Table 1: CMR data according to the presence of fQRS. N(%) or median (25%-75%).

<table>
<thead>
<tr>
<th></th>
<th>No fQRS</th>
<th>fQRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>n=118 (n=739)</td>
<td>n=128</td>
<td>p</td>
</tr>
<tr>
<td>LVEF, %</td>
<td>56 (48-62)</td>
<td>49 (39-58)</td>
</tr>
<tr>
<td>EDV index (mL/m²)</td>
<td>135 (105-170)</td>
<td>155 (129-190)</td>
</tr>
<tr>
<td>ESV index (mL/m²)</td>
<td>60 (47-77)</td>
<td>76 (57-104)</td>
</tr>
<tr>
<td>Presence of POM, n (%)</td>
<td>46 (39)</td>
<td>73 (57)</td>
</tr>
<tr>
<td>Presence of MO, n (%)</td>
<td>71 (60)</td>
<td>93 (72)</td>
</tr>
<tr>
<td>Extent of POM, (%)</td>
<td>1.98 (0.95-4.2)</td>
<td>3.5 (1.7-5.6)</td>
</tr>
<tr>
<td>Extent of MO, (%)</td>
<td>8.55 (3.9-14.7)</td>
<td>12.7 (6-23)</td>
</tr>
<tr>
<td>IS, (%)</td>
<td>16 (9-25)</td>
<td>25 (15-34)</td>
</tr>
</tbody>
</table>

Conclusions: These findings give further support to the argument that fQRS is a reliable marker of infarct size and could explain its strong prognostic value after AMI.

041

Plasma N-terminal pro-B-type natriuretic peptide and heart rate variability in patients with acute myocardial infarction. Data from RICO survey

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Background. We investigated the relationships between the autonomic nervous system, as assessed by heart rate variability (HRV) and levels of N-terminal Pro-B-type Natriuretic Peptide (NT-proBNP), in the setting of acute myocardial infarction (MI).

Patients and methods. Plasma NT-proBNP (Elecsys, Roche) was measured on admission in patients admitted < 24h for acute MI. Patients with chronic atrial fibrillation or pace maker were excluded. The mean of standard deviation of RR intervals (SDNN), percentage of RR intervals with >50ms variation (pNN50), root mean square of differences of successive RR intervals (rMSSD), and frequency domain parameters (total power (TP), high frequency power (HF), low frequency power (LF)) were assessed by 24h holter ECG monitoring at 5 ± 2 days after MI onset.

Results. Among the 1018 patients included, median (IQR) NT-proBNP value was 681 (159-2432) pmol/L. Patients with highest quartile of NT-proBNP were older, more likely to be women, hypertensive, had higher admission heart rate, lower LVEF, but were less likely to be smokers. Highest NT-proBNP quartile group had lower SDNN, LF/HF and HF, but was not different from smokers. Multiple regression analysis showed that plasma NT-proBNP levels remain predictive of LF/HF (B=0.045, p<0.001), after adjustment for confounding (Beta-blockers, female, and age).

Conclusions: Our population-based study suggests the importance of NT-proBNP levels to predict decreased HRV after acute MI. Moreover, our results highlight that high NT-proBNP levels are associated with a decrease in the effects of the sympathetic system. Further experimental studies are needed to explore the impact of such findings.

042

Multiple complex coronary lesions and periodontal disease


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Context: Periodontal disease, including bone loss, increases the risk of atherosclerosis through plaque destabilization. Multiple complex coronary lesions (MCL), defined by stenosis >50%, and at least two of the following: chronic occlusion, impaired flow, thrombus, irregularity, and ulceration of the lesion, are associated with multifocal destabilization of atherosclerotic coronary plaque. We investigated whether significant bone loss could predict the presence of MCL.

Materials and methods: 150 consecutive patients who initiated outpatient cardiac rehabilitation between 2007 and 2010 for myocardial infarction <1 month and who underwent coronary angiography were included. Patients without or simple complex coronary lesions (SCL) group were compared to patients with MCL. A panoramic dental x-ray was made including bone loss> 50%.

Results: Over 20% of patients had MCL (32/150), and patients in the SCL and MCL groups had similar cardiovascular risk factors. However, patients with MCL were less likely to be women and more likely to have multivessel disease than were patients in the SCL group (21% vs. 6%, p=0.011, and 86% vs. 56%, p<0.001). Bone loss> 50% tended to be more frequent in patients with MCL than in those with SCL (50% vs. 32%, p=0.003). In addition, patients with MCL had a higher CRP level (CRP> 10 mg/L: 32% vs. 19%, p=0.01). In multivariate analysis, multivessel disease (OR (95% CI): 6.63 (2.09-21.03), and CRP>10 mg/L (OR (95% CI): 3.98 (1.48-10.69)) were associated with the presence of MCL. Female sex (OR (95% CI): 0.23 (0.04-1.22) tended to be associated with SCL. In addition, bone loss> 50% significantly increased the risk of MCL (OR 2.63 (1.03-6.71) p=0.043) even after adjustment for other predictors of MCL.

Conclusion: Bone loss, a simple parameter of periodontal evaluation, correlated with complex and multiple coronary lesions, independently of other known factors associated with MCL, including systemic inflammation.

043

Multislice computed tomography to rule out coronary vasculopathy in heart transplant patients


Aim: Assess if invasive coronary angiogram (CA) can be replaced by multislice coronary tomography (MSCT) (64 – 256-row) for the systematic rule out of coronary vasculopathy in heart transplant patients.

Methods: Electrocardiogram-gated contrast-enhanced MSCT (Philips, Brilliance, 64-row for the first 25 patients and 256-row for the others) was performed 24 hours before annual CA. MSCT parameters, adapted to the patient’s weight, included 120 kV, 800mAs, 0.625 mm slice thickness, 0.420s/0.27s rotation time. Coronary segments > 1.5 mm were classified as stenosis (stenosis>50%), atheroma (stenosis<50%) or normal and blindly compared to CA.

The primary endpoint was the negative predictive value (NPV) of MSCT for the detection of significant (stenosis>50%) coronary artery disease (CAD). Secondary endpoints were the comparison of X-Ray (mSv) and iodine contrast agent (ml) exposures. We plan to present the final results (n=102) at SFC meeting.

Results: 87 patients were prospectively included. Mean age was 52 ± 13 years. Heart transplantation occurred 6.5 years before inclusion. 1108 (97.8%) segments

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044
Increase of sympathetic nervous in patient with vasospastic angina

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The pathogenesis of vasospastic angina remains incompletely elucidated. Among multiple mechanisms, abnormalities in the autonomic innervation have been underscored. As vagal withdrawal can act as a trigger for spontaneous coronary spasm, changes in sympathetic activity have also been suggested as individual or combined risk factors for vasospastic angina. Previous study based on heart rate variability analysis showed both a reduction and an enhancement of sympathetic nervous activity in patients with variant angina, but direct assessment of sympathetic nerve activity, using Muscle sympathetic nerve activity (MSNA) has never been performed.

We evaluated MSNA, haemodynamic parameters (Blood Pressure, Heart Rate etc...) in 22 patients: 11 having definite vasospastic angina confirmed by ergonovine provocation test during angiography and 11 matched patients (for age, gender, body mass index, distribution of risk factors, treatment) with a negative for provocation test. Parameters were collected during baseline and during a mental stress known to further increase MSNA.

At baseline, there were no significant difference between patients with and without spasm for MSNA (56.9±1.78 burst/min vs. 52.0±2.78 burst/min; n.s.) and haemodynamic parameters. During mental stress period, patients with vasospastic angina presented a higher sympathetic nerve activity in comparison to control patients (66.45 burst/min vs. 59.45 burst/min; p<0.05) without significant difference on haemodynamic parameters.

Our results show for the first time a direct evidence of increased sympathetic activity in patients with vasospastic angina, during mental stress. This propensity to further increase MSNA during stress may play a key role in the pathogenesis and occurrence of coronary spasm.

045
New P2Y12 inhibitors versus clopidogrel in primary percutaneous coronary intervention for STEMI: a meta-analysis

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(1) Centre de Réadaptation Cardiaque, Vence, France – (2) AP-HP, CHU Jean-Philippe Collet (2), Gilles Montalescot (2)

Purpose: Primary PCI of STEMI is a highly thrombotic situation where fast and potent platelet inhibition is preferred. No single trial has ever shown a long-term cardiovascular mortality benefit with a P2Y12 receptor antagonist in this situation.

Methods. We performed a meta-analysis of randomized trials that compared new P2Y12 receptor antagonists with clopidogrel in Primary PCI of STEMI on mortality, ischemic outcomes and bleeding events. Data at longest available follow-up from 4 studies were analysed (TRITON STEMI primary PCI, CHAMPION PCI, PLATO STEMI and ERASE MI).

Results: 11934 patients were included; 5925 received new P2Y12 inhibitors (1203 prasugrel, 487 canegrelor, 4201 ticagrelor, and 34 elinogrel) and 6009 received clopidogrel (loading dose ranging from 300 to 600mg). Median time from admission to PCI was 5 hours. 58.50% of patients received UFH, 30.33% LMWH, and 8.91% bivalirudin or fondaparinux. 46.66% were treated by additional antiGpIIbIIIa. All patients received aspirin. New P2Y12 inhibitors significantly reduced MACE from 10.85% to 9.32% (p=0.006), any death from 5.43% to 4.3% (p=0.004), CV death from 4.96% to 4.03% (p=0.02), and stent thrombosis from 3.21% to 2.17% (p=0.001). Strokes were increased from 1.11% to 1.59% (p=0.02), TIMI major (from 7.51% to 7.50%, p=0.63) or TIMI major+minor bleeding (from 4.96% to 5.98%, p=1) were not different between the two groups (Figure 1).

Conclusion: In comparison with clopidogrel, new P2Y12 inhibitors significantly reduce mortality in primary PCI of STEMI with no increase in bleeding.

046
Change over fifteen years time of the reperfusion strategies of acute myocardial infarction: insights from the MIRAMI registry

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Background: Management of ST elevation myocardial infarction (STEMI) is mainly based on reperfusion therapy either by thrombolysis or primary angioplasty (PAMI). However, many patients (pts) do not receive this therapy...