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Effects of Aspiration Thrombectomy on Coronary Artery Flow, Myocardial Perfusion and Left Ventricular Function after Primary Coronary Angioplasyty

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Primary per-coetaneous coronary intervention (PPCI) is the treatment of choice in patients with acute ST elevation myocardial infarction (STEMI). According to the results of the TAPAS study, coronary aspiration thrombectomy (ASP) preceding PPCI improved outcome in patients with STEMI and thus became the standard in management of patients with acute STEMI. However, recent studies did not reproduce the favorable results of the TAPAS study. Aim: evaluate the effects of ASP preceding PPCI on coronary artery flow, myocardial perfusion and left ventricular systolic function in patients with acute STEMI. Methods: 43 patients with acute anterior STEMI treated by ASP were compared to 36 patients without ASP. TIMI and myocardial blush grades (MBG) before and after PPCI were evaluated. Transthoracic Doppler echocardiography and sampling of blood velocity in the left anterior descending coronary artery (LAD) were evaluated at admission and at discharge. Results: TIMI grade before PPCI in subjects with ASP 0.11±0.44 was lower than in those without 0.86±0.19, p0.003, however, MBG was similar. After PPCI, TIMI grade and MBG improved and was similar in both groups. Early and late after PPCI , in patients without ASP, peak diastolic LAD velocities, 42.2±11.4 and 46.3±16.4 cm/sec were higher than in those without, 34±18.2cm/se and 32.3±9.6cm/sec, respectively, p0.003. Early systolic LAD velocity in patients with ASP 15.4±9.9cm/sec was higher than in those without 7.7±2.6c/sec, p0.02, however late after PPCI systolic velocities were similar. LAD time velocity integrals showed similar differences between the groups. Minimal LAD diastolic deceleration time in patients with ASP 517.9±286.6msec, was longer than in those without 294.4±390.6msec, p0.02. Left ventricular ejection fractions (LVEF) in both groups were similar at presentation and discharge. Conclusions: Coronary artery aspiration thrombectomy was associated with higher LAD diastolic and systolic velocities and integrals; longer minimal LAD diastolic deceleration time; however LVEF was not affected.