SUMMARY

This study included 70 patients presented to Benha University Hospital Catheterization Laboratory between April 1999, and September 2000.

Patients were selected and classified on angiographic findings into two groups:

Group A: 50 patients with significant LAD lesion.

Group B: 20 patients with normal angiograms

Group A was divided into 2 subgroups:

Subgroup (1): Patients without total LAD occlusion

Subgroup (2): Patients with total LAD occlusion

All patients were subjected to the following:

History, clinical examination and ECG

Routine laboratory investigations

Echocardiography

Coronary angiography and left ventriculography

Clinically, there was no significant difference between the two groups as regard age, sex, hypertension, diabetes, smoking habit, heart rate, systolic and diastolic blood pressure, hemoglobin and creatinine. Also, there was no significant difference between the two subgroups, clinically, except for heart rate and history of old myocardial

infarction, which were higher in subgroup (2).

Coronary angiography was done for all patients utilizing the retrograde percutaneous transfemoral technique (Judkin's technique) and interpretation of coronary angiograms followed two lines:

1. Visual interpretation for normal angiograms, total occlusion, site of lesion and grading of coronary collaterals.

2. Computerized auto-interpretation for percent diameter stenosis, length of the lesion and coronary blood flow velocity, which was assessed by the corrected TIMI frame count method.

Left ventriculography was performed using a pigtail catheter with recording of ventricular end diastolic pressure. The computer determined the ejection fraction and segmental myocardial function was automatically given using the Slager method.

The results of the present study showed that ejection fraction and regional systolic function were significantly higher in group B and LVEDP was significantly higher in group A. History of old myocardial infarction had a significant effect on ejection fraction, regional function and LVEDP.

Effects of coronary angiographic findings on ventricular function:

1. Effect of lesion site:

In group A, ejection fraction and the function of the anterobasal area was significantly lower in proximal lesions.

The site of lesion did not affect ventricular function in subgroup (1), while there was a significant effect on ejection fraction and anterobasal area in subgroup (2).

2. Effect of % diameter stenosis:

In group A, total occlusion had a significant effect on ejection fraction, regional function and LVEDP. There was a significant negative correlation between % diameter stenosis and systolic function (global and regional) and a significant correlation with LVEDP. In subgroup (1) a significant negative correlation between % diameter stenosis and anterolateral area and a significant correlation between % diameter stenosis and LVEDP was present in subgroup (1).

3. Effect of CTFC:

Higher CTFC in subgroup (1) had a significant effect on ejection fraction, systolic regional function and LVEDP. A significant negative correlation between CTFC and global & regional systolic function and a significant correlation between CTFC & LVEDP was present.

4. Effect of coronary collaterals:

Coronary collaterals had no significant effect on ventricular function in grop A. All the parameters of ventricular function were worse in patients with well developed collaterals in subgroup (1) and significantly better in patients with well developed collaterals in subgroup (2).

5. Effect of lesion length:

Lesion length had no effect on ventricular function in subgroup (1).

So, in patients with significant LAD disease, a history of myocardial infarction, total occlusion and the site of lesion had a significant effect on ventricular function with no additional effect of visible collateras. In patients with total occlusion, both the site of lesion and coronary collaterals affect the ventricular function, while in patients without total occlusion, the major factor affecting the ventricular function was the antegrade flow. On the basis of these results, we suggest that a patent artery with normal flow should be the goal in the management of patients with CAD.