

Non-Inferiority of Thrombolysis Comparing Primary PCI in STEMI Within 3 Hours from Symptom Onset

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Background: Randomized trials and meta-analyses have shown superiority of primary PCI to in-hospital thrombolysis as reperfusion therapy in STEMI patients arriving within 6-12 hours after symptom onset.

Objective: To compare in-hospital clinical outcome of STEMI patients admitted to the CCU within 3 hours from symptom onset and treated by primary PCI to that of patients treated by thrombolysis.

Methods: We retrospectively evaluated 148 hemodynamically stable STEMI patients that were admitted during 2007-2011 within 3 hours of symptom onset. All thrombolysis patients underwent coronary angiography at 3-36 hours after hospital admission, including rescue PCI.

Results: Primary PCI was performed in 72 patients and streptokinase was administered to 76 patients. The 2 groups were comparable with regard to age, sex, atherosclerosis risk factors, anterior wall MI [44.7% thrombolysis vs 40.3% primary PCI (p=NS)] and time from symptom onset to door [89 vs. 92 minutes, respectively (p=NS)]. Door to needle time was shorter than door to balloon time [16 vs. 52 minutes (p<0.01)]. Seventeen (22%) patients treated by thrombolysis did not reperfuse clinically and underwent rescue PCI [5 (6%) patients had TIMI flow=0, and 2(3%) had TIMI flow=1]. We found no difference in outcome regarding bleeding, vascular complications, CPK levels, LVEF, hospitalization length, and in-hospital death.

Conclusion: Thrombolysis therapy, given early in stable STEMI patients admitted within 3 hours of symptoms onset, seems to be an acceptable and non-inferior to primary PCI as reperfusion strategy. However, larger randomized clinical trials are needed to establish this therapeutic approach.