

perform inflation in proximal part of LAD (POBA) (target prox / mid LAD with a diameter of 2.5–3.0 mm behind DG1). After 60 minutes the balloon was deflated and removed from the LAD. The animal was observed, monitored (if necessary appropriate medication were given). Past 48-hours since POBA the MRI was performed with assessment of LV function and assessment of microvascular obstruction (MVO, microvascular obstruction) with a quantitative estimation of MVO. Similarly in SG the coronary angiography was performed with extended (60 minutes) POBA LAD. After removal of balloon catheter from the LAD, a dry puncture of pericardium (pericardial catheter inserted to pericardial sac) was performed, with subsequent, a 12 hrs procedure of direct hypothermia of heart (saline cooled to 30 °C). 48 hours since POBA, there was MRI evaluation made in CG (MRI CG2) with estimation of LV function and MVO.

Results: Comparison of baseline EF and MVO in CG1 and SG1 showed no significant differences (all $p > 0.05$). MVO was significantly reduced at SG2, and EF was significantly greater in SG2 comparison to the CG2. Similarly, for the EF and MVO significant difference was observed between the SG2 and CG2 ($p < 0.001$).

Conclusion: The use of direct heart hypothermia by METcooler in acute experimental heart ischemia in animal model significantly reduces the extent of left ventricle damage.

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P5557 | BEDSIDE

Long term follow-up of the trial of routine angioplasty and stenting after fibrinolysis to enhance reperfusion in acute myocardial infarction (transfer AMI)

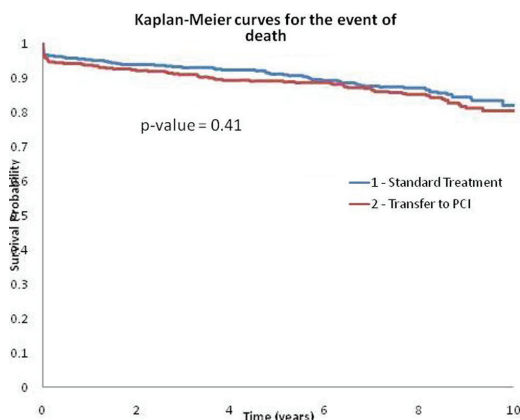
Y. Arbel¹, D.K. Ko², A.Y. Yan³, W.C. Cantor⁴, A.B. Bagai³, M.K. Koh², M.E. Eberg², M.T. Tan³, D.F. Fitchett³, E.C. Cohen², L.M. Morrison³, A.L. Langer⁵, S.M. Mehta⁶, S.G. Goodman³. ¹Tel Aviv Sourasky Medical Center, Tel Aviv, Israel; ²Sunnybrook Health Sciences Centre, Toronto, Canada; ³St. Michael's Hospital, Toronto, Canada; ⁴Southlake Regional Health Centre, Newmarket, Canada; ⁵University of Toronto, Toronto, Canada; ⁶Population Health Research Institute, Hamilton, Canada

Background: The TRANSFER-AMI study demonstrated favourable results of routine early PCI compared to standard therapy at 30 days; the longer term outcomes following an early invasive strategy in fibrinolytic-treated ST elevation myocardial infarction (STEMI) patients are uncertain.

Purpose: The aim of the present study was to evaluate whether the beneficial effects of an early invasive strategy persist during long term (>5 year) follow-up.

Methods: We linked patients randomized to the TRANSFER-AMI from Ontario using the administrative datasets housed at the Institute for Clinical Evaluative Sciences (ICES) in order to assess long term follow-up status, including repeat procedures, hospitalizations, and major cardiovascular events (MACE). Kaplan-Meier curves and Cox regression analysis were used to evaluate the relationship between exposure and long term adverse outcomes. As a sensitivity analysis, inverse probability treatment weights (IPTW) were computed, with propensity scores to control for baseline differences between the exposure groups.

Results: Of 952 patients from Ontario in TRANSFER-AMI, 881 patients had long term follow up and were included in our study. After a mean follow-up of 7.8 years and over 6,795 patient-years, there were no significant differences in death, myocardial infarction (MI), unstable angina, stroke, transient ischemic attack or heart failure admissions (HR 0.91 [95% CI 0.73–1.13]; $p = 0.41$) between those randomized to an early invasive vs. standard treatment strategy.



Conclusions: Despite short-term benefit and safety of an early invasive strategy in STEMI patients receiving fibrinolysis, no differences in outcomes were observed over 7.8 years of

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P5558 | BEDSIDE

Impact of coronary calcification at culprit lesion of STEMI: Optical coherence tomography study

S. Miyauchi, M. Kato, K. Dote, N. Oda, E. Kagawa, Y. Nakano, M. Nagai. Hiroshima City Asa Hospital, Department of Cardiology, Hiroshima, Japan

Introduction: Previous pathological and computed tomography studies have revealed that vulnerable plaques exhibit a high frequency of spotty calcification. Some studies have also indicated that spotty calcification relates to plaque rupture at the culprit site of acute coronary syndrome. However, the effect of coronary calcification on pathophysiology or clinical course of ST-elevation myocardial infarction (STEMI) has not yet been elucidated. Optical coherence tomography (OCT) provides tissue images of coronary artery wall and morphological features of coronary calcification.

Purpose: The purpose of this study was to investigate whether coronary calcification has some impact on culprit lesion morphology and clinical course of STEMI.

Methods: We enrolled 189 consecutive patients with STEMI who received emergency coronary reperfusion therapy and OCT study after thrombectomy. Culprit lesion morphologies were assessed by OCT. Morphological feature of coronary calcification was assessed as maximum thickness, maximum area, maximum angle, and minimum depth from the lumen in axial sections and longitudinal length. We also measured peak level of creatine phosphokinase (CPK), incidence of slow flow phenomenon and target lesion revascularization (TLR).

Results: Mean age was 66.7 years old and 80.0% were males. Calcification was observed at 83 (45.1%) culprit lesions. Culprit lesions with calcification had less incidence of plaque rupture compared to those without calcification ($p = 0.05$). Coronary calcification at culprit lesion with plaque rupture had smaller area ($p = 0.02$), angle ($p < 0.001$), length ($p = 0.01$) and greater depth ($p = 0.04$) in comparison to lesion without plaque rupture. Morphological feature of coronary calcification had no impact on peak level of CPK, incidence of slow flow phenomenon and TLR.

Conclusions: Smaller and deeper calcification is correlated to coronary plaque rupture. Coronary calcification has some role in pathological mechanism of STEMI but has no impact on the clinical course.

P5559 | BEDSIDE

The effect of prehospital P2Y12 receptor inhibition in primary percutaneous coronary intervention for ST-segment elevation myocardial infarction: the ATLANTIC-Elderly analysis

J.-P. Collet¹, M.K. Kerneis¹, G.C. Cayla², J.S. Silvain¹, F.L. Lapostolle³, P.E. Collan¹, L.B. Bolognese⁴, A.V. Van T Hof⁵, C.H. Hamm⁶, A.T. Tsatsaris⁷, J.T. Ten Berg⁸, A. Diallo⁹, E. Vicaut⁹, G. Montalescot¹ on behalf of ACTION Study Group. ¹AP-HP - Hospital Pitié-Salpêtrière, Paris, France; ²University Hospital of Nîmes, Nîmes, France; ³Hospital Avicenne of Bobigny, Emergency, Bobigny, France; ⁴Azienda Ospedaliera, Cardiology, Arezzo, Italy; ⁵Isala Clinics, Zwolle, Netherlands; ⁶Kerckhoff Heart and Thorax Center, Bad Nauheim, Germany; ⁷Astra Zeneca, Cardiovascular, Rueil Malmaison, France; ⁸St Antonius Hospital, Nieuwegein, Netherlands; ⁹Hospital Lariboisière, Biostatistics, Paris, France

Aims To examine whether the main results of the ATLANTIC trial in patients with ST-elevation myocardial infarction (STEMI), randomized to pre- versus in-hospital ticagrelor, differ according to class of age.

Methods and results: Patients were evaluated by class of age (<75 vs. ≥75) for demographics, prior cardiovascular history and risk factors, management, and outcomes. Elderly patients (304/1862) were more likely to be women, diabetic, lean, with a prior history of myocardial infarction and CABG, and with comorbidities ($p < 0.01$ for all). Elderly presented more frequently with acute heart failure, had less frequently thromboaspiration and a stent implanted ($p < 0.01$). They received significantly less frequently GP IIb/IIIa inhibitors before PCI, parenteral anticoagulation after PCI and a maintenance dose of P2Y12 inhibitors. Elderly patients had higher rates of the following endpoints: absence of post-PCI ≥70% ST-segment elevation resolution (51.6% versus 43.9%; $P = 0.035$), absence of TIMI 3 flow grade after PCI (27.5% versus 17.1%, $p = 0.0002$), composite of death/MI/stroke/urgent revascularization (9.9% versus 2.9%; OR 3.67 95% CI [2.27; 5.93], $p < 0.0001$) and mortality (8.5% versus 1.5%; OR 6.45 95% CI [2.75; 15.11], $p < 0.0001$). They also tended to have more frequently major bleedings (TIMI major 2.3% versus 1.1%; OR 2.13 [0.88; 5.18], $p = 0.095$). There was no significant interaction between time of ticagrelor administration (pre-hospital versus in-lab) and class of age.

Conclusions: Elderly patients (≥75) who represented one fifth of the patients randomized in the ATLANTIC trial, had less successful mechanical reperfusion and less favorable clinical outcomes likely due to comorbidities. The effect of early ticagrelor was consistent irrespective of age.

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