Moderated Posters

480
Analysis of coronary perfusion with myocardial contrast echocardiography. Implications and relationship with angiography and MRI.

V. Bertomeu 1, V. Bodí 1, J. Sanchis 1, M.P. López-Lereu 2, A. Losada 1, A. Liácer 1, M. Pellicer 1, F.J. Chorro 1. 1Hospital Clínico Universitari, Servei de Cardiología, Valencia, Spain; 2Hospital Clinic i Universitari, Magnetic Resonance Imaging, Valencia, Spain

Objectives: We show our initial experience with myocardial echocardiography with intracoronary injection of contrast (MCE).

Method: Thirty patients with a first ST-elevation myocardial infarction (MI) and a patent infarct-related artery (stenosis in 22 cases) were studied at first week (1w) post-MI. Mean perfusion score of the infarcted area was analysed with MCE (0=no reflow, 5=patchy, 1=normal), TIMI-Blush grades (angiography) and magnetic resonance imaging (MRI). Normal perfusion MCE >0.75. End-diastolic volume (EDV) and ejection fraction (EF) were calculated with MRI. At sixth month (6m) all the explorations were repeated in the first 17 patients (all of them with an open artery).

Results: MCE were done without complications (6±2 minutes per study). At 1w normal perfusion was observed in 74% of patients with TIMI 3 and in 0% of TIMI 2. In the 27 patients with TIMI 3, normal perfusion was present in 82% of cases with Blush 2-3 and in 40% of Blush 0-1; in 90% of cases with MRI-perfusion=1 and in 57% of MRI-perfusion<1. MCE was the best perfusion index in predicting EDV (r=-0.69 p<0.002) and EF (r=-0.72 p<0.001) at 6m. MCE improved from 1w to 6m (.73±.34 vs. .82±.32 p<0.07). MCE at 6m was the best predictor of late remodeling (increase of VTD from 1w to 6m: r=-0.68 p<0.003).

Conclusions: MCE is a feasible, not time-consuming technique and it has not secondary effects. MCE was the most reliable perfusion index to predict late remodeling and systolic function. To achieve a normal perfusion TIMI 3 is indispensable (but it is not a guarantee). In TIMI 3 cases, a normal Blush or a normal MRI perfusion study suggests a good reperfusion but an abnormal result does not exclude normal perfusion.

481
MCE is superior to DSE in predicting myocardial recovery after revascularization in patients with occluded left anterior descending artery.

C.I. Aggelis 1, M.S. Bonous 2, N. Georgiadis 1, C.S. Theocharis 2, G. Roussakis 1, C. Chatzos 1, S. Brili 1, C. Pilavis 1, C. Stefanadis 1. 1Hippokration Hospital, Cardiology, Athens, Greece; 2Polyclinic, Cardiology, Athens, Greece

We assessed the hypothesis that myocardial contrast echocardiography (MCE) and dobutamine stress echocardiography (DSE) have the ability to predict recovery of dysfunctional myocardium after revascularization in patients with left anterior descending (LAD) coronary artery disease.

Methods: 41 patients (mean age 62±4 y) with LAD disease, 23 with severe stenosis >70% (group A) and 18 with occluded LAD (group B) and regional dysfunction underwent coronary angiography and MCE and DSE 2-5 days before revascularization. All patients had multivessel disease. MCE was performed using continuous SonoVue (Bracco) intravenous infusion (120-180 ml/h) with Harmonic Power Doppler Imaging and incremental triggering (1:1 to 1:8). Contrast score index (3 grade scale) for the LAD supplied area was calculated for perfusion analysis. All patients underwent coronary bypass grafting and rest echocardiography was repeated 2-3 months after revascularization.

Results: There were no differences in age, ejection fraction at rest, and wall motion score index at rest between the two groups. Of 243 dysfunctional segments in the LAD territory undergoing revascularization 109 (62 in group A and 47 in group B) recovered at follow up. In group A, MCE and DSE exhibited similar values of sensitivity, specificity and accuracy (87% vs. 87%, 62% vs. 72%, 73% vs. 79%, respectively), whereas in group B MCE showed higher sensitivity and negative predictive value than DSE (81% vs. 57%, p<0.001 and 80% vs. 68%, p<0.05, respectively) in predicting segmental myocardial recovery. These differences in sensitivity and negative predictive value between MCE and DSE were more pronounced in akinetic segments of group B (75% vs. 35%, p<0.001 and 75% vs. 56%, p<0.05). Significant correlation was observed between the regional contrast score index and both the follow up regional wall motion score index (r=0.65 for group A and r=0.60 for group B) and the follow up ejection fraction change (r=0.64 for group A and r=0.60 for group B).

In conclusion, triggered MCE demonstrates higher sensitivity and negative predictive value in predicting recovery of dysfunctional myocardium supplied by totally occluded LAD after revascularization, compared with DSE.