defined as distal pressure divided by mean aortic pressure during maximal hyperemia (normal value ≥ 0.8).

**Results:** The mean FFR and CFR were 0.84 ± 0.07 and 2.8 ± 0.7 respectively. Concordant results between FFR and CFR were seen in 39 cases (85%) and discordant results in 7 cases (15%). There was a weak correlation between CFR and FFR (r = 0.43, p < 0.01). A better correlation was found between FFR and LAD diameter stenosis (r = 0.42, p < 0.01) than between CFR and LAD diameter stenosis (r = 0.23, p < 1.0), and between FFR and lesion length (r = 0.39, p < 0.05) than between CFR and lesion length (r = 0.27, p = 0.1). However, the sensitivity and the positive predictive value of CFR ≥ 2 to detect a non significant lesion defined by a normal FFR were high (94.5% and 87.5 % respectively) in this setting.

**Conclusion:** In pts with LAD stenosis of IS, discordant results between CFR and FFR were not unusual, and the anatomic determinants of the stenosis are better correlated to FFR than to CFR. However, CFR which is a global evaluation of the coronary tree has a very high sensitivity to detect a non significant lesion, despite the high prevalence of vascular risk factors.

129

Detection of coronary in-stent restenosis by 64-slice Computed Tomography in asymptomatic patients after acute myocardial infarction treated by primary angioplasty using stents with thin struts.

Laurent Jacquemin (1), Olivier Roth (1), Mahmoud Moussaoui (1), Rafik Sakri (2), Jean Yves Wiedemann (1), Catherine Turnani (2)
(1) CH de Mulhouse, Cardiologie, Mulhouse, France – (2) CH de Mulhouse, Radiologie, Mulhouse, France

The occurrence of instent restenosis (ISR) after myocardial infarction (MI) treated by primary angioplasty is considered as a factor of poor prognosis. The methods to detect ISR are still debated in asymptomatic patients in whom functional scintigraphic or ultrasound investigations are usually proposed. Our study sought to evaluate the effectiveness of anatomic diagnosis of ISR by 64-slice Multisector Computerized Tomography (MDCT) in patients (pts) treated with one or more stents whose thickness of strut is less than 100 µm. The diagnosis of ISR by MDCT was controlled by coronary angiography, pts without ISR at MDCT were followed clinically by physicians according to their practice.

We included from January 2007 to June 2009 54 pts (50 men and 4 women) of 53.0 ± 10.8 years old. The culprit coronary lesion of MI was treated with 1.4 ± 0.6 stents (3.1 ± 0.4 mm diameter and 19.9 ± 9.7 mm length). Seventy four stents with strut of 84.6 ± 8.1 µm thickness were implanted on culprit lesions. The treated artery was LAD in 19 pts (35.2%), circumflex in 8 pts (14.8%) and RCA in 27 pts (50%). MDCT was performed 206 ± 136 days after MI. Seventeen pts (31.4%) received beta-blocker before acquisition, heart rate was 58.7 ± 7.2 bpm and effective radiation dose was 163.5 ± 1.5 mSv. Two stents (2.7%) were considered nonassessable in 2 pts (3.7%). MDCT showed ISR in 14 pts (26.9%). Coronary angiography performed in 12 pts confirmed ISR in 9 pts 55 ± 50 days after MDCT. The positive predictive value of angiographic ISR after MDCT was 75%. Thirty eight pts without ISR were followed during 392 ± 200 days. No patient died. 2 pts experienced MI in relation to a definite late stent thrombosis, no patient had revascularization for ISR.

Thus 64-slice MDCT could be a useful tool in systematic detection of ISR after MI in asymptomatic patient treated with thin strut stents. An evaluation of MDCT in addition to conventional functional methods should be discussed on a larger population.

130

Sublingual nitrates should be used systematically before multislices computed coronary imaging.

Maher Hakim, Ramon Labbe, Gérard Haquin, Jean Claude Gaux, Mario Auguste, Valérie Huart, Ahmed Fareed, Jean Marc Pernes, Patrick Dupouy
PCVH Hôpital Privé d’Antony, Antony, France

**Background:** Coronary multislices CT (MDCT) has limited spatial and temporal resolution, which hampered the analysis of coronary artery (CA) segments. By increasing CA geometry the use of nitrates before acquisition could improve analysis quality, which is heart rate (HR) highly dependant.

**Objective:** The aim of this study was to evaluate safety, hemodynamic effects and imaging efficacy of systematic use of sublingual nitroglycerin just before a 256 slices CA scanner acquisition.

**Method:** Thirty six consecutive patients had a coronary MDCT acquisition after 1 spray of sublingual nitroglycerin (NatsprayR 0.30mg) (group 1). HR and mean arterial blood pressure (MPB) were measured before and after spray. Global imaging quality assessment, number of analyzable segments according to the syntax score segmentation, mean diameter and area of each segments were done by two blinded observers and compared to a control group of 36 consecutive patients (group 2) examined with the same machine, but without nitrates.

**Results:** Both groups were similar considering age, sex ratio, BMI and beta-blocker used. In group 1 nitrates did not change heart rate (62±5 vs. 61±4 bpm) nor MBP (100±7 vs. 15 mmHg vs. 94±12 mmHg). A total of 536 and 531 segments were analyzed respectively in group 1 and 2. Global imaging quality assessment was equal in both groups (good quality: 93.1% vs. 91.7%, group 1 and 2 respectively). There was <1% of missed segments in group 1 compared to 3% in group 2 (p<0.002), this represents 2.1% vs. 7.2% of secondary segments, p=0.03. Per segments mean diameter and area was greater in group 1 than group 2 (3.2±0.01 vs. 2.8±0.01, p=0.0001; 8.6±0.03 vs. 6.2±0.05, p<0.0001).

**Conclusion:** Sublingual nitroglycerin significantly improves CA geometry and number of assessable segments, especially in smaller secondary segments, with no quality deterioration. Thus, sublingual nitrates should be systematically used before a coronary MDCT.

131

Tomography angiography in acute coronary syndrom : the TIACS study

Sébastien Hascoët (1), Didier Carrié (1), Michel Galinier (1), Jérôme Roncalli (1), Vanina Bongard (2), Marchal Pauline (1), Marie-Agnes Marachet (3), Chabbert Valerie (3), Rousseau Herve (3), Charpentier Sandrine (4), Olivier Latreix (1), Meyer Elbaz (1)
(1) CHU Rangueil, cardiology, Toulouse, France – (2) CHU Rangueil, service d'épidémiologie, UMR 558, INSERM, Toulouse, France – (3) CHU Rangueil, radiologie, Toulouse, France – (4) CHU Rangueil, SAU, Toulouse, France

**Background:** Triage of chest pain patients in the emergency department remains challenging. Multi-slice computed tomography angiography (CTA) has a high negative predictive value for exclusion of coronary artery stenosis.

**Objectives:** to assess mid-term outcomes in patients with low to intermediate likelihood of acute coronary syndrome (ACS) who underwent Multi-slice CTA.

**Methods:** prospective observational single-center cohort study in chest pain patients with normal troponin and non ischemic electrocardiogram. Patients with normal coronary 64-slice CTA or with stenosis less than 50% luminal narrowing were discharged from the emergency unit. End points were coronary artery revascularizations during index hospitalization and major adverse cardiac events (MACE) during follow-up.

**Results:** Among 123 patients (mean age 51 +/- 13 years, 70% men), 60 were free of coronary artery disease (CAD) according to CTA (49%). Twenty-six (21%) had non obstructive disease and 29 (24 %) had inomcomplete or positive computed tomography for significant stenosis. Mean radiation exposure was 21 +/- 1 mSv. Twenty-seven patients had invasive coronary angiography. Ten patients (8%) needed coronary artery revascularizations during index hospitalization. Nine had coronary angioplasty and one patient had bypass surgery with four grafts.

During the mean follow-up of 14+/-4 months, no patient suffered from MACE including patients who had coronary artery revascularizations during index hospitalization. Negative predictive value for MACE was 100% (95% confident interval 98-100%).

**Conclusions:** Seventy-three percent of patients with acute chest pain and low to intermediate likelihood of ACS were free or had non-significant CAD according to CTA and no MACE during a 14 month follow-up period. Given the large number of such patients, early coronary CTA may significantly improve patients’ management in the emergency department. Reduction of radiation exposure will facilitate acceptance in clinical practice.