

## SUMMARY

This work was designed to study whether left ventricular mass and the mitral inflow velocity pattern are more closely related to blood pressure measured during dynamic exercise than to blood pressure measured at rest.

This work included 50 healthy subjects aged 20-40 years with normal blood pressure or borderline elevated blood pressure. They were all males. They were chosen randomly at Benha University hospital during the period from February 1998 to September 1999.

For all persons included in this study, the following were done: full history taking, thorough clinical examination, 12-lead resting E.C.G., laboratory examination, echocardiography to measure left ventricular mass and peak mitral inflow velocity, and treadmill symptom limited Bruce protocol to measure exercise systolic blood pressure at different stages.

The left ventricular mass had positive significant correlation with systolic blood pressure measured at rest and at various stages of exercise (I, II, III, IV). The relation is highly significant at rest and decline with exercise until reaching its lowest level at maximal stage of exercise, but was still significant. Left ventricular mass was also significantly positively correlated to resting heart rate, body weight and height but was not related to exercise heart rate and age.

The ratio of late to early mitral inflow velocity "A/E ratio" was significantly positively correlated to systolic blood pressure measured at rest and at first stage of exercise but was not related to systolic blood pressure measured during the remaining stages of exercise. The A/E ratio was significantly +ve correlated to resting heart rate and to body weight, but was not related to exercise heart rate, age or height.

## **CONCLUSIONS**

In conclusion, the left ventricular mass and mitral inflow velocity were related to systolic blood pressure measured during low grade dynamic exercise. There are factors other than exercise systolic blood pressure that affect left ventricular mass and mitral inflow velocity include resting blood pressure, age, resting heart rate, body weight and height which must be assessed. Thus, systolic blood pressure at various levels of dynamic exercise does not contribute independently to left ventricular mass and mitral inflow pattern in young men with normal or borderline elevated blood pressure.