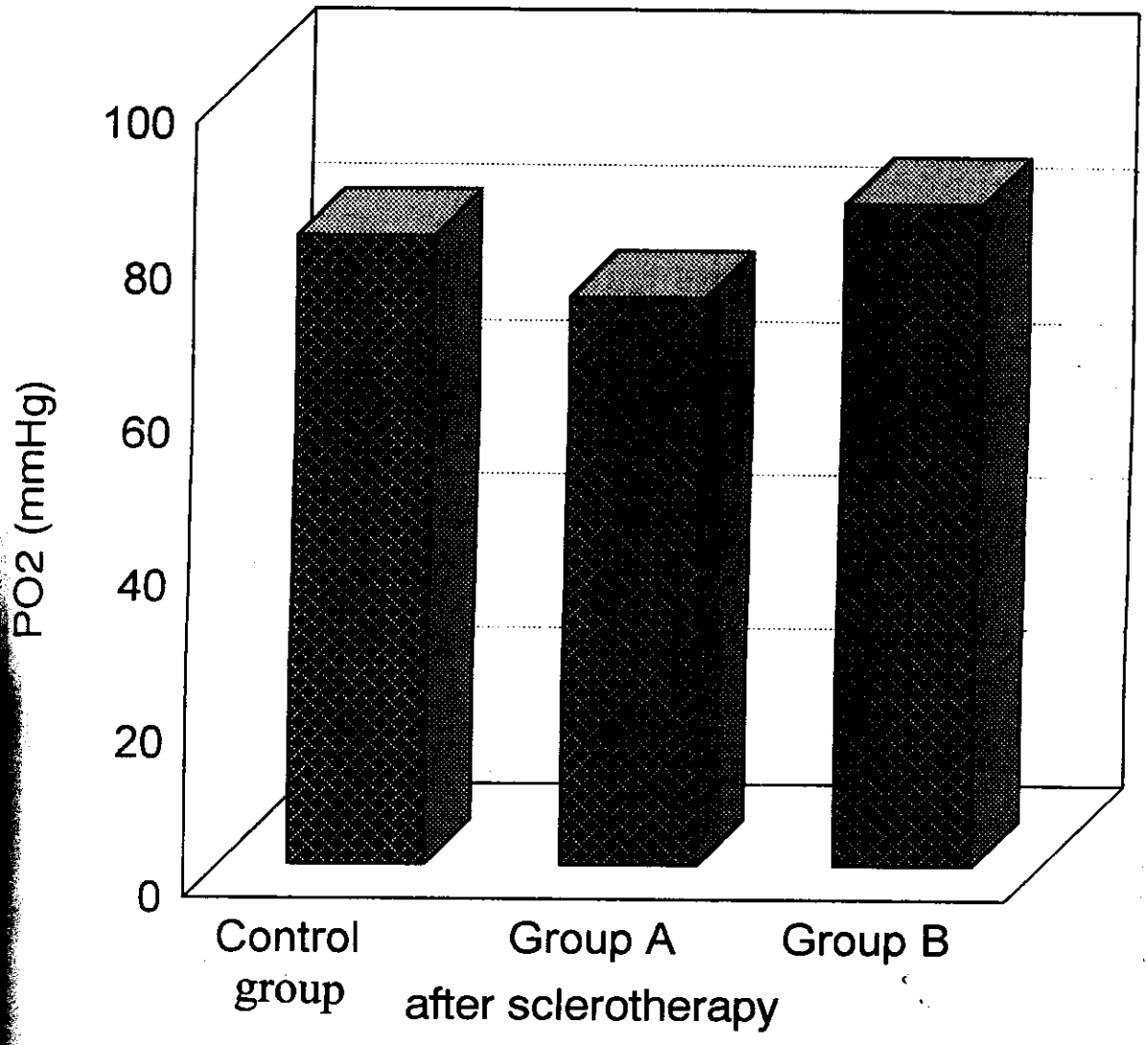

Fig.(5): PO2(mmHg), among patients of groupA(after sclerotherapy), groupB and control group.

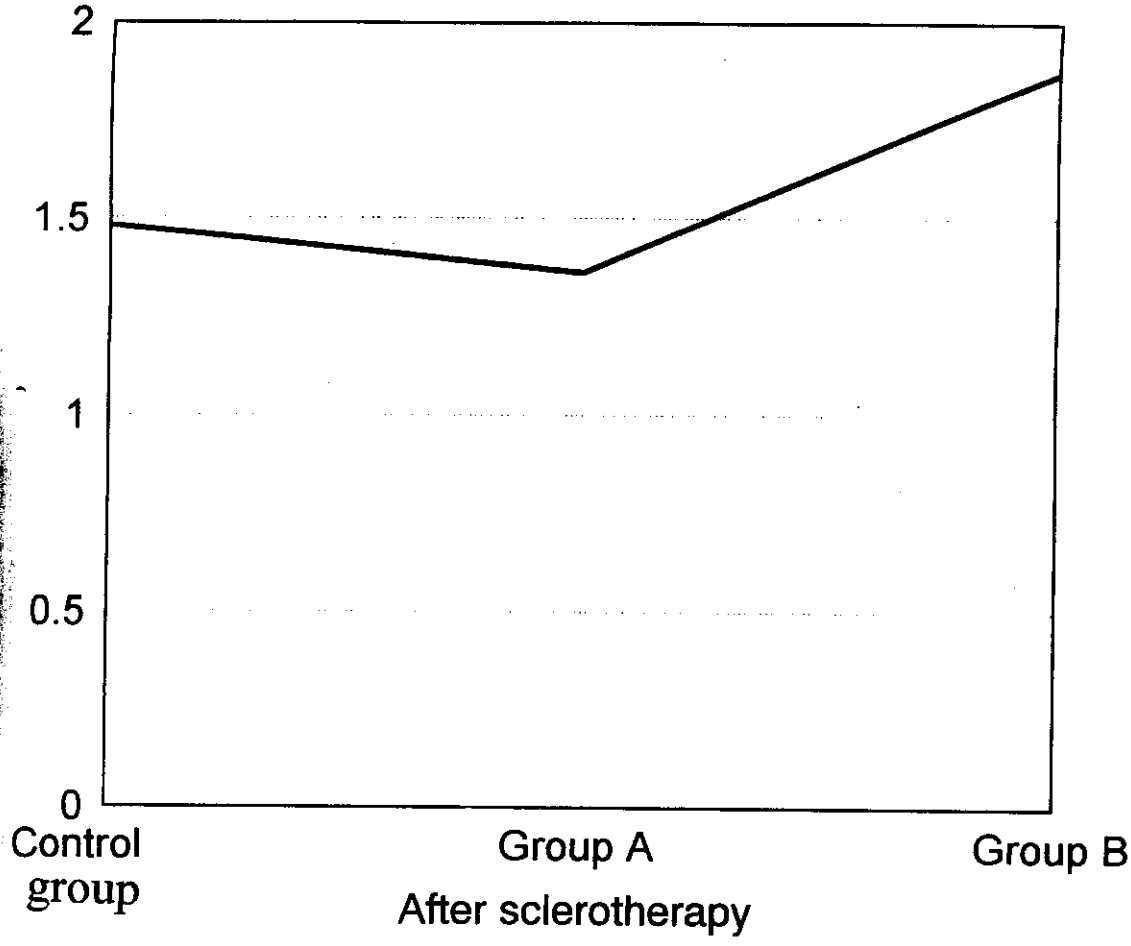

Fig.(6): FVC(in liters), among patients of groupA(after sclerotherapy), group B and control group.

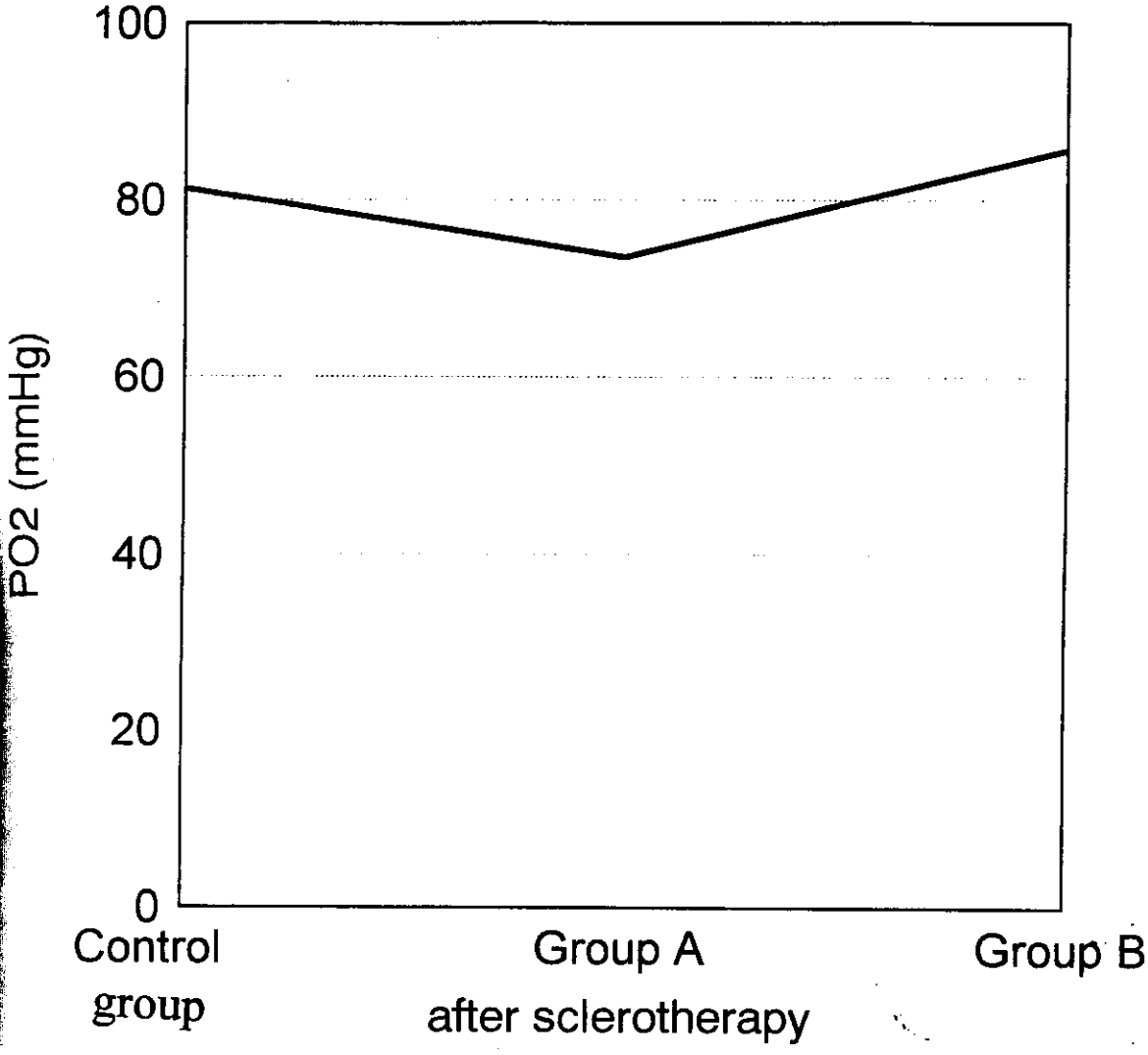

Fig.(7): PO2(mmHg), among patients of groupA(after sclerotherapy), groupB and control group.

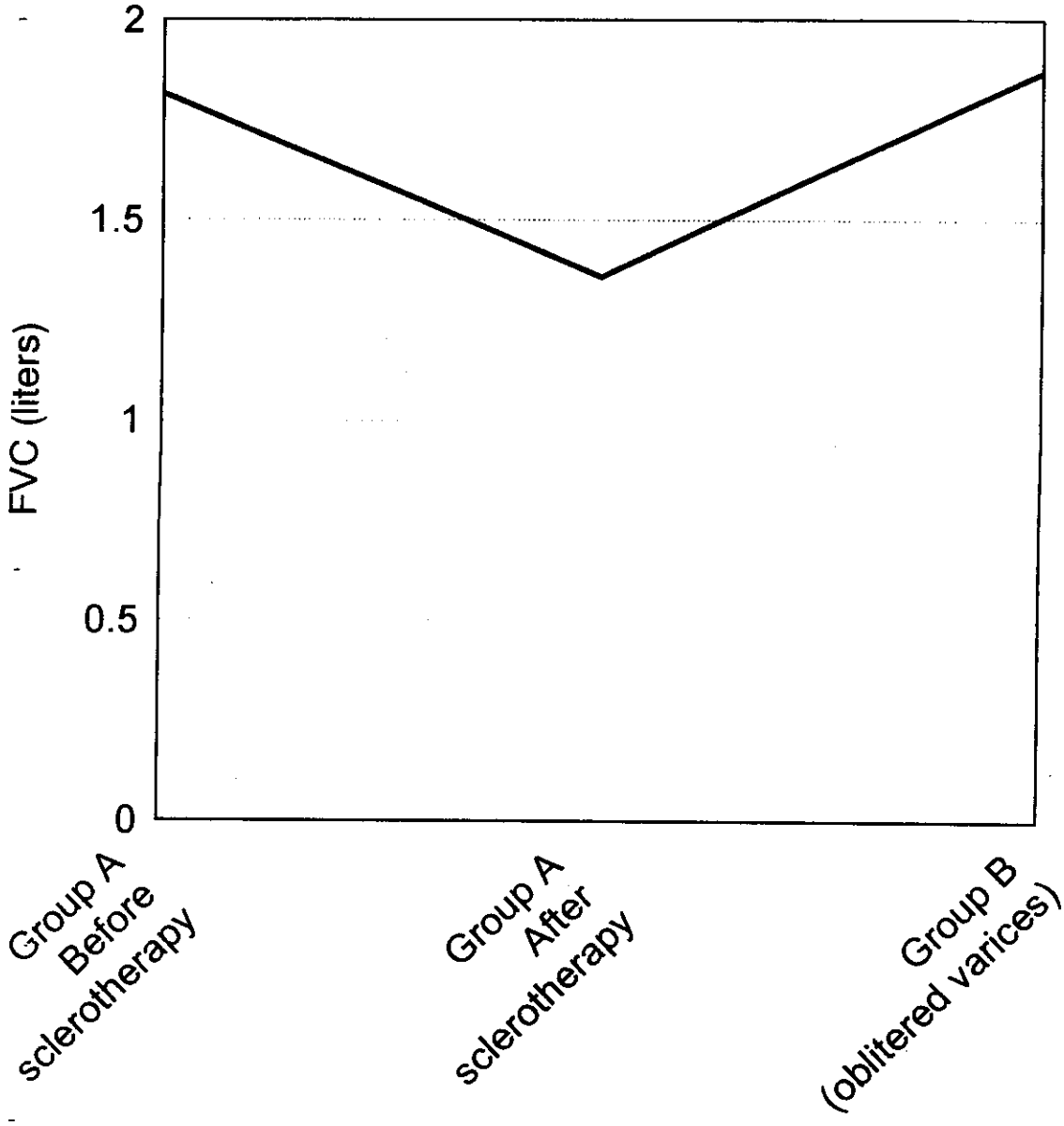

Fig. (8):Comparison between FVC (liters) in group A before and after injection sclerotherapy and group B.

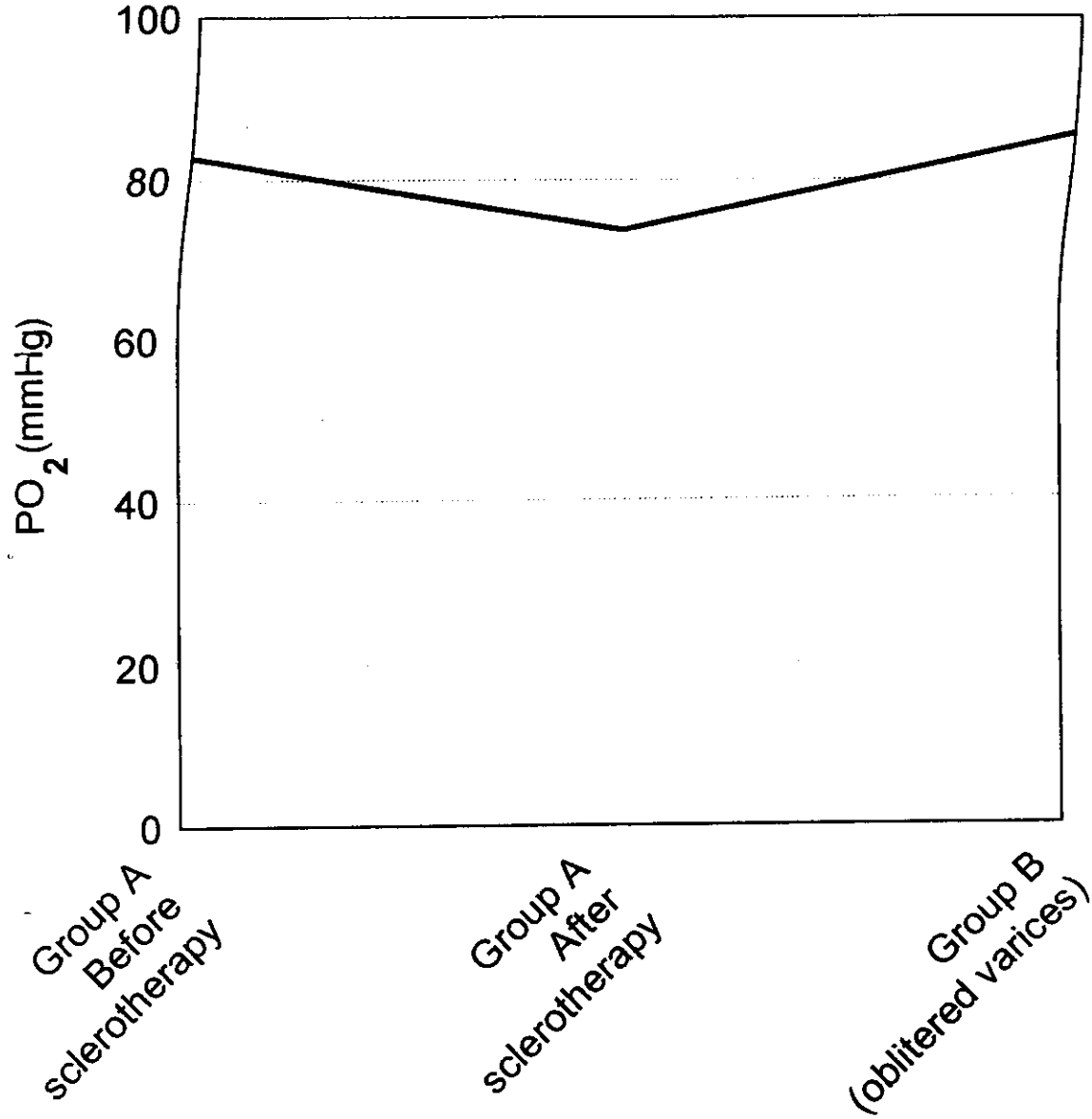

Fig. (9):Comparison between PO_2(mmHg) in group A before and after injection sclerotherapy and group B.

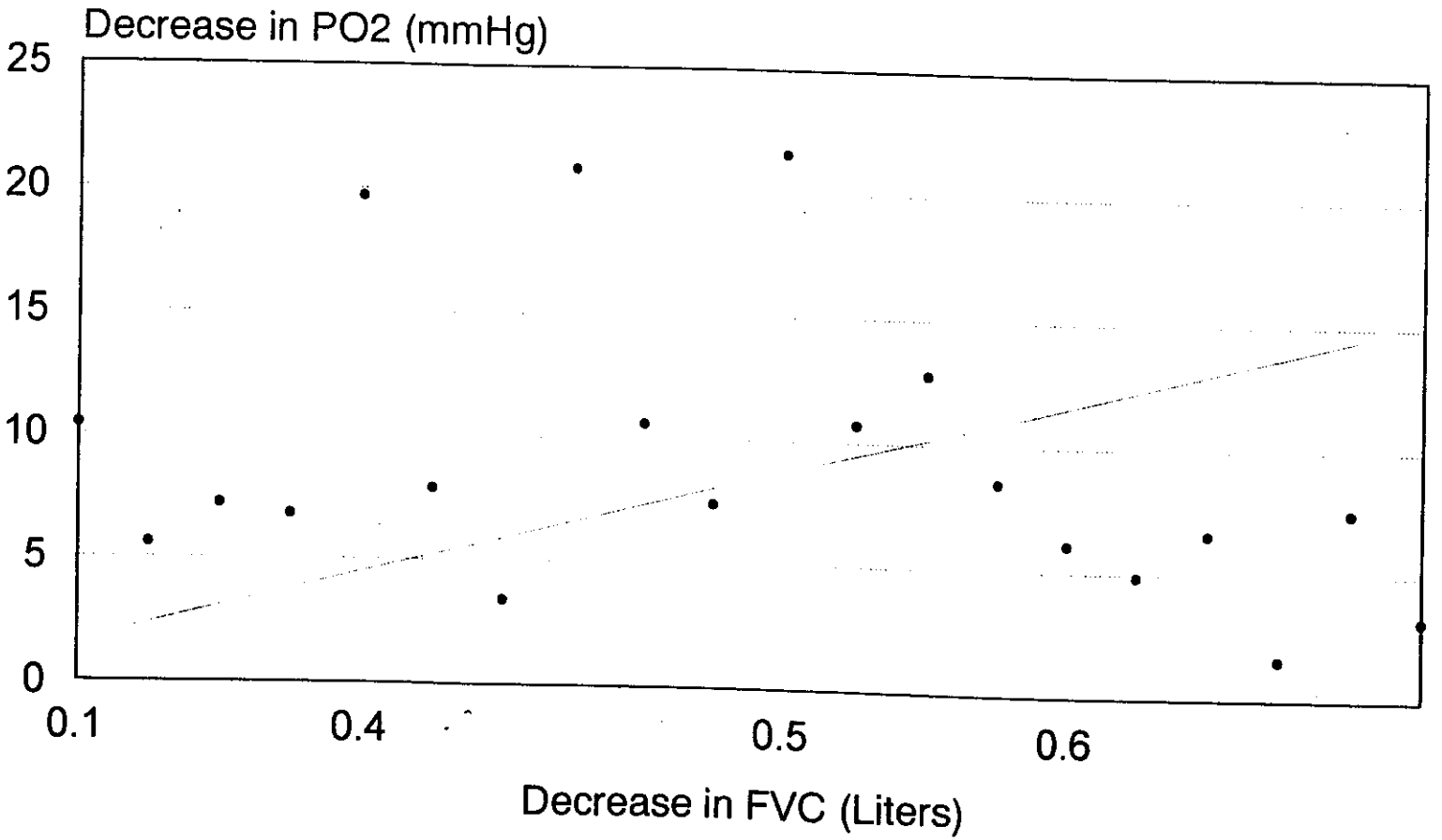

Fig. (10): Correlation between the decrease in FVC and decrease of PO2 after injection sclerotherapy among group A.

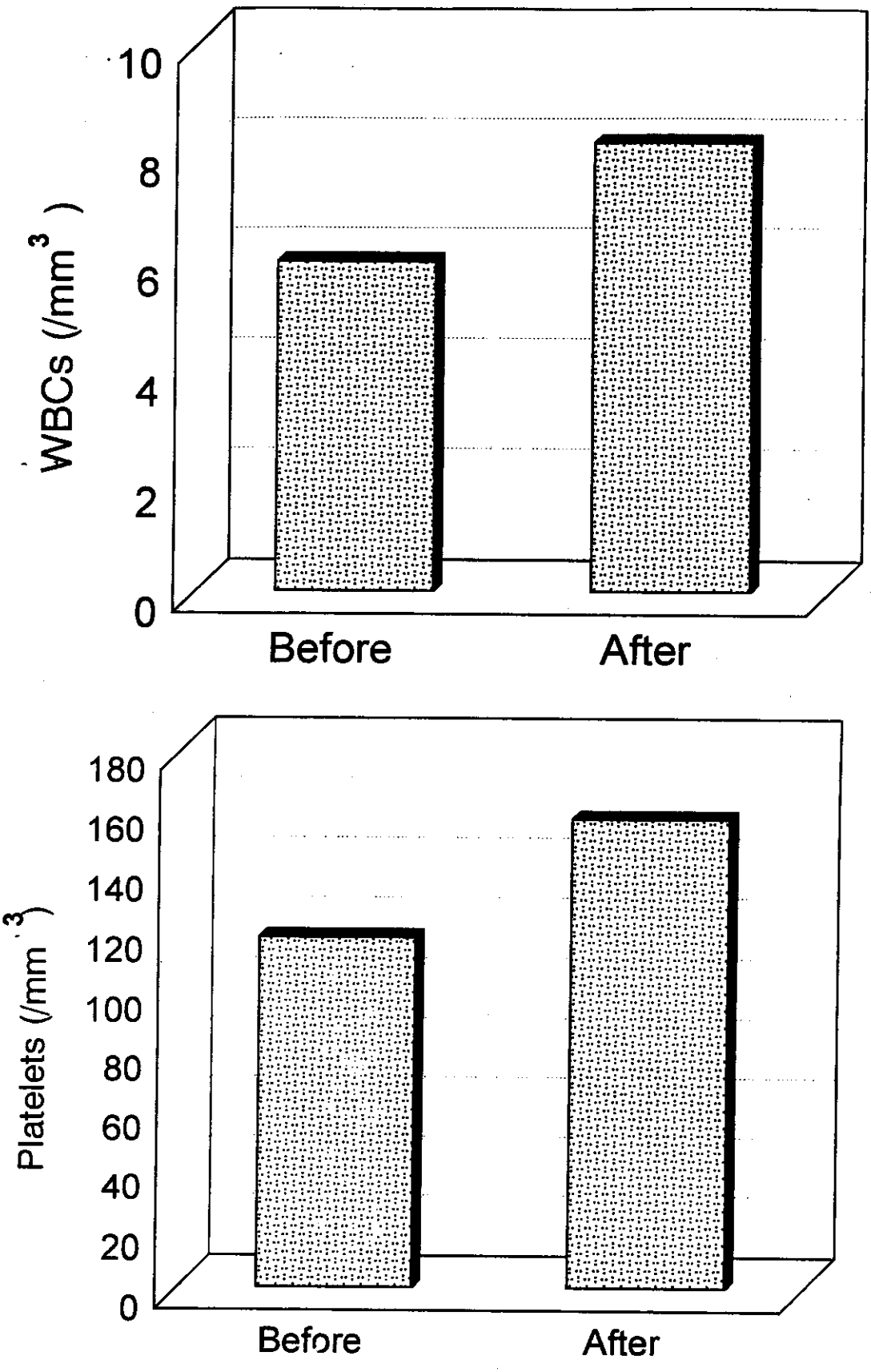

Fig. (11): WBCs, platelets among group A, before and after injection sclerotherapy.

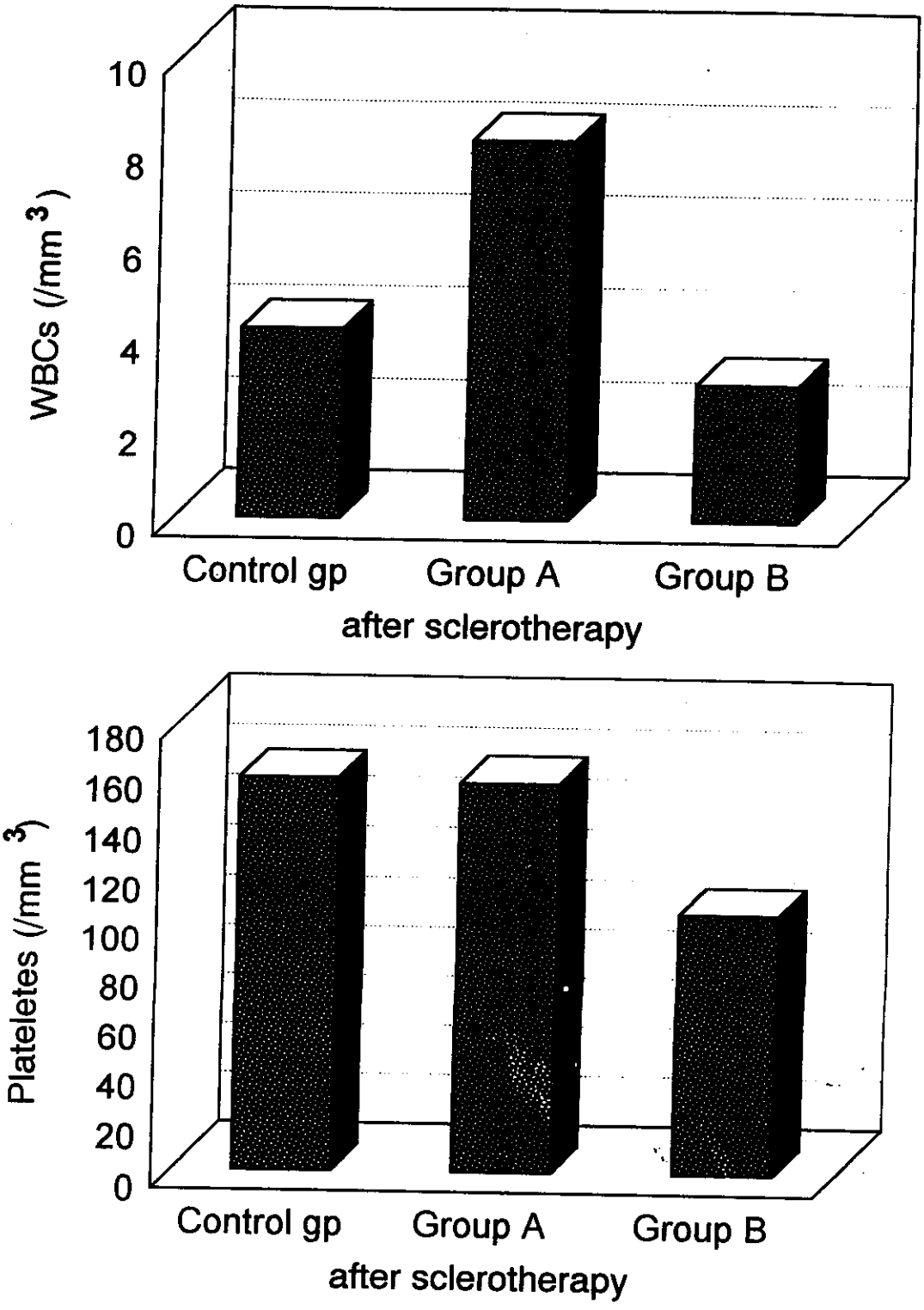

Fig. (12): Blood analysis in control group and group A after sclerotherapy and group B.

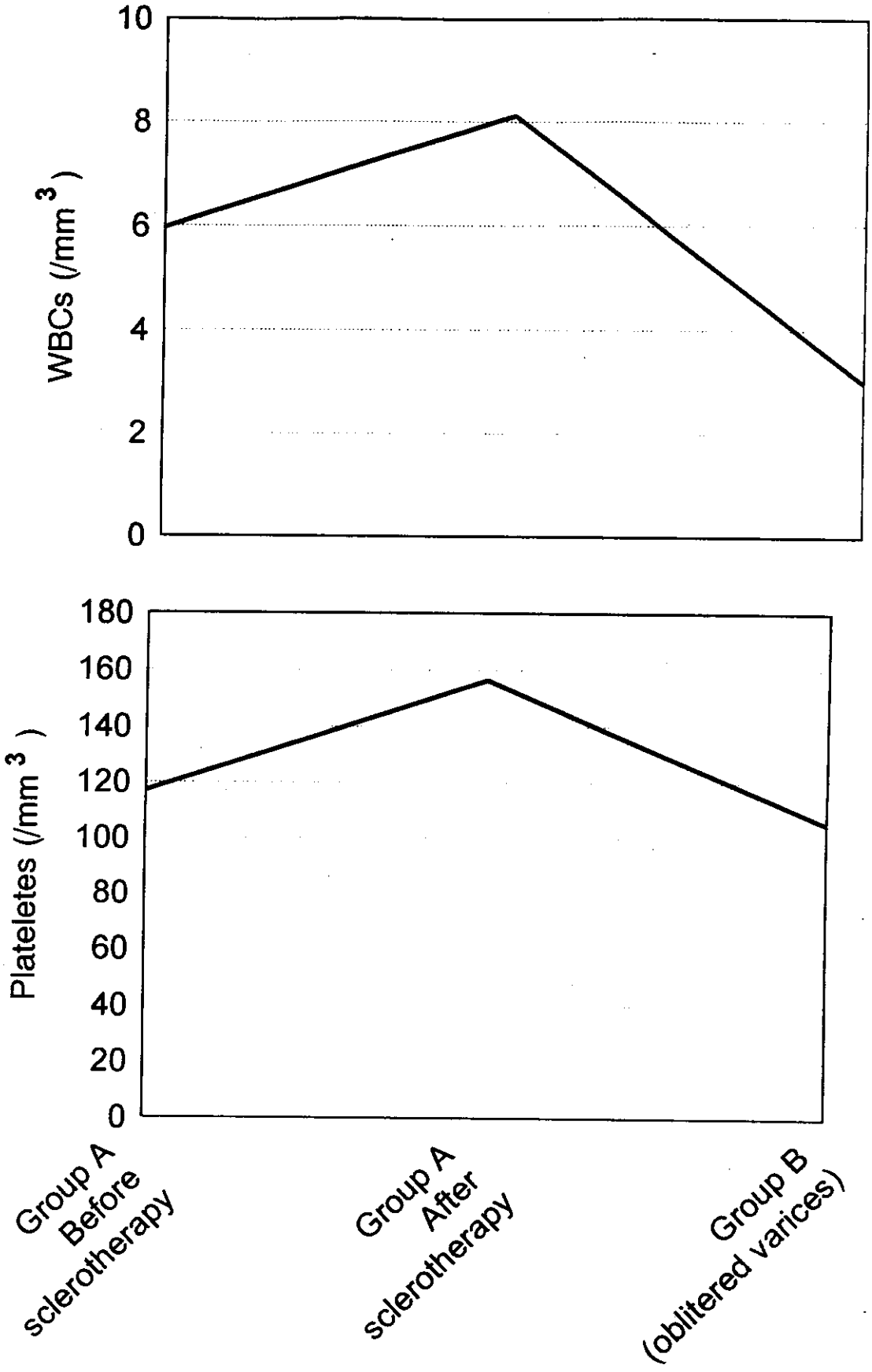

Fig. (13):Comparison between WBC's, platelets in group A, before and after injection sclerotherapy and group B.

DISCUSSION