The Obsession With Primary Angioplasty

To the Editor:

Grines et al once more reiterate their enthusiasm for primary percutaneous transluminal coronary angioplasty (PTCA) in ST-segment elevation myocardial infarction. We agree that this maneuver is extremely attractive for most cardiologists, yet we believe that data should be examined for what they actually show.

The Keeley et al review shows only a trend in mortality reduction when primary PTCA is compared with accelerated recombinant tissue-type plasminogen activator (rt-PA), if the “Should We Emergently Revascularize Occluded Coronaries for Cardiogenic Shock” (SHOCK) trial is excluded (5.5% versus 6.7%; odds ratio 0.81; 95% CI 0.64 to 1.03; \( P = 0.081 \)). The absolute benefit is 1.2% (the number needed to treat is 82; 95% CI 40 to infinite). In the SHOCK trial, thrombolysis was given in 63% of medical patients and 49% of those patients treated aggressively. So this is a trial of some thrombolysis against some thrombolysis plus revascularization and should be definitely omitted in the analysis. Including in the “fibrin-specific” group studies in which rt-PA was infused in 3 hours and duteplase in 4 hours is unfair to modern thrombolysis. The correct comparison is with accelerated rt-PA (5012 of the original 7739 patients).

Reinfarction in the first 24 hours after thrombolysis is diagnosed mainly by the recurrence of ST elevation with chest pain. Most of these episodes occur during the first hour after thrombolysis, a time at which approximately the same rate of patients undergoing primary PTCA show signs of no reflow, side-branch occlusion, dissection, spasm, and distal embolization in the catheterization laboratory. Thus, it appears as if many reinfarctions counted after thrombolysis were hidden in the catheterization laboratory in the primary PTCA group. Moreover, there are no data showing that preventing such reinfarctions will ultimately improve short-term and long-term prognosis.

The 1% absolute stroke reduction with primary PTCA, compared with thrombolysis, results in 3 fewer patients per 1000 treated surviving the index infarction with disabling stroke. This advantage is at least partially counterbalanced by an excess in major hemorrhage in the primary PTCA group (20 more major bleeds per 1000 treated with primary PTCA).

Thus, based on the available evidence, clinical advantages of primary PTCA, if any, are apparently small. They should be confirmed in a large mortality trial comparing primary PTCA with the quick infusion of a modern lytic drug, possibly including its prehospital administration, a setting in which the absolute benefit is a 1.6% mortality reduction, as compared with in-hospital thrombolysis.

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