RESULTS

The age of the fifty subjects included in this study ranged from 20-40 years "mean 27.36".

- The height ranged from 159 to 190 cm "mean 171.70 cm".
- The weight ranged from 57 to 90 kgm "mean 71.2 kg".

All of them were males with systolic blood pressure ranged from 120 to 150 mmHg "mean 127.8 mmHg".

Table (1): General characteristics

Item	Mean	SD	Ranges	
			Minimum	Maximum
Age "years"	27.36	5.92	20	40
Height "cm"	171.70	7.69	159	190
Weight "kg"	71.2	7.83	57	90
Heart rate "beats/min"	88.2	10.64	69	109
Blood pressure "mmHg"				
Systolic BP	127.8	7.56	120	150
Diastolic BP	84.2	4.94	80	90

Table (2): Echo-Doppler data.

Item	Mean	SD	Ranges	
			Minimum	Maximum
Left ventricular mass "gm"	158.42	37.32	86	243
Left ventricular internal diameter	4.71	0.52	3.60	6.22
Septal wall thickness	1.01	0.16	0.707	1.34
Posterior wall thickness	0.99	0.20	0.396	1.41
Left ventricular peak inflow velocities				
Early diastolic "E, cm/S"	75.15	12.82	44.6	101
Late diastolic "A, cm/S"	47.42	8.72	27.3	67.0
A/E ratio	0.65	0.12	0.42	0.89

Table (5): Relation between LV mass and age, height and weight.

	Test of significance	
	r	P
LV mass versus age	0.2	>0.05
LV mass versus weight	0.38	<0.01
LV mass versus height	0.37	<0.01

There is significant +ve correlation between LV mass and weight and height of the subjects but no significant correlation between LV mass and age.

Table (6): Relation between LV mass and rest and exercise systolic blood pressure.

	Test of significance	
	r	P
LV mass versus Rest systolic BP	0.85	<0.001
LV mass versus First stage exercise systolic BP	054	<0.001
LV mass versus Second stage exercise systolic BP	0.43	<0.005
LV mass versus Third stage exercise systolic BP	0.41	<0.005
LV mass versus Fourth stage exercise systolic BP	0.34	< 0.05

There is significant +ve correlation between LV mass and systolic blood pressure measured at rest and systolic blood pressure at various stages of exercise.

The relation is highly significant at rest and declines with exercise until it reaches its lowest level at maximal stage of exercise but is still significant.

Table (7): Relation between A/E ratio and rest and exercise systolic blood pressure.

	Test of significance	
	r	P
A/E ratio versus Rest systolic blood pressure	0.47	<0.005
A/E ratio versus First stage exercise systolic BP	0.35	<0.05
A/E ratio versus Second stage exercise systolic BP	0.20	>0.05
A/E ratio versus Third stage exercise systolic BP	0.22	>0.05
A/E ratio versus Fourth stage exercise systolic BP	0.09	>0.05

There is significant +ve correlation between A/E ratio and systolic blood pressure measured at rest and at first stage of exercise but no correlation to systolic blood pressure measured during the remaining stages of exercise.

Table (8): Relation between LV mass and heart rate at rest and during exercise.

	Test of significance	
	r	P
LV mass versus Resting heart rate	0.43	<0.005
LV mass versus Maximum exercise heart rate	0.14	>0.05

There is significant +ve correlation between LV mass and resting heart rate and no significant correlation between maximum exercise heart rate and LV mass.

Table (9): Relation between A/E ratio and age, height and weight.

	Test of significance	
	r	P
A/E ratio versus age	0.07	>0.05
A/E ratio versus weight	0.41	<0.005
A/E ratio versus height	0.16	>0.05

There is significant +ve correlation between A/E ratio and weight but no significant correlation between age and height, and A/E ratio.

Table (10): Relation between A/E ratio and heart rate at rest and during exercise.

	Test of significance	
	r	P
A/E ratio versus Rest heart rate	0.32	<0.05
A/E ratio versus Exercise heart rate	0.14	>0.05

There is significant +ve correlation between A/E ratio and resting heart rate and no significant correlation between maximum exercise heart rate and A/E ratio.

Table (11): Comparison between normal and exaggerated exercise systolic blood pressure.

Group / Variable	Blood pressure response		t	p
	Normal	Exaggerated		
	X ± SD	X ± SD		
Age	27.13 ± 6.08	28.18 ± 5.81	0.92	>0.05
Height	171.36 ± 7.4	172.91 ± 8.95	0.21	> 0.05
Weight	70.10 ± 7.03	75.09 ± 9.88	0.22	> 0.05
Heart rate	58.28 ± 10.84	87.91 ± 10.96	0.67	> 0.05
SWT	0.99 ± 0.15	1.02 ± 0.24	0.92	> 0.05
PWT	1.0 ± 0.19	0.98 ± 0.24	0.18	> 0.05
LV internal dimension	4.68 ± 0.56	4.84 ± 0.45	0.87	> 0.05
LV mass	156.46 ± 35.72	178.91 ± 44.25	1.04	> 0.05
A/E ratio	0.64 ± 0.12	0.69 ± 0.14	0.56	> 0.05

11 with exaggerated BP

39 with normal BP response to exercise

There was no significant differences between both groups. Exaggerated exercise systolic blood pressure response defined as a peak exercise systolic blood pressure at least 190 mmHg. Normal exercise systolic blood pressure response, defined as a peak exercise systolic blood pressure below 190 mmHg.

Table (12): Relation between non-exaggerated exercise systolic blood pressure and each variables.

Variable	Mean	S.D.	Test of significance	
			r	P
A/E ratio	0.64	0.12	0.08	> 0.05
LV mass	165.46	35.72	0.44	< 0.05
Age	27.13	6.08	0.07	> 0.05
Heart rate	58.28	10.84	0.05	> 0.05
Height	171.36	7.4	0.12	> 0.05
Weight	70.10	7.03	0.05	> 0.05
Septal wall thickness	0.99	0.15	0.24	> 0.05
Post wall thickness	1.0	0.19	0.05	> 0.05
LV internal dimension	4.68	0.56	0.25	> 0.05

There is only +ve correlation between normal exercise systolic blood pressure and LV mass.

Table (13): Relations between exaggerated exercise systolic blood pressure and variables affect LV mass.

Variable	Mean	S.D.	Test of significance	
			r	P
A/E ratio	0.69	0.14	0.29	> 0.05
LV mass	178.91	44.25	0.32	> 0.05
Age	28.18	5.81	0.22	> 0.05
Heart rate	87.91	10.96	0.56	> 0.05
Height	172.91	8.95	0.1	> 0.05
Weight	75.09	9.88	0.44	> 0.05
SWT	1.02	0.24	0.02	> 0.05
PWT	0.98	0.24	0.11	> 0.05
LV internal dimension	4.84	0.45	0.68	< 0.05

There is no correlation between exaggerated exercise systolic blood pressure and all variables.

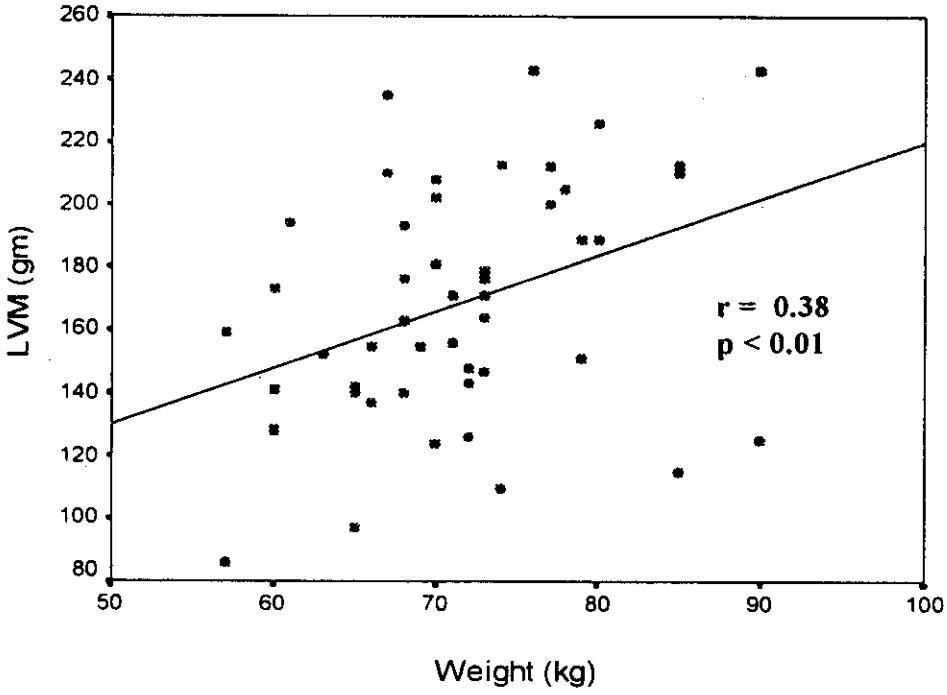

Fig. (3): Correlation between left ventricular mass and weight

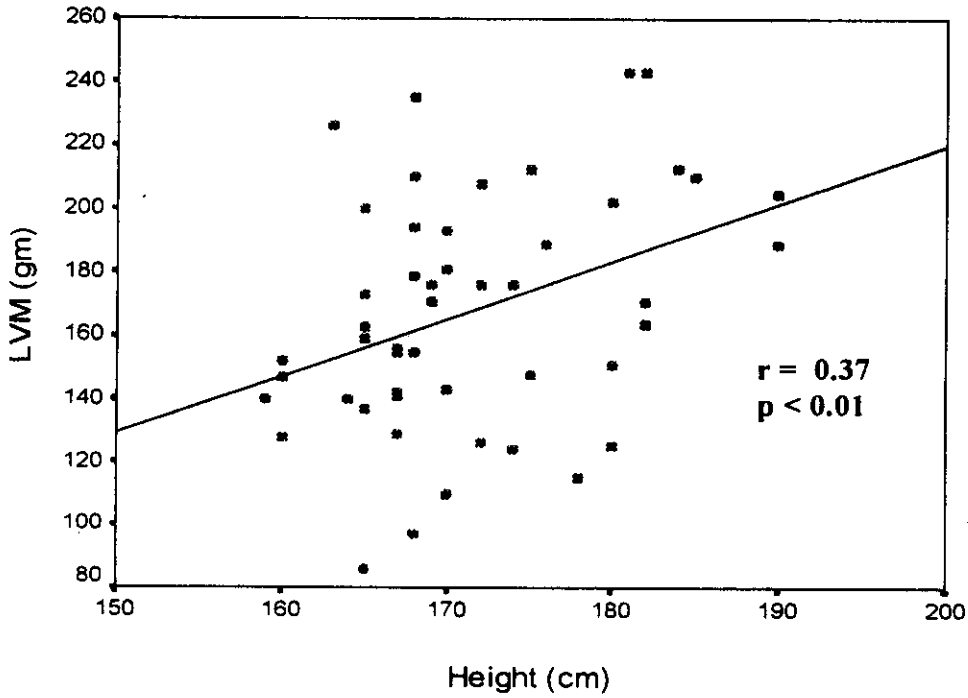

Fig. (4): Correlation between left ventricular mass and height

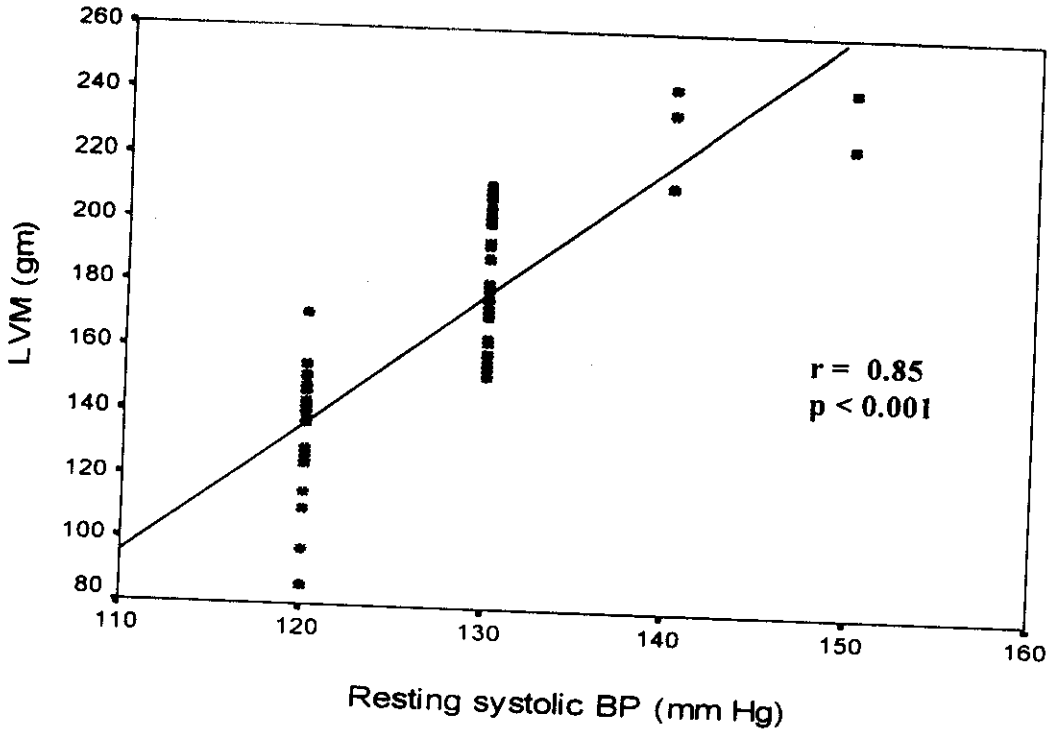

Fig. (5): Correlation between left ventricular mass and resting systolic blood pressure

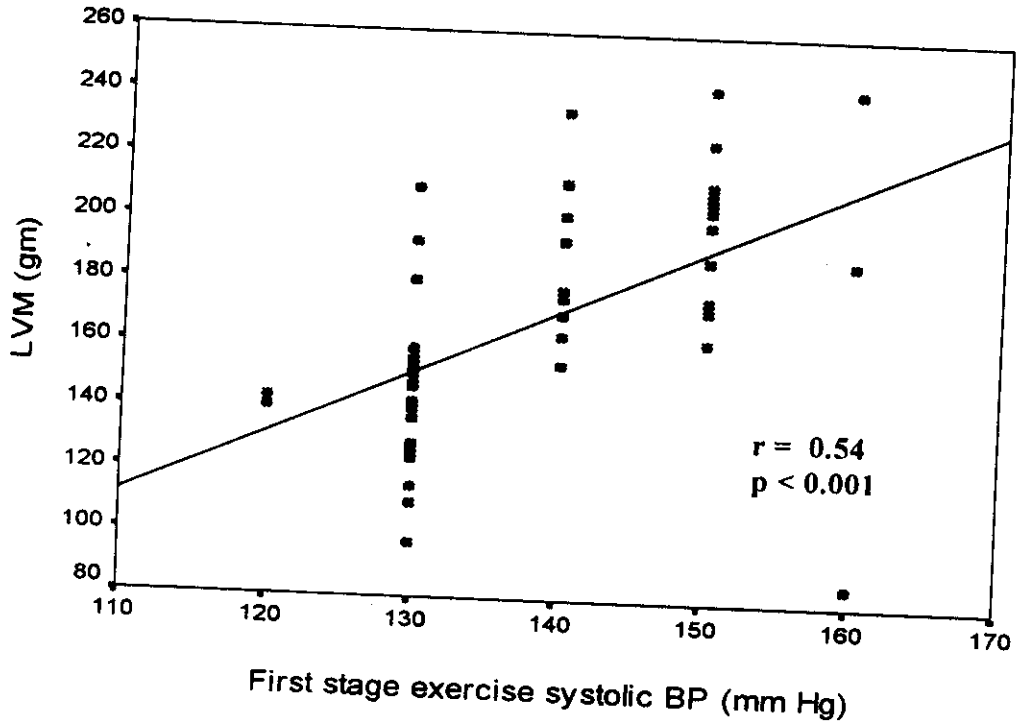

Fig. (6): Correlation between left ventricular mass and first stage exercise systolic blood pressure

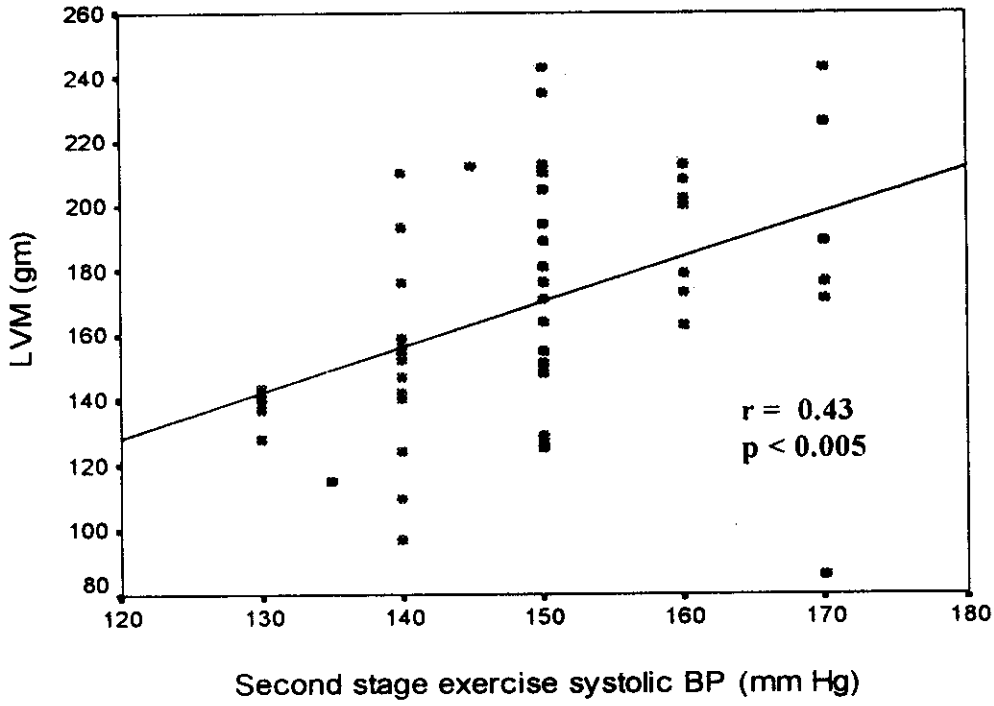

Fig. (7): Correlation between left ventricular mass and second stage exercise systolic blood pressure

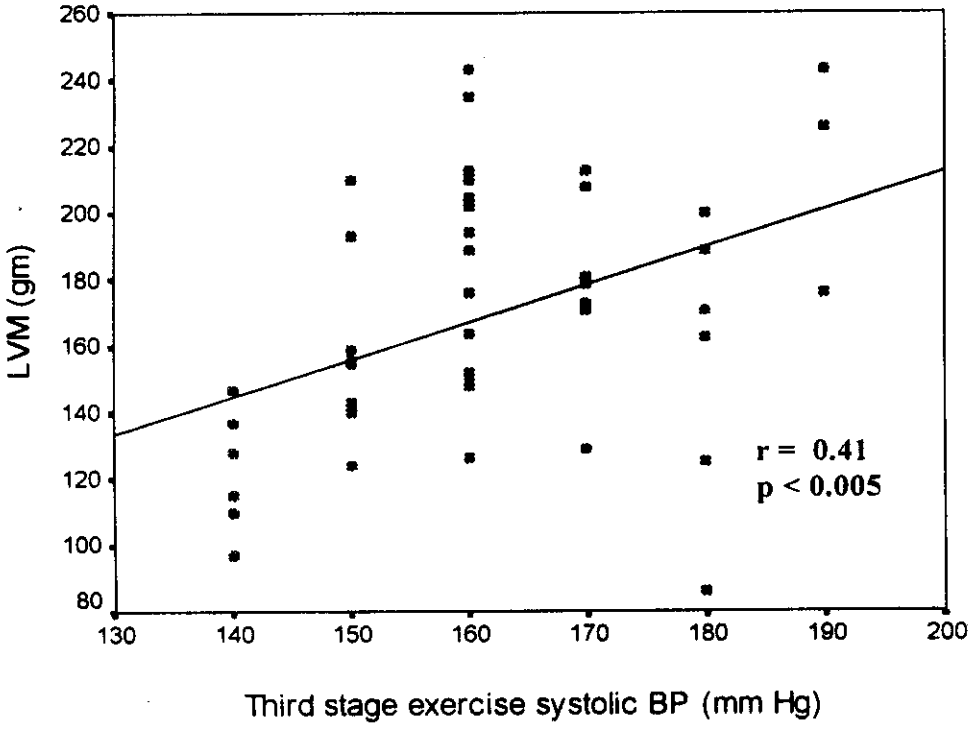

Fig. (8): Correlation between left ventricular mass and third stage exercise systolic blood pressure

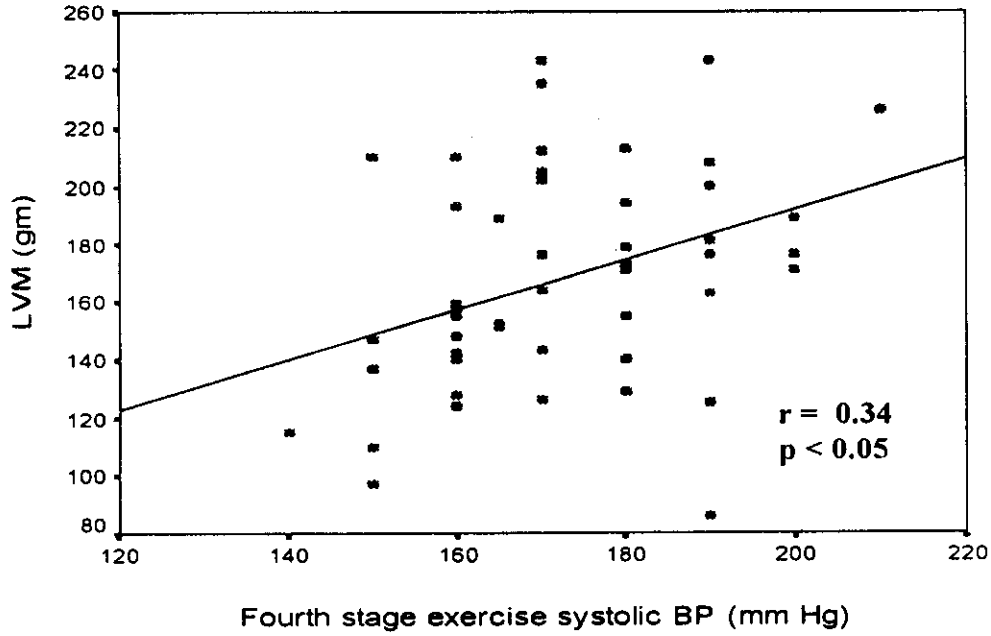

Fig. (9): Correlation between left ventricular mass and fourth stage exercise systolic blood pressure

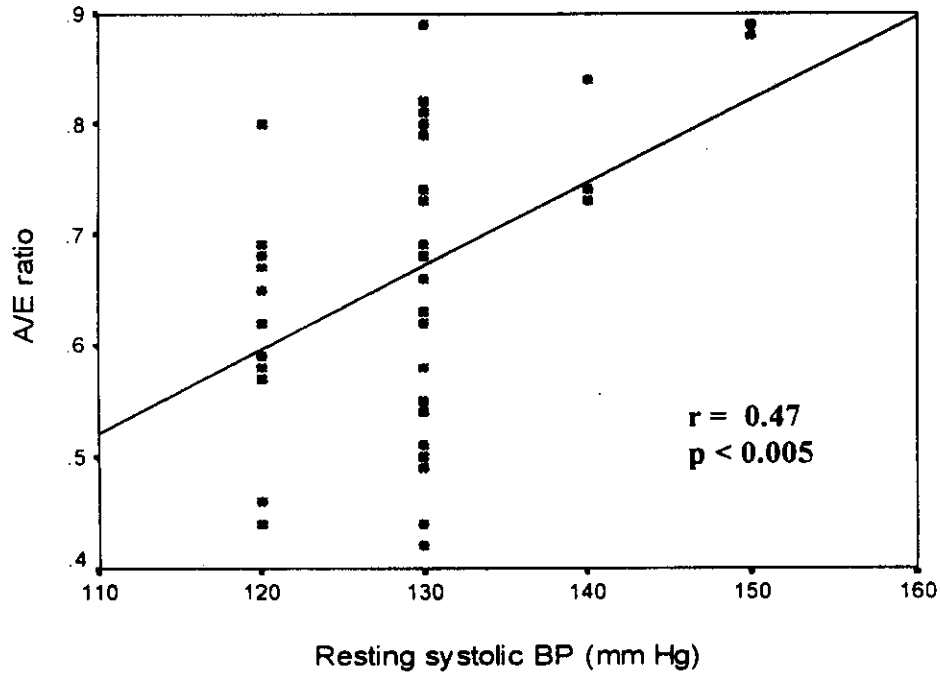

Fig. (10): Correlation between A/E ratio and resting systolic blood pressure

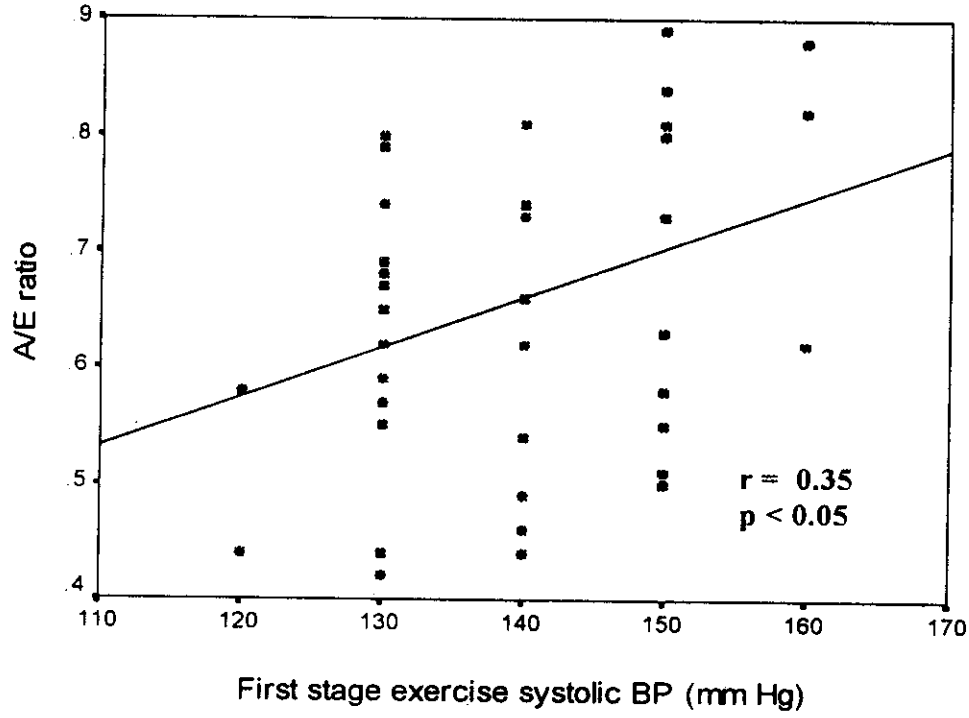

Fig. (11): Correlation between A/E ratio and first stage exercise systolic blood pressure

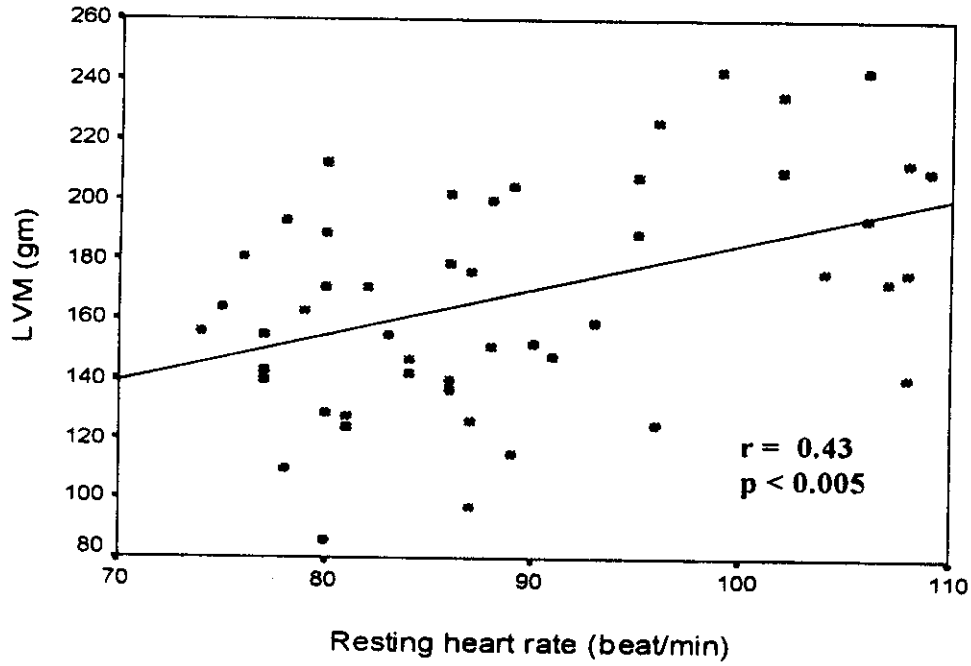

Fig. (12): Correlation between left ventricular mass and resting heart rate

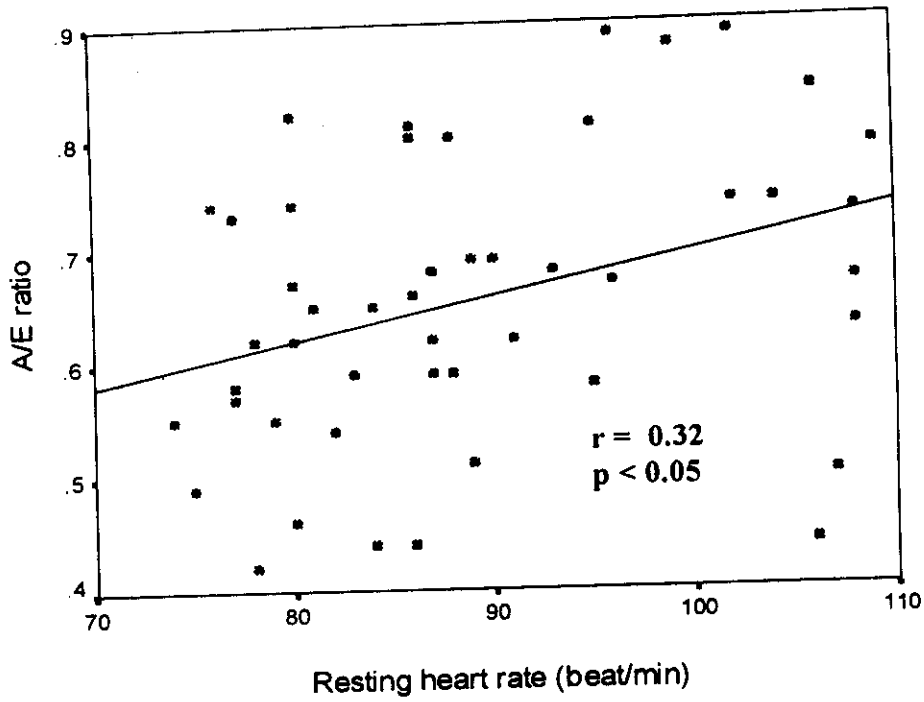

Fig. (13): Correlation between A/E ratio and resting heart rate

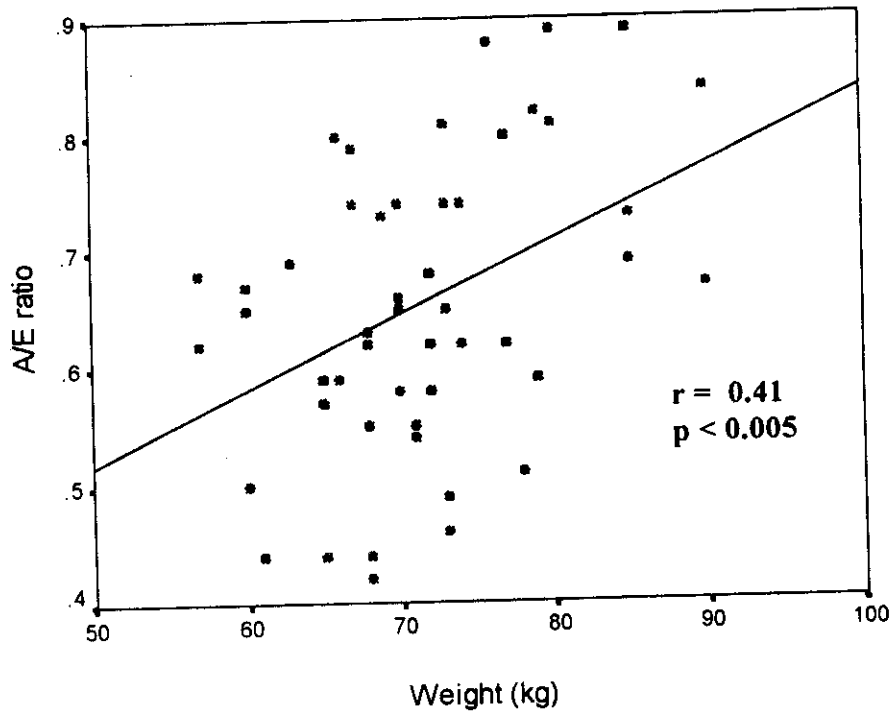

Fig. (14): Correlation between A/E ratio and weight