performed. The ED assigned was 7mSv for left cardiac catheterization, 15mSv for percutaneous coronary intervention and 9mSv for myocardial scintigraphy with sestamibi. We also analyzed 196 consecutive exams in April 2013, including left cardiac catheterization and percutaneous coronary intervention, to evaluate absorbed dose in our institution.

Results: A total of 629 pts were included, mean age of 62 ± 11 years. In this cohort, 505 (80%) pts performed at least one cardiac examination with radiation exposure, with a mean of 2.6 ± 2.9 examinations per patient (PP). ED estimation during an average 4.8 ±3.6 years follow-up was 66.1 ±34 mSv, corresponding to 13 ±12 patients mSv/year, due to 0.66 cardiac catheterizations PP, 0.18 coronary interventions PP and 0.53 myocardial scintigraphy PP. Regarding our institution exams, the absorbed doses were the following: 139 cardiac catheterizations (953.68 ± 81.06 mGy) and 57 coronary interventions (1968.46 ±250.41 mGy).

Conclusions: Data from our cohort demonstrates that pts with chronic CAD are exposed to high levels of radiation due to cardiovascular imaging only. Considering advances in this area, increasingly complex procedures performed and the widespread use of screening radiological studies during a lifetime, it will be easy to go beyond recommended limits of radiation exposure. Performance of any diagnostic test or therapeutic procedure requires careful assessment of risks and benefits and optimization of protocols to minimize patients and staff risks.

TCT-330

Determinants of Residual Syntax Score after Primary Percutaneous Coronary Intervention

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Background: The SYNTAX score calculated after percutaneous intervention (PCI), takes into account the residual SYNTAX score (RSS), has been shown to correlate with short- and long-term outcomes in moderate-high risk acute coronary syndrome (ACS) patients. The role of the RSS has not been studied in ST-elevation myocardial infarction (STEMI) populations. Moreover, the completeness of revascularization in the setting of multi-vessel disease in patients undergoing primary PCI (PPCI) is still debated. Our study aim was to determine predictors of RSS using baseline characteristics of patients undergoing PPCI.

Methods: The Montreal Heart Institute STEMI database was used for analyses. Demographic, procedural and clinical data were collected prospectively.

Results: The last 100 consecutive patients undergoing PPCI were selected. Mean patient age was 62.3 ±13.4 years old and patients were predominantly male (80%). The mean tSS was 8.9 ± 6 years follow-up was 66.8 ± 3 years. Males (74%) had similar body mass index (BMI), and body surface area (BSA), than females. There were no gender difference in PCI procedural characteristics (Table 1). The mean RD was 782 ±591 Gycm² and mean RSS was 8.9 ± 5.8. tSS was positively correlated with RD in both genders (Fig 1).

Males received significantly higher RD than females, for PCI of comparable tSS.

Conclusions: Males receive significantly higher RD than females in PCI of similar complexity. Males have greater BSA (but similar BMI) than females, suggesting that anthropometric indices impact on RD.

TCT-332

A study comparing a paclitaxel drug-eluting balloon with a paclitaxel-eluting stent in diabetic patients with small coronary vessels disease; a sub-study of the the BELL0 (Balloon Elution and Late Loss Optimization) Trial

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Background: Small coronary vessels remain a lesion subset in which drug-eluting stent (DES) remain associated with relatively high restenosis rates, especially in diabetic patients. The aim of this study was to evaluate the efficacy of drug-eluting balloons (DEB) compared with paclitaxel-eluting stents (PES) for the reduction of restenosis in diabetic patients with small vessels disease.

Table 1. Characteristics of the study cohort

<table>
<thead>
<tr>
<th>Total</th>
<th>Male</th>
<th>Female</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>420</td>
<td>310 (74)</td>
<td>110 (26)</td>
</tr>
</tbody>
</table>

Baseline characteristics:

<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>65 ±11</th>
<th>64 ±11</th>
<th>66 ±12</th>
<th>0.098</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Mass Index (kg/m²)</td>
<td>29.1 ±5.8</td>
<td>29.1 ±5.7</td>
<td>30.0 ±6.0</td>
<td>0.802</td>
</tr>
<tr>
<td>&lt;25</td>
<td>88 (21)</td>
<td>22 (9.1)</td>
<td>22 (4.1)</td>
<td>0.215</td>
</tr>
<tr>
<td>25-30</td>
<td>172 (41)</td>
<td>27.3 ±1.4</td>
<td>27.2 ±1.4</td>
<td>0.690</td>
</tr>
<tr>
<td>&gt;30</td>
<td>160 (38)</td>
<td>34.3 ±5.7</td>
<td>35.0 ±4.6</td>
<td>0.455</td>
</tr>
<tr>
<td>Body Surface Area (m²)</td>
<td>2.0 ±0.2</td>
<td>2.0 ±0.2</td>
<td>1.8 ±0.2</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Diabetes Mellitus (%)</td>
<td>101 (24)</td>
<td>72 (23)</td>
<td>29 (26)</td>
<td>0.508</td>
</tr>
<tr>
<td>Prior CAG</td>
<td>26 (6)</td>
<td>19 (6)</td>
<td>7 (6)</td>
<td>0.930</td>
</tr>
</tbody>
</table>

Procedural characteristics:

| Target-lesion SS | 8.9 ±5.8 | 8.8 ±6.0 | 9.1 ±5.9 | 0.555 |
| Radiation Dose (Gycm²) | 782 ±591 | 927 ±612 | 718 ±499 | 0.002 |
| No of lesions | 1.24 ±0.5 | 0.50 ±0.03 | 0.48 ±0.05 | 0.774 |

Indication

STEMI | 100 | 76 (25) | 24 (22) | 0.643 |
E elective | 163 | 123 (40) | 40 (36) | 0.540 |
Follow-on PCI | 257 | 187 (60) | 70 (64) | 0.540 |
Fluoroscopy time (min) | 20.2 ±28.9 | 19.0 ±22.1 | 23.6 ±42.7 | 0.161 |
Contrast volume (ml) | 186 ±71 | 187 ±72 | 183 ±67 | 0.617 |
Radial access (%) | 7 (2) | 5 (2) | 2 (2) | 0.885 |
No of stents per procedure | 1.4 ±0.8 | 1.4 ±0.8 | 1.5 ±0.9 | 0.220 |
Total length of stents (mm) | 29.0 ±20.3 | 28.7 ±19.4 | 29.9 ±22.8 | 0.598 |
Cine frame (n) | 33.5 ±12.5 | 33.7 ±12.5 | 32.7 ±12.5 | 0.436 |

Conclusions: Males receive significantly higher RD than females in PCI of similar complexity. Males have greater BSA (but similar BMI) than females, suggesting that anthropometric indices impact on RD.
Methods: BELLO (Balloon Elution and Late Optimization) is a prospective, multicenter trial that randomized 182 patients with lesions located in small vessels to treatment with paclitaxel DEB and provisional bare-metal stenting (n = 90) or PES implantation (n = 92). Seventy-three of the patients had diabetes mellitus; of these 38 were treated with DEB and 36 with PES. We evaluated angiographic in-stent (in-balloon) late loss, angiographic restenosis, target lesion revascularization, and major adverse cardiac events (MACE, death, myocardial infarction, target vessel revascularization) at 6 months in the two groups.

Results: Baseline characteristics were well matched. The reference vessel diameter was 2.15±0.24 and 2.24±0.2 (p=0.069), respectively in patients treated with DEB and PES. The primary endpoint of in-stent (in-balloon) late loss was significantly less with DEB compared with PES (0.05±0.41 mm vs. 0.30±0.51 mm; p=0.033. At 6 months, DEB and PES were associated with similar rates of angiographic restenosis (6.3% vs. 16.1%; p=0.212), target lesion revascularization (5.3% vs. 11.1; p=0.357), and MACE (7.9% vs. 22.2%; p=0.083).

Conclusions: In diabetic patients the treatment of small-vessel disease with a paclitaxel DEB was associated with less angiographic late loss and similar rates of restenosis and revascularization as a PES.

TCT-334
Heart rate reserve for discrimination false negative from true negative result in exercise treadmill test.
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Background: False negative result in exercise treadmill test (ETT) is still problematic to physician due to age, gender, medication, and medical history. The aim of this study was to determine whether the heart rate recovery (HRR) and heart rate reserve (HR reserve) discriminate false negative from true negative result in ETT.
Methods: We enrolled 738 patients to visit to our hospital due to typical chest pain. Patients underwent symptom-limited exercise treadmill testing using modified Bruce protocols and Computer tomography (CT) or coronary angiography (CAG) for evaluation of coronary artery disease (CAD). We calculated the Duke treadmill exercise score (DTES) and divided the patients into low-, intermediate- and high-risk according to DTES. Also, HRR was calculated as maximal HR minus recovery 1 min HR and HR reserve was calculated as (peak HR-supine HR)/(220-age-supine HR).The patients with low risk DTES was divided into two groups according to presence of significant CAD in CT or CAG; true negative (TN) group (645 patients, 55.3±10.7 years) and false negative (FN) group (93 patients, 59.3±8.4 years).

Results: There was higher incidence of male and older in FN group. The HR (34.1±11.5 vs 29.7±11.8, p=0.001) and HR reserve (82.7±18.6 vs 70.8±20.9, p<0.001) in FN group was significantly higher compared to it in TN group. In multivariate logistic analysis, the HR reserve was independent predictor for discrimination FN from TN group after adjustment of age, sex, diabetes, hypertension and medication history like beta blocker and calcium channel blocker, and nitrate. (OR: 0.968, p<0.001) The cutoff value of HR reserve for prediction of FN was 77 with 60.1% of sensitivity and 59.1% of specificity.

Conclusions: The HR reserve might be a useful predictor for discrimination false negative from true negative result in exercise ECG.

TCT-335
Angiographic findings and clinical predictors of coronary artery disease in high-risk, asymptomatic patients undergoing kidney transplantation evaluation.
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1Federal University of Sao Paulo, Sao Paulo, Brazil, 2Federal University of Sao Paulo, Sao Paulo, Brazil, 3Hospital do Rim, Sao Paulo, Brazil, 4Hospital do Rim, Sao Paulo, Brazil, 5Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Brazil

Background: Assessment of surgical risk before kidney transplantation (KT) is challenging due to low sensitivity of non-invasive tests. Coronary angiography (CA) is generally used, at least in high-risk patients, despite its high cost, low availability and associated morbidity. We examined the findings of CA in a retrospective cohort of asymptomatic patients undergoing pre-KT evaluation in a high volume center.

Methods: High-risk patients, defined by one of the following, were analyzed: (1) presence of diabetes mellitus (DM); (2) cerebrovascular disease; (3) ≥3 years of dialysis; (4) ≥3 coronary artery disease (CAD) risk factors. Patients with known CAD were excluded. CA analysis and Duke Jeopardy score were executed by agreement between two interventional cardiologists. Comparison between patients with and without CAD applying multiple regression analysis was performed to identify independent predictors of CAD.

Results: A total of 380 patients with CA performed between Jan/11-Dec/12 were retrospectively analyzed. Mean age was 53±12 years, 64% were male and median time of dialysis was 19 months. Hypertension was present in 93% and 74% had DM. Severe lesions (>70% stenosis by visual estimation) were found in 39%; among those, 54% had multivessel disease. However, high-risk anatomy was not frequent (multivessel disease including proximal LAD = 22%; left main >50% stenosis = 5%; at least one chronic total occlusion = 18%). Duke score was 1.4 ± 1.8 (median = 1). After diagnosis, 73 patients underwent revascularization. The only predictors of CAD were age (OR = 1.040, 95% CI = 1.015, 1.065, p <0.001) and hyperlipidemia (OR = 1.614, 95% CI = [1.00, 2.605], p = 0.050). Complications associated to CA occurred in 1/3 of cases.

Conclusions: CA as screening is safe. Even though one third of patients showed severe CAD, anatomy related to surgical high-risk as left main/proximal LAD/ multivessel disease were less common and Duke score was low. Decision to perform CA before KT can be improved by a better combination of risk factors, especially considering the lack of evidence favoring preventive revascularization.