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Does routine measurement of ankle brachial index ameliorates the assessment of coronary risk level in patients with known or suspected coronary artery disease. The ABICARD study

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Background: Ankle-brachial pressure index (ABI) is an independent predictor of the extent of coronary atherosclerosis and cardiovascular events. To date ABI measurement is not part of the routine examination in patient admitted for coronary angiography. Our objective was to establish ABI measurement as a routine procedure in our interventional cardiology unit to ameliorate the assessment of coronary risk level for patients admitted for scheduled coronary angiography.

Method: ABI measurement was performed on admission using a doppler ultrasonic instrument. Patients with past medical history of peripheral arteriopathy were excluded. Cardiovascular risk factors and clinical findings were collected. Correlations and multivariate analysis were performed on R software.

Results: In the pilot study, 40 consecutive patients were included between February and April 2009. 79% were males and the mean age was 66±12 years. ABI <0.9 was found in 6 patients. Significant multivessel disease was found in 10 patients: 6 with ABI<0.9 and 4 with ABI≥0.9. Patients with ABI<0.9 were significantly older 75±11 vs 64±12 (p=0.04) and had a trend for lowerglomerular filtration rate MDRD=61±21 vs 77±20 mL/min/1.73m_2 (p=0.08). 5-years probability of cardiovascular death was 12±4% in patients with ABI<0.9 vs 7.2±7.6% in patients with ABI≥0.9 (p=ns). Multivariate analysis showed that ABI remains a significant predictor of multivessel disease after adjustment on other risk factors. Low ABI was significantly correlated with 5-years probability of cardiovascular death ( spearman = 0.43, P=0.03).

Conclusions: ABI is an independent predictor of coronary multivessel disease and 5 years probability of cardiovascular death. Routine ABI measurement in patients with known or suspected coronary artery disease provides additional information regarding patient’s risk and may be taken into account to establish optimal care strategy.

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Natural History Of Dual Anti-Platelet Responsiveness After Angioplasty In Elderly Patients

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Objectives: The aim of this monocentric prospective observational study is to evaluate Asa and Clopi activity after PCI in elderly pts and to assess the evolution of this responsiveness at 5 weeks.

Methods: We enrolled 81 elderly pts (±75 years) from Jan to Dec 2008 of which 75 (75 mg/day ±7 days) and Clopi (after loading dose 300 mg before PCI and 150mg/day for 4 weeks followed by 75 mg/ day for 1 year). We used the VerifyNow Asa assay and the VerifyNow Clopi P2Y12 assay (Accumetrics Inc, USA) to determine respectively Asa and Clopi responsiveness in-hospital at 11.30 am (T1) and during a medical consultation at 5 weeks (T2).

Results: Asa non responders were noted in 10% and in 14% pts at respectively T1 and T2. Clopi non responders in 37% and in 70% pts at respectively T1 and T2. Significant changes were observed in Clopi response from responder to non responder (p < 0.001); similarly changes were noticed but in both ways for Asa response from T1 to T2 (p=0.005). Multivariate analysis revealed plasma-HDL-cholesterol (OR [0.81], 95% CI[0.67 to 0.98];p=0.031; for a raising of 0.1 mmol/L and hematocrit level (OR [0.85], 95% CI [0.75 to 0.96]; p=0.008 for an increasing of 1%) to be independent predictors of Clopi non responsiveness at T1; in the same way diabetes (OR [0.30], 95% CI [0.10 to 0.95]; p=0.041; for non diabetes vs diabetes) and hematocrit level (OR [0.8], 95% CI [0.77 to 1.00]; p=0.045 for an increasing of 1%) are independently associated with Clopi non responsiveness at T2.

Conclusions: In elderly, after PCI there are changes in dual antiplatelet responsiveness between tests in-hospital and at 5 weeks marked for Clopi activity. Low hematocrit remains an independent predictor of Clopi non responsiveness.

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Predictive factors of ST-segment resolution after primary angioplasty and clinical outcome

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In the setting of acute myocardial infarction (AMI), early resolution of ST-segment elevation was a useful predictor of final infarct size, left ventricular function and clinical outcome.

Aim: to determine the predictive factors of ST-segment resolution immediately following primary coronary angioplasty for AMI.

Methods: primary angioplasty was performed in 270 consecutive patients with first AMI, they were divided into 2 groups according to whether ST-segment resolution occurred 1 hour after the procedure. ST-segment resolution ≥ 70% was considered as ‘complete’ ST-segment resolution, whereas ST-segment resolution < 70% was considered as ‘incomplete’ ST-segment resolution.

Results: of the 270 patients, 156 (57.8%) had complete ST-segment resolution. Patients with pre-infarction angina had a greater degree of ST-segment resolution than those without angina (71 ±21 % vs. 49± 43%, p=0.02).

On multivariate analysis, the absence of pre-infarction angina (OR=2.7; CI 1.7-3.4;p=0.03) as well as the admission after H4 (OR=3.5; CI 1.58-8.06, p=0.002; patient age ≥ 70 year(OR= 5.6; CI 2.23-14.4,p<0.001) and initial TIMI flow grade 0/1 (OR=13.6; CI 4.5-21.2, p<0.001) were major independent predictors of poor ST-segment resolution; whereas sex, coronary risk factors, Killip class on admission, multivessel disease and extent of collaterals were not significant.

There was a significant difference in survival free of major adverse cardiovascular events, at multivariate analysis =, incomplete ST-segment resolution was an independent factor of 1-year mortality (p=0.016).

Conclusions: Rapid ST-segment resolution was associated with a better clinical outcome and prognosis after successful primary PTCA. Pre-infarction angina, age < 70 years, TIMI flow 2/3 and ischemia time < 4 hours were associated with a greater degree of ST-segment resolution after primary angioplasty.

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C-Reactive Protein Improves Risk Prediction in Patients with Acute Coronary Syndromes

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Rationale and aim: Elevated C-reactive protein level is a risk marker in patients with acute coronary syndromes (ACS), but current risk score systems do not consider this factor. We studied the incremental predictive value of adding CRP to the GRACE risk score.

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Methods and results: Characteristics, treatments and 30-day mortality were recorded for 1408/1901 consecutive ACS patients. Changes in global fit, discrimination, calibration and reclassification were evaluated upon addition of CRP to the GRACE risk score. High-CRP patients (CRP >22 mg/L, 4th quartile of CRP) were older, had more comorbidities and worse hemodynamic conditions, received less recommended treatment and had a four-fold higher 30 day mortality. Multivariable analysis demonstrated high-CRP as an important and independent predictor of mortality. Addition of high-CRP in the GRACE model improved global fit, discriminatory capacity and calibration. Patients were divided into 4 groups according to GRACE risk score prediction: <1%, 1 to <5%, 5 to <10% and >=10%. The model with high-CRP allowed adequate reclassification in 12.2%.

Conclusions: Elevated CRP level is an independent and important predictive factor of 30-day mortality in ACS patients, even after adjustment for comorbidities, hemodynamic conditions and treatment. Combined with the GRACE risk score, CRP information improves risk classification.

047 Coronary angioplasty of the chronic total occlusion. Outcome and study of the Balance Risc and Benefit. A study of 62 cases
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Percutaneous coronary intervention (PCI) of the coronary chronic total occlusion (CTO) is widely discussed because of the difficulty and the risks of the procedure and the controversial but very interesting clinical benefit in case of procedure success.

Objective: To evaluate the in-hospital and long-term clinical outcome of PCI in the case of CTO and measure the adverse effects and complications.

Methods: 62 cases of PCI for a CTO were consecutively registered from January 2005 to February 2009. In addition to an assessment of the technical characteristics and procedural outcomes, patients were followed for occurrence of major adverse cardiac events (MACE). These patients are distributed in two groups: (A) for the occlusion between 1 and 3 months age and (B) for the occlusion of more than 3 months age. RESULTS: 68 lesions were treated in these 62 patients (47 male and 15 female) with mean age of 59 years (40-80). 42% of these patients were diabetics, 48% smoker and 26% with hypertension. 27 patients had an ST elevation acute coronary syndrome (ACS) and 24 a non ST elevation ACS, where 2 had stable angina. Balloon angioplasty was performed in only 4 cases and the stenting in 58 cases with use of 64 stents (average of 1.1 stent / artery and of 1.2 stent / patient). We used drug eluting stent in only 4 cases and the stenting in 58 cases with use of 64 stents (average of 1.1 stent / artery and of 1.2 stent / patient).

Conclusion: We recorded a success rate of 90% (57/68). The success was better in the group A 90% (29/32) than the group B 77% (28/36) (P < 0.05). The most frequent cause of procedure failures was non residual stenosis) with TIMI 3 flow (grade 3) at the end of the PCI was 83% of procedure success.

049 Marked reduction of operator radiation exposure by using a patient lead cover during coronary angiography or percutaneous intervention
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Background: Operators and patient radiation exposure during interventional cardiology procedures may induce radiation injury and may increase risk of cancer.

Objectives: To determine the effectiveness of a lead cover placed over the patient abdomen and groins in reducing operator radiation exposure during coronary intervention.

Methods: Radiation exposure measurements were performed over an 8 weeks period, in patients undergoing diagnostic and/or interventional coronary procedures. Usual protection of the operator was ensured using a lead apron, low leaded flaps, and leaded glass. Each of three procedures was realized using a lead cover placed over the patient abdomen. Operator irradiation was assessed by using 3 electronic dosimeters placed over the apron on the chest and in the back (no 1, 2) on the left arm (no 3). Patient radiation exposure (using the diamentor system), ambiental irradiation (using an electronic dosimeter placed in the room opposite to the Xray tube) and fluoroscopy times were recorded. Results are presented in mean ± SEM and comparisons assessed by student t test.

Results: Operator exposure was assessed during 189 procedures (136 coronary angiograms and 53 percutaneous coronary interventions) in 71 cases (37%) with the lead cover over the patient (group 1) and in 118 cases (63%) without it (group 2). Fluoroscopy times, dose area products and ambient irradiation were similar with and without the lead cover (4 ± 2 vs 4.1 ± 0.6 min, 55.7 ± 5.8 vs 57.6 ± 4.2 Gy cm² and 0.7 ± 0.2 vs 0.8 ± 0.1 μSv respectively – p > 0.05). However, operator irradiation was markedly decreased by using the lead cover: from 19.2 ± 3.1 to 4.9 ± 0.9 μSv at the chest level (p=0,001), from 1.8 ± 0.3 to 0.3 ± 0.1 μSv at the back (p=0,002) and from 25.8 ± 4.7 to 10.2 ± 2.2 μSv at the left arm (p=0,019).

Conclusions: Using a lead cover placed over the patient is highly effective in attenuating operator scatter radiation exposure during coronary procedure. Such additional protection device might be useful either in the perspective of long duration procedure or in routine use.

050 Prognostic impact of arterial access site in PCI for acute coronary syndromes
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Background: Percutaneous coronary intervention (PCI) is the cornerstone of revascularization in acute coronary syndromes (ACS). The radial artery cathete-