Coronary arteriography in acute myocardial infarction

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Mortality in acute myocardial infarction has decreased in the past few years. According to several reports, it now ranges from 13% to 25% in patients admitted to coronary care units.[1, 2] Such reduction is primarily due to the wide use of hemodynamic monitoring,[1] the prevention and effective therapy of life-threatening arrhythmias,[3] the use of vasodilators to overcome pump failure,[4] the clinical application of assisted circulatory devices,[5] and the judicious use of surgical intervention.[6] Recent experiences also suggest that the knowledge of coronary anatomy during acute myocardial infarctions may be an important asset in making appropriate therapeutic decisions.[5, 7]

Usually coronary arteriography is indicated in acute myocardial infarction when there is refractory pump failure or persistent chest pain. However, at our institution, we have incorporated coronary angiography as a routine test for all patients with acute myocardial infarction before discharge from the hospital.

In 315 of 410 patients admitted to the Instituto Dante Pazzanese de Cardiologia, São Paulo, for treatment of acute myocardial infarction, cine coronary arteriography and left ventriculography were performed an average of 12 days (range, 10 hours to 25 days) after onset of symptoms without any

major technical complications. Contraindications for coronary angiography during acute infarction included renal failure, old age (75 years or older), cerebral vascular accident or refusal of the patient.

Normal coronary arteries were observed in four patients (1.3%). Forty-seven percent had one-vessel disease and 54% had multivessel disease. In 65% of patients, the artery corresponding to the area of infarction was totally occluded, and in 36%, only a significant stenosis with a good distal runoff was present.

An old myocardial infarction was the only finding associated with multivessel involvement.

Cardiac surgery was performed in 72 patients (23%) an average of 15 days (range, 1 to 30 days) following admission to the hospital. The following surgical procedures were carried out: saphenous vein bypass in 58 patients, left ventricular aneurysmectomy in ten patients, mitral valve replacement in four patients.

Among patients who underwent only saphenous vein bypass grafting, 55 had postmyocardial infarction angina and had a low mortality (1.8%), similar, therefore, to the mortality associated with elective bypass surgery. In these 58 patients, the following left ventricular segments were revascularized: infarcted segment in 79% of the cases, noninfarcted area in 61%, and the area of an old infarction in 18%. Revascularization to the infarcted segment was performed when a partial or total occlusion was associated with a well-developed collateral circulation.

Aneurysmectomy was performed in ten patients; four of whom were in advanced cardiogenic shock and all died. Mitral valve replacement was performed in four patients; two of these were also in cardiogenic shock and one died.

We believe that coronary angiography can be safely performed early in the course of acute myocardial infarction. Its routine use in all patients before hospital discharge defines the coronary anatomy, the functional state of the left ventricle, allows a better prognostic evaluation, and establishes selective criteria for early revascularization.

References

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