Background: Inflammation in carotid atherosclerotic plaques poses an increased risk for recent and subsequent ischemic stroke. Microwave Radiometry (MWR) allows the in vivo noninvasive assessment of carotid atherosclerotic plaque temperatures that reflect their inflammatory status. The aim of the present study was to evaluate the role of carotid plaque inflammatory status, as assessed by MWR, in the pathogenesis of acute ischemic stroke.

Methods: Consecutive patients (n = 30) with acute nondiabetic atherosclerotic peripheral circulation ischemic stroke and bilateral carotid artery disease (symptomatic group) and 15 patients with asymptomatic bilateral carotid artery plaques (asymptomatic group) were included in the study. Carotid artery disease was defined as intima-media thickening (IMT) > 1.2 mm in carotid ultrasound. Stenosis severity was evaluated according to appropriate Doppler criteria. During MR measurements, temperature difference (ΔT) was assigned as maximal temperature along the carotid artery minus minimum. Results: Carotid arteries of patients in symptomatic group had higher ΔT values, compared to carotid arteries of patients in asymptomatic group (0.97 ± 0.16 vs 0.29 ± 0.04°C, p < 0.001). The two patient groups exhibited similar carotid artery stenosis (52.78 ± 32.30 vs 38.33 ± 13.97%, p = 0.11). Culprit carotid atherosclerotic plaques exhibited higher ΔT and IMT values, compared to nonculprit contralateral carotid plaques (0.96 ± 0.63 vs 0.53 ± 0.26/C, p = 0.001 and 3.35 ± 2.01 vs 2.05 ± 0.88 mm, p = 0.006, respectively). On the contrary, carotid plaques of asymptomatic group had similar ΔT and IMT values bilaterally (0.24 ± 0.06 vs 0.25 ± 0.07°C, p = 0.82 and 2.03 ± 0.56 vs 2.34 ± 0.81 mm, p = 0.20, respectively).

Conclusions: Symptomatic carotid arteries in patients with recent ischemic stroke exhibit higher inflammation, as assessed by MR, compared with asymptomatic patients with carotid atherosclerosis. The role, however, of this new method, in stratification of the risk of patients with intermediate carotid stenosis for ischemic stroke, needs to be evaluated in large prospective studies.

TCT-295
Temporal Evolution Of Coronary Vasomotor Function In Infarcted And Remote Myocardium Following Percutaneous Coronary Intervention For Acute Myocardial Infarction – A H2 15O PET Study
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Background: In patients with acute myocardial infarction (AMI), coronary vasomotor function is not only impaired in the myocardial territory supplied by the culprit-artery but also in remote myocardium supplied by adjacent coronary arteries. The aim was to investigate the temporal evolution of coronary vasodilatory reserve in patients with AMI by use of H2 15O PET, after successful percutaneous coronary intervention (PCI).

Methods: Forty-four patients with AMI and successful revascularization by PCI were included (i.e. TIMI II or III flow after coronary stenting). Subjects were examined once a week and three months after AMI with H2 15O PET to assess the coronary flow reserve (CFR). CFR was defined as the ratio of myocardial blood flow during hyperemia (0.6 ml/min/g) to rest (0.35 ml/min/g). Additionally, 45 age and sex matched subjects without a prior cardiac history underwent similar scanning procedures and served as a control group.

Results: At baseline, CFR averaged 1.77 ± 0.63 in infarcted myocardium versus 2.41 ± 0.79 in remote myocardium (p < 0.001). In comparison, CFR in the control group averaged 4.16 ± 1.45 p (p = 0.001 versus both). During follow-up, the CFR increased from 1.77 ± 0.63 to 2.75 ± 0.89 in infarcted myocardium (p = 0.001), and from 2.41 ± 0.79 to 2.85 ± 0.75 in remote myocardium (p = 0.001). This was predominantly due to an increase in MBF, from 1.64 ± 0.54 to 2.19 ± 0.74 ml/min/g in infarcted myocardium (p < 0.001), and 2.20 ± 0.56 to 2.61 ± 0.65 ml/min/g in remote myocardium (p = 0.001).

Conclusions: Coronary vasodilatory reserve is impaired in both ischemic and remote myocardium following PCI, and following successful revascularization, the coronary vasodilatory reserve significantly improved in both regions. As a consequence, these early and late post-infarct alterations in remote myocardium may also affect temporal infarct evolution and recovery of left ventricular function.

TCT-296
Routine Screening Of Coronary Artery Disease With Computed Tomography Coronary Angiography In Place Of Invasive Coronary Angiography In Patients Undergoing Transcatheter Aortic Valve Implantation
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Background: Coronary artery disease (CAD) screening is required prior to transcatheter aortic valve implantation (TAVI). Although coronary angiography (CA) remains the gold standard for CAD assessment, computed tomography coronary angiography (CTCA) could be a safe and effective non-invasive alternative. The aim of this study was to evaluate the use of computed tomography coronary angiography (CTCA) in place of invasive coronary angiography (CA) for coronary artery disease (CAD) screening in patients referred for transcatheter aortic valve implantation (TAVI).

Methods: From November 2007 to May 2013 all patients undergoing TAVI at our Institution were included in the study cohort. CTCA was used as first-line imaging tool for preoperative CAD screening. invasive CA was only performed when any of the following were present: extensive coronary calcifications or moving artefacts not allowing proper coronary anatomy evaluation, CTCA, presence of significant CAD at CTCA and contraindications to CTCA. Outcomes were assessed according to the valvular academic research consortium (VARC-2) criteria at 30 days and 1 year.

Results: Out of 525 patients that were treated with TAVI, 482/525 (91.8%) underwent Cardiac CT/CTCA. Among these, 36/482 (75.3%) performed only CTCA (Group A) while 119/482 (24.6%) underwent also CA (Group B). Only 46 (8.7%) performed CA alone (Group C). Incidence of major cardiac complications such as myocardial infarction, aortic dissection and cardiac tamponade was similar among groups. Higher incidence of coronary obstruction (6%, 0.8% and 2.3%), acute kidney injury (25.4%, 32.7% and 33%), life-threatening (15.9%, 19.3% and 30.2%) and major bleeding (21.2%, 28.5% and 35%) was found in Group C. Results: Cardiac CT/CTCA performed as a routine non-invasive imaging tool in patients undergoing TAVI appears safe and effective allowing, with a single test, acquisition of information on aortic annulus anatomy, peripheral access sites and evaluation of coronary anatomy.

TCT-297
CT in congenital heart disease: Novel Technique for Evaluation the biventricular pulmonary shunt
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Background: Patients with complex congenital heart diseases require multiple surgeries. Biventricular pulmonary shunt (Glenn and Fontan) can improve life expectancy. Sometimes dyspnea, cyanosis and severe desaturation become symptoms of significant dysfunction. Multislice computed tomography is has been more frequently utilized in patients who underwent this surgery but indications and acquisition protocol are still not clear.

Methods: We evaluated 14 patients with antecedents of Biventricular pulmonary shunt since 2010 to 2014. The median age was 12.8 Y/0. We used a 64 detectors CT scan Philips Medical Systems. All the patients were placed two IV line: one in a right arm and other in the leg. Infusion rates of media contrast varies depends IV line gauches (2.0 to 3.5 ml/sec). The acquisition set was divided in two: first the upper torax (Subclavian until 2 cm below Carina) to visualize Glenn anastomosis and second the inferior part (2 cm below diaphragm until Carina) to visualize the extracardiac conduit. Contrast media used was 2.36 ± 0.8 ml/Kg. With these double acquisition we tried to decrease the total radiation dose. The protocols used were done with retrospective gating reducing de mA/depends patient weight. In one procedure we can see Glenn and Fontan anatomy and function.

Results: All the studies were done without complications. We observe 7 patients with open fenestration, in one of them closure device was displaced into the atrium. In 6 patients fenestration was closed spontaneously by thrombus and calcium. In one patient anomalous suprahepatic veins drain direct in the atrium. In 2 patients venovenous fistula was detected in Azigos vein territory. 1 pte has stenting the extracardiac conduit and stent was patent. In 3 patients aorto-pulmonary collateral vessels were detected. Mean radiation dose was 7.8 mSv.

Conclusions: This acquisition technique is safe. It’s very important to perform the injection of contrast from inferior limb IV line to acquire best Fontan images. It can be perform in centers with trained personnel. Radiation dose and contrast media used was acceptable. Diagnostic accuracy is high and allows therapeutic decisions. More experience is needed in large patients series.

TCT-298
Predictive value of Carotid Inflammation for the Presence of Multivessel Coronary Artery Disease
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Background: Ultrasound evaluation of carotid artery plaques has incremental value for the prediction of the presence of coronary artery disease (CAD). However, it does not provide information regarding the functional properties of carotid atherosclerotic. Microwave Radiometry (MWR), a new noninvasive method,