information, forecasts and has proven to be a superior method. Risk according to the units obtained with the total calcium score are well established; however it's possible use this tool in each one of the coronary arteries as a predictor of abnormalities of perfusion in the territory of the same.
**Purpose:** Evaluate the correlation between calcium score of each coronary artery and perfusion abnormalities at their territory with 13N-ammonia PET CT.
**Methods:** 67 patients referred to PET-CT Unit of the Faculty of Medicine, on suspicion of ischemic heart disease. We made them 13N–ammonia; rest-stress myocardial perfusion study using adenosine, and simple tomography study for the quantification of coronary calcium. Classifying patients into low, intermediate and high risk. Perfusion was evaluated by two experts in cardiovascular imaging and nuclear cardiology, classifying them in mild, moderate and severe ischemia, as well as territories of the coronary arteries.
**Results:** Average age 63 years ± 10, 40% women, 63% hypertension, 56% high cholesterol, 21% diabetes mellitus, 63% smokers. 52.7% were classified as low-risk by total calcium Score, 55 % of them presented abnormalities on myocardial perfusion, of whom 75% were moderate to severe ischemia. 25.5% at intermediate risk of which 35% presented abnormalities on myocardial perfusion, corresponding 80% moderate to severe, 21.8% was considered high risk, 75% of these presented abnormalities on myocardial perfusion and 78% were for severe ischemia. Artery calcium score average was 223.5 U anterior descending, 78.6 U circumflex and 100.6 U in right coronary artery, with abnormalities of myocardial perfusion in territory of anterior descending by 27%, in territory of circumflex 6% and right coronary artery 60%. The Pearson's correlation coefficient between these values was r =0.34, however the value of P was 0.0046.
**Conclusions:** The total calcium score, has already well described prognostic value, however there is a correlation between the calcium score from each of the coronary arteries and perfusion defects of their territories, so it could be used as a predictor of ischemia blood territory, even with a low total score calcium. The PET CT allows to use the calcium score as a tool that increases the diagnostic certainty perfusion with 13N-ammonia.

## P159

### A new relational database including clinical data and myocardial perfusion imaging findings in subjects with suspected or known coronary artery disease

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**Background:** Stress myocardial perfusion imaging (MPI) provides prognostic information for clinical decision-making in subjects with suspected or known coronary artery disease (CAD)
**Purpose:** The aim of this study was to test a relational database including clinical and imaging data of subjects with suspected or known CAD undergoing stress MPI between Jan. 2002 and Dec. 2014 and to assess the impact of age and gender on MPI findings
**Materials and Methods:** We developed a relational database (PostgreSQL 9.2) including the clinical and imaging data of 7563 subjects. Databases included: anamnesis informations; other clinical and instrumental (e.g. ECG, echocardiography) features; pre-test likelihood of disease by Cadenza; post-processing MPI results; follow-up information. Data were arranged according to a logic of aggregation and stored in 12 tables. Epidemiological statistics analysis was performed using R statistical software
**Results:** Of the overall study population, 68% were male and 32% female. Abnormal findings were observed in 46% of male subjects showing 35% fixed defect, 32% reversible defects and 33% mixed perfusion defects. In female subjects, 19% showed MPI abnormal findings, of these 29% with fixed, 43% with reversible and 28% with mixed perfusion defects. The number of test performed increased from 198 to 689 (slope±std=44.4±7.3, $p<0.001$), with an almost steady proportion between male and female gender (67% vs. 33%, in average); only in female gender we found a cyclical trend (7 years, peak to peak, in 2005 and 2012) relative to positive findings (from 14% to 25%), while no significant trend was detectable in the different perfusion defect patterns. We divided the study population in six sub-cohort stratified by age (<55; 55-59; 60-64; 65-69; 70-74; ≥75 years), founding an incremental number of abnormal MPI from 32% to 42% (slope±std=1.92±0.23, p=0.001) in female gender; also in this case no significant trend was detectable in the different perfusion defect patterns. Of the 4344 subjects with no history of CAD, 19% showed abnormal findings with a higher prevalence in male as compared to female subjects (25% and 12%, respectively, $p < 0.001$); in both male and female subjects, the prevalence of reversible perfusion defects was high (66% and 67%, respectively). In 3219 CAD subjects a high number (61%) of abnormal findings were observed with a higher prevalence in male as compared to female subjects (64% and 47%, respectively, $p < 0.001$); in both male and female subjects a high incidence of fixed (42% and 37%, respectively) or mixed (38% and 41%, respectively) myocardial perfusion defects was observed
**Conclusions:** No problem was encountered to connect to the database and for query/retrieve. Our results indicate a high prevalence of abnormal MPI findings in male gender for both suspected and known CAD. In female gender, stratifying by age, a significant trend for abnormal findings during each year was detectable

## P160

### Feasibility study using Regadenoson as a stressor agent in conjuction with Gated SPECT MPI- One center experience

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**Purpose:** To assess the safety and the tolerability of the first selective A2A receptor agonist, Regadenoson, in 200 patients (pts) who were referred to the Nuclear Medicine Department for Single photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) using Tc-99m Sestamibi.
**Methods and Results:** Two hundred pts (122 male and 78 female) underwent Gated SPECT-MPI using Tc-99m sestamibi from September to November 2016 after bolus administration of 400 μgr as a stressor agent. Hemodynamic parameters were recorded before, during, and after administration of the Regadenoson as well the side effects (SE). The mean age of pts was 67±10 years. Eighty pts had history of coronary artery disease. All pts had left ventricle ejection fraction >40% , 2 pts with history of asthma, 4 pts of chronic obstructive pulmonary disease without bronchospasm, and 3 pts with renal failure. Medical intervention was required only in 4 pts , (in 2 pts use of oxygen distribution , 1 pt defribillated and in 1pt use of administration of aminophylline)
Systolic blood pressure was decreased in 136 pts and increased in 64 pts. The mean heart rate increase was 28% (from 69 to 96 bpm), in 25 pts the increase was >40% compared to the baseline and in 42 pts <20% . Symptoms during Regadenoson were recorded in most pts as mild dyspnea in 52 %, gastrointestinal discomfort in 28 %, flushing in 21.5%, arrhythmias in 21.5%, chest discomfort in 20.5 % pts, headache in 18.5%, , ST changes in 12%, dry mouth or metallic taste in 2%. Less common SE as fatigue, nausea, dizziness were identified only in few pts. No other serious SE of the drug were observed.
**Conclusion:** The use of Regadenoson as a stress agent in conjuction with SPECT MPI appears to be safe, feasible and a well tolerated stress test without significant cardiovascular SE.

## P161

### Patients with thin left atrial wall thickness have a risk of severe left atrial volume reduction after atrial fibrillation ablation

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**Background & objectives:** Decreases left atrial (LA) size and volumes after atrial fibillation (AF) ablation affected LA reverse remodeling. However, this change adversely affected LA diastolic dysfunction in some patients. Previous studies showed that LA volume reduction and LA stiffness was associated with LA diastolic dysfunction. However, the risk predictor of severe LA volume reduction after RFCA of AF was not known. We hypothesized that AF patients with severe LA reduction after radiofrequency catheter ablation (RFCA) have different phenotype.
**Methods:** Total 77 patients with AF or AT recurrence were respectively enrolled. They underwent 3D cardiac computed tomography (CT) before first and second ablation. We divided patients into two groups; one with LA volume decrease more than or equal to 20ml after RFCA and the other with LA volume decrease less than 20ml. Before RFCA, we evaluated cardiac function parameter like as left ventricular ejection fraction, left ventricular end systolic and diastolic diameter, heart rate before ablation, pulmonary artery pressure, and LA wall thickness. We used different eleven LA wall points (thee points [right, mid and left] of roof, thee points [right, mid and left] of posterior wall, thee points [right, mid and left] of inferior wall, peri-mitral wall and ridge between left pulmonary vein and left atrial appendage) for calculating mean LA wall thickness.
**Results:** On baseline charateristics, the distribution of paroxysmal AF, persistent AF and long standing persistent AF was 42.9% (33 of 77), 10.4% (8 of 77) and 46.8% (36 of 77). In 77 patients, 44 patients (57.1%, group 1) had the severe LA volume reduction more than or equal to 20ml after RFCA. 33 patients (42.9%, group 2) did less than 20ml.
Cardiac function parameter of group 1 was better than group 2. As Left ventricular ejection fraction (LVEF) (57.8% versus 54.6%, p=0.054) was higher in group 1 than in group 2. Left ventricular end diastolic diameter (LVEDD) (48.1mm versus 50.4mm, p=0.046) and left ventricular end systolic diameter (LVESD) (29.5mm versus 32.7mm, p=0.011) was smaller in group 1 than in group 2. Heart rate before ablation (68.4bpm versus 72.8bpm, p=0.031) and pulmonary artery (PA) pressure (28.9mmHg versus 32.6mmHg, p=0.031) was lower in group 1 than in group 2.
Changes of LA shape after first RFCA in group 1 was various. Most changes were LA wall curvatures from convex to concave (Figure 1). Of note, LA mean wall thickness was relatively thinner in group 1 than group 2 (2.78mm versus 3.12mm, p<0.001). CFAE guided ablation of LA and RA was performed higher in group 1 than group 2 (LA CFAE 58.3% versus 41.7% p=0.816, RA CFAE 51.6% versus 48.4% p=0.485).
**Conclusion:** AF patients with severe LA volume reduction after RFCA have a different phenotype; small LV chamber size, lower heart rate, lower PA pressure and especially thin LA wall thickness. Thin LA wall thickness is a risk of severe LA volume after RFCA.