Results: 2854 patients treated with heparins were included. The risk of major bleeding or transfusion (3.0% vs. 7.0%) and in-hospital death (3.2% vs 9.2%) was lower with LMWH compared with UFH, a difference that persisted after multivariate adjustment (OR=0.51, 95% CI: 0.34-0.76 and OR=0.53, 95% CI: 0.37-0.76, respectively). Three-year survival and stroke and reinfarction-free survival were also higher with LMWH compared with UFH (adjusted HR =0.73, 95% CI: 0.61-0.86 and HR =0.73, 95% CI: 0.62-0.85, respectively). In two cohorts of patients matched on a propensity score for getting LMWH and with similar baseline characteristics (834 patients per group), major bleeding and transfusion were lower while three-year survival was significantly higher in patients receiving LMWH.

Conclusion: The present data suggest that the use of LMWH in AMI patients may have a better benefit/risk profile than UFH with in terms of bleeding, need for transfusion, and long-term survival.

010 Prediction of long-term survival in patients receiving optimal secondary prevention therapy after acute myocardial infarction: the FAST-MI registry
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Background: Predictors of long-term outcome in optimally-treated patients after AMI have not been extensively studied.

Aim: We assessed 3-year survival in a population of 3,262 patients from the FAST-MI registry who were discharged alive after the acute episode.

Results: At hospital discharge, 1586 patients (49%) received optimal medical treatment (OMT: antiplatelet + beta-blocker + statin + ACE-I or ARB agents). Patients receiving OMT were younger (64±13 vs 69±14 years, p<0.001), had a lower GRACE risk score (141±33 vs 151±36, p<0.001) and had more use of PCI during index hospitalization (75% vs 56%, p<0.001). Three-year survival was 88% in patients with OMT versus 77.5% in patients without (p=0.001). Cox multivariate analysis was used to determine predictors of 3-year mortality and covariates included age, sex, risk factors, comorbidities, type of AMI, CAD extent, use of PCI, use of CABG, in-hospital complications, and other discharge medications. Overall, adjusted HR for 3-year death was 0.82 (0.68-1.00), p=0.048, for patients receiving OMT, confirming the benefit of comprehensive therapy beyond each of its individual components. In the 1586 patients receiving OMT at discharge, independent predictors of long-term survival were age>75 years (HR 1.93 (1.03-3.64)), AMI type and severity (STEMI vs NSTEMI: HR 0.64 (0.44-0.93); GRACE score: HR 1.01 (1.00-1.01); LVEF<40%; HR 2.03 (1.31-3.16); 3-vessel CAD: HR 2.12 (1.28-3.52); previous CV history [stroke: HR 1.91 (1.29-2.83); CHF: HR 1.79 (1.12-2.88)]; management with an invasive strategy [HR 0.31 (0.17-0.56)]; and associated conditions [history of diabetes HR 1.79 (1.28-2.49); history of cancer HR 2.76 (1.75-4.33); current smoking at the time of AMI HR 1.88 (1.20-2.94)].

Conclusion: In patients receiving OMT after AMI, early invasive management remains a significant predictor of improved survival, while associated non cardiac conditions (and in particular cancer, diabetes, previous TIA or stroke, and smoking) are major determinants of higher long-term mortality.

011 The major part of one-year prognosis of acute coronary syndromes is associated with the severity of the initial clinical presentation – Results from the French MONICA registries
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Purpose: Death rate of acute coronary syndromes has decreased for more than 50 years. Out-of-hospital mortality remains high despite improvements in acute coronary syndrome’s care.

Aims: To evaluate the importance of out-of-hospital mortality and the main determinants of in-hospital and one-year mortality in France.

Methods: Analyses were based on data from the French MONICA population-based registry including exhaustively all acute coronary syndromes occurring in people aged 35-74 during the year 2006 in 3 geographic areas. First we evaluated out-of-hospital mortality. Then analyses were performed through Cox models on incident ACS reaching the hospital alive in order to determine main factors explaining the one-year mortality. Number of attributable deaths was assessed for variables of interest.

Results: After a one-year follow-up, case-fatality was 29.3% for incident events (n=2547) with 70.3% of out-of-hospital deaths and 21.1% occurring in the 28 days following the event. The number of attributable deaths related to 3 situations with a strong impact identified from multivariate analyses (out-of-hospital life-and-death emergency, hospitalization before ACS occurrence, and lack of coronary angiography) was 130 (59% of deaths occurring after reaching the hospital during the one-year follow-up. These sub-groups were corresponding to patients with an important initial state of severity and not benefiting from traditionally recommended treatments.

Conclusion: The major part of deaths after ACS occurs in the out-of-hospital phase. Moreover, the major part of one-year mortality is associated with a very poor prognosis before medicalization. This underlines the importance of cardiovascular prevention, population education and better out-of-hospital emergency management.

012 Use of invasive strategy in non-ST-elevation myocardial infarction is a major determinant of improved long-term survival. The FAST-MI registry
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Objectives: We assessed the impact of invasive strategy (IS) versus a conservative strategy (CS) on in-hospital complications and three-year outcomes in patients with Non-ST-Elevation Myocardial Infarction (NSTEMI) from the FAST-MI registry.

Background: Results from randomized trials comparing IS and CS in in-hospital complications and three-year outcomes in patients with Non-ST-Elevation Myocardial Infarction (NSTEMI) from the FAST-MI registry.

Methods: Of the 3,670 patients in the FAST-MI registry, which included patients with acute myocardial infarction (within 48 hours) over a one-month period in France at the end of 2005, 1,645 presented with NSTEMI.

Results: Of the 1,645 patients analyzed, 80% had an IS. Patients in the IS group were younger (67±12 vs. 80±11 years), less often women (29% vs. 51%) and had a lower GRACE risk score (137±36 vs. 178±34) as compared with patient treated with CS. In-hospital mortality and blood transfusions were significantly more frequent in patients with CS as compared with IS (13.1% vs. 2.6%, 91 vs. 4.6%). Use of IS was associated with a significant reduction in 3-year mortality and cardiovascular death (17% vs. 60%, adjusted HR: 0.44; 95%CI: 0.35-0.55 and 8% vs. 36%, adjusted HR: 0.37; 95%CI: 0.27-0.50).
After propensity score matching (181 patients per group), 3-year survival was significantly higher in patients treated with IS.

Conclusions: In a real-world setting of patients admitted with NSTEMI, the use of IS during the initial hospital stay is an independent predictor of improved 3-year survival, regardless of age.

013

Association between inflammatory markers, mean platelet volume and traditional risk factors in patients with documented coronary artery spasm

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Objectives: Coronary artery spasm is an important physiopathological mechanism in some forms of myocardial ischemic disease. Increased levels of inflammatory markers and mean platelet volume (MPV) are associated with increased risk thromboembolism, but the relationship between these parameters and coronary artery spasm is unclear.

Methods: During coronary angiography, iv methylergotrin was injected to 345 patients with chest pain and normal coronary angiograms to provoke coronary artery spasm. Pts were divided into 2 groups according to results: spasm group (60 pts) and non-spasm group (285 pts). We compared between groups: 1) inflammatory markers including C-reactive protein (CRP), white blood cells (WBC), polymorphonuclear neutrophils (PMN), monocytes (MO), and lymphocytes (LY); 2) hemostasis markers including mean platelet volume (MPV), platelet count, fibrinogen (FIB) and D-Dimers (DD); and 3) traditional risk factors for vascular disease, ie. hyperlipidemia, triglycerides (TG), total cholesterol (TC), LDL and HDL cholesterol (LDL-C, HDL-C) and uric acid (UA).

Results: Compared with females, more males with chest pain suffered spasm during the provocation test (23.56% vs 11.11%, P<0.05). There was no significant difference in serum levels of LDL-C, HDL-C, TG, TC, LY, MPV and FIB between groups (p>0.05). Serum levels of CRP and blood counts of PMN and MO were significantly higher in the spasm group (P<0.05). Compared with females, males had a higher frequency of a history of smoking (58.04% vs 46.78%, P<0.05). Logistic regression analysis showed that smoking, PMN and MO counts were significantly and independently associated with coronary artery spasm with odds ratios (OR) of 3.52 (1.79-6.90 95% CI, P=0.000), 1.21 (1.07-1.46 95% CI, P=0.04), and 5.35 (1.37-21.07 95% CI, P=0.01), respectively.

Conclusions: Inflammation may contribute to pathogenesis of coronary artery spasm. Smoking, PMN count and MO count appear to be clinical risk factors for coronary artery spasm. Conversely, spasm does not seem to be associated with abnormalities in thrombogenesis.

014

Underuse of recommended secondary preventive therapies in current routine clinical practice

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Aims: Recommendations on the use of antithrombotic agents, antihypertensive drugs and statin for secondary prevention of coronary artery (CAD), ischemic cerebrovascular (CVD), and peripheral arterial (PAD) diseases are now well established. However, there may be a gap between clinical practice and evidence-based guidelines. We aimed to investigate the prenombo use of secondary prevention medications in patients with recurrent cardiovascular events.

Methods and results: We prospectively recorded all patients with CVD and CAD in Dijon, France from 2006 to 2010. Data about medical history and prior use of treatments were collected. Multivariate analyses were performed to identify predictors of the use of medications in patients with previous cardiovascular disease. Among the 2126 patients included (1270 CVD and 556 CAD), 867 (40.3%) had a history of cardiovascular diseases including 448 (51.7%) with prior CVD only, 191 (22.0%) with prior CAD only, 68 (7.8%) with prior PAD only, and 160 (18.5%) with polyvascular disease. In these patients, 57.3% were on antithrombotic therapy, 61.2% were treated with antihypertensive drugs, 32.9% received statins, and only 23.6% were on an optimal regimen, defined as the combination of the three therapies. Compared with patients with previous CAD only, those with previous CVD only were less likely to be receiving each of these treatments or to receive an optimal regimen (OR=0.17, p<0.001).

Conclusion: This study highlighted the underuse of recommended secondary preventive therapies in current clinical practice. Underuse was particularly pronounced in patients with previous CVD. These findings may account for the burden of recurrent events.

015

Relation between platelet activation and inflammation indexes measured on admission and new onset atrial fibrillation in patients with acute myocardial infarction.

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Objective: Platelet activation is present in atrial fibrillation (AF), but there is some debate whether this is due to AF itself and/or to underlying cardiovascular diseases. We aim to determine the association between a marker of platelet reactivity (mean platelet volume (MPV)) and systemic inflammation (CRP) measured on admission, and new onset episode of AF in patients with MI.

Patients and methods: Prospective cohort of 4994 consecutive patients with AMI. Patients with paroxysmal or persistent AF were excluded.

Results: 426 (8.5%) patients were diagnosed with a new onset of AF during the in-hospital-stay (mean stay 3±2 days). These patients were older (75 vs 65, P<0.001), predominantly male, and prevalence of hypertension and diabetes was greater. Also less smoker were found among this group. Despite similar reperfusion strategies, clinical presentation with heart failure and increased heart rate (HR) was more frequently found in patients with AF. Left ventricular ejection fraction (LVEF) was significantly depressed in AF patients (47 vs. 55, P<0.001), among with increased NT-proBNP, admission MPV (8.9 vs. 8.6, P<0.001) and CRP (10.7 vs. 5.7, P<0.001). Backward logistic regression analysis (model 1) found that age [OR=1.04, 95%CI (1.031-1.050), P<0.001], HR [OR=1.016, 95%CI (1.011-1.021), P<0.001], LVEF [OR=0.979, 95%CI (0.970-0.987), P<0.001] and MPV [OR=1.182, 95%CI (1.064-1.312), P<0.001] were independent predictors of AF occurrence. A second backward regression analysis (model 2= model 1+CRP) found that age [OR=1.036, 95%CI (1.026-1.046), P<0.001], HR [OR=1.013, 95%CI (1.008-1.018), P<0.001], LVEF [OR=0.977, 95%CI (0.968-0.987), P<0.001] and CRP [OR=1.003, 95%CI (1.001-1.005), P=0.006] were independent predictors of AF occurrence after MI.

Conclusions: This study suggested that new onset of AF early after MI is rather linked to inflammation induced by myocardial damage or the existing atherosclerotic burden than platelet activation.

016

Evidence of systemic plaque vulnerability in acute coronary syndromes with FDG-positron emission tomography and computed tomographic angiography in the BIOCORE-2 study.

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