Purpose: Atherosclerotic plaque vulnerability is a systemic phenomenon and is often associated with severe plaque infiltration with inflammatory cells. 18-Fluoro-deoxyglucose (FDG) accumulates in inflammatory cells of atherosclerotic plaques. The aim of this study was to assess whether 1) FDG uptake in the aorta and carotid arteries measured by positron emission tomography (PET) is higher in patients with acute coronary syndromes (ACS) than in patients with stable coronary artery disease (CAD) and; 2) associated with morphological markers of plaque instability detected with computed tomography angiography (CTA).

Methods: Patients with ACS (n=50) or stable CAD (n=28) underwent a PET 90 minutes after injection of 5 MBq/kg FDG followed by a CTA of the thoracic aorta and carotid arteries. Tissue-to-background ratios (TBRs) were calculated by dividing maximal standard uptake value (SUV) of the arterial wall by the mean SUV of blood. A global TBR was calculated in each patient as the average of the TBRs from the thoracic aorta and the 2 carotid arteries. Atherosclerotic plaques were classified with CTA as non-calcified/mixed/calcified, and smooth/irregular.

Results: Aortic, carotid and global TBRs (mean±SD) were higher in patients with ACS than in patients with stable CAD (1.78±0.19 vs. 1.61±0.18; 1.84±0.35 vs. 1.64±0.17; 1.81±0.23 vs. 1.62±0.16; p<0.05 for all). Patients in the highest quartile of global TBR had a higher percentage of non-calcified and irregular plaques in the thoracic aorta and carotid arteries as compared to patients in the lowest quartile of global TBR (cf. Table 1).

Conclusions: FDG uptake in the thoracic aorta and carotid arteries is higher in patients with ACS than in patients with stable CAD and correlates with morphological markers of plaque instability assessed by CTA.

Table 1 – Results

<table>
<thead>
<tr>
<th>Total number of plaques</th>
<th>Non-calcified</th>
<th>Mixed</th>
<th>Calcified</th>
<th>Smooth</th>
<th>Irregular</th>
</tr>
</thead>
<tbody>
<tr>
<td>First quartile</td>
<td>53</td>
<td>1.36±1.60</td>
<td>32%</td>
<td>30%</td>
<td>45%</td>
</tr>
<tr>
<td>Second quartile</td>
<td>70</td>
<td>1.61±1.70</td>
<td>63%</td>
<td>43%</td>
<td>37%</td>
</tr>
<tr>
<td>Third quartile</td>
<td>55</td>
<td>1.71±1.81</td>
<td>74%</td>
<td>39%</td>
<td>47%</td>
</tr>
<tr>
<td>Forth quartile</td>
<td>58</td>
<td>1.82±2.75</td>
<td>85%</td>
<td>40%</td>
<td>57%</td>
</tr>
</tbody>
</table>

017*

Echocardiographic factors determining immediate results of percutaneous mitral balloon commissurotomy

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Objectives: Define echocardiographic predictors of the immediate results of percutaneous mitral balloon commissurotomcy (PMC).

Methods: PMC by the Inoue balloon was attempted in 247 patients (mean age: 35 ans, 77% female) with severe mitral valve stenosis. All the patients had undergone echocardiographic examination before PMC to assess mitral anatomy, commissural calcification and to determine the Wilkins score.

Results: The mean value of Wilkins score was 7.98±1.61(range 5-13) and the mean mitral valve area (MVA) before PMC was 1±0.19cm² (range 0.5-1.4cm²). Twenty-nine patients (11.7%) had one-commissural calcification. After PMC, the mean MVA increased to 1.79±0.34cm² (p<0.001) resulting in a success rate of 83%. Severe mitral regurgitation (MR) occurred in 5 patients (2%). Wilkins score was an independent predictor of the immediate result of PMC, but if >8, this score had a weak predictive value. Commissural morphology was another independent predictor of the immediate result of PMC.

Conclusion: Echocardiography is now the cornerstone in the assessment of mitral anatomy before PMC and should integrate Wilkins score and commissural morphology for the optimal selection of patients to PMC.

*This abstract referred to topic “Valvular heart disease”.

018

Prevalence and impact of cardiovascular risk factors among HIV-infected patients presenting with acute myocardial infarction

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Background: Acute complications of atherosclerosis, such as acute myocardial infarction (AMI) are becoming more common in patients with HIV. But the risk of coronary heart disease in HIV patients is influenced both from traditional risk factors and from specific features of this disease. The aim of the present study was to examine in-hospital case fatality in HIV-infected patients with AMI.

Methods: From the French nationwide hospital medical information database, data for all the consecutive patients hospitalized in the 1546 French hospitals/clinics for AMI from 1st January 2005 to 31st December 2009 were analysed. Patients were match according following parameters: age, gender, type of infarction (ratio 1:2).

Findings: Among the 677,076 patients included, HIV-infected patients (n=1344) accounted for 0.20%. HIV patients were younger, more frequently male and more likely to smoke. Hospital mortality was 4.3% in the HIV-infected group compared with 7.0% in uninfected patients (p <0.0001), but no difference appeared between the 2 groups after matching (3.4% vs. 4.3%; p=0.1334). Based on a Cox regression model, HIV-infection was not an independent predictor of in-hospital mortality in the overall population or after matching. Among none HIV infected patients, dyslipidemia, current smoker, STEMI and coronary angioplasty were independent predictors of in-hospital mortality. In contrast, among HIV infected patients, dyslipidemia OR-95%IC: 0.356 (0.141-0.903), renal failure [OR-95%IC: 2.433 (1.174-5.044)] and STEMI [OR-95%IC: 2.130 (1.134-4.076)] were independent factors associated with in-hospital mortality.

Conclusion: HIV-infected patients have a greater risk of myocardial infarction, but the present study demonstrated than the short-term are similar to non infected patients. Moreover, chronic kidney disease is more common in HIV-infected patients and associated with a worse prognosis. Consequently HIV care increasingly needs to incorporate strategies to manage these non-infectious co-morbidity in primary and secondary prevention.

019

National observational study of diagnostic and interventional cardiac catheterization by the French Society of Cardiology (ONACI): study design and baseline characteristics

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Background: The national observational study of diagnostic and interventional cardiac catheterization (ONACI) is a prospective multi-center registry of the French Society of Cardiology including all interventional cardiology procedures performed from 2004. We aimed to evaluate “real world” management of patients with coronary artery disease (CAD) in France from this registry.

Methods: The present study is focused on data collected between 2004 and 2008. Patient demographics and co-morbidities, invasive parameters, treatment options, and procedural techniques were prospectively collected. Patients were recruited in 99 hospitals (55% of patients were hospitalized in private clinics, 45% in public institutions).