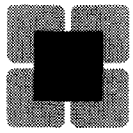

WILLIAM S. WILKE, MD, EDITOR

AGGRESSIVE INTERVENTION IN MI REDUCES MORTALITY

Current treatment of the acute phase of myocardial infarction (MI) is aggressive intervention aimed at recanalization of the artery, to salvage myocardium and improve survival. Both thrombolytic therapy and percutaneous transluminal coronary angioplasty (PTCA) have demonstrated efficacy in the treatment of acute MI.

THROMBOLYTIC THERAPY

The rationale for thrombolytic therapy with streptokinase, urokinase, or tissue plasminogen activator (tPA) is related to the pathophysiologic mechanism of acute MI. The formation of a new thrombus, superimposed on a pre-existing atheroma, is triggered by the cascade of events that leads to occlusion of the vessel with myocardial anoxia and infarction. In every case, there is a "window of time" during which the myocardium is viable and can be salvaged with reperfusion. To be effective, thrombolytic therapy must be administered during this period—within 6 to 8 hours of the onset of symptoms. The amount of myocardium with reversible damage diminishes rapidly, so thrombolytic therapy is a race against time.

Mortality during the acute phase of MI drops by nearly half when streptokinase is started within 2 hours of the onset of acute MI; when streptokinase therapy is delayed until 9 to 12 hours after onset, the mortality rate is comparable to that observed with conventional therapy. The addition of aspirin to the streptokinase regimen during the acute treatment has been shown to further reduce mortality.

PTCA

Thrombolytic therapy has limitations, including bleeding complications. Furthermore, there is a 15% to 35% likelihood of reocclusion, particularly in the presence of a large atheroma and significant narrowing.

TABLE
CLEVELAND CLINIC FOUNDATION APPROACH TO ACUTE MI

1. Thrombolytic therapy administered in the emergency room within 6 to 8 hours of onset of MI.
2. Transfer as soon as possible for cardiac catheterization to establish anatomy.
3. PTCA if artery is occluded or if pain continues (occurs in 45% of patients).
4. Elective PTCA or coronary artery bypass surgery after 7 days, if indicated by anatomy.

The reocclusion rate is significantly lower when PTCA is performed after thrombolytic therapy. PTCA prevents rethrombosis by reducing the size of the atheroma. Ongoing clinical trials, which include the Cleveland Clinic Foundation, have achieved greater than 95% successful recanalization with PTCA.

Bleeding complications are more likely among patients who undergo PTCA in the acute phase of treatment than among those who undergo the procedure electively. Given this limitation, the current recommendation is to administer thrombolysis within 6 to 8 hours of the onset of acute MI. If the patient's condition remains stable, then elective catheterization and PTCA are performed after one week. If pain continues or the occlusion remains despite thrombolytic therapy, PTCA may be indicated during the acute phase.

PTCA has proved to be particularly beneficial in the treatment of cardiogenic shock, which has a mortality rate of 90% to 95% with conventional therapy. Treatment with the intra-aortic balloon and dopamine reduces mortality to 70% to 75%. Acute intervention with PTCA has reduced the mortality rate to 30%.

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HIV MAY BE A CAUSE OF MUSCULOSKELETAL SYNDROMES

Musculoskeletal and connective tissue disease syndromes are developing in increasing numbers of patients