METHODS Cystatin C was measured in 4322 participants with no prior history of CHD or stoke. The primary outcome was a composite of incident CHD and stroke. Incident CHD included myocardial infarction, fatal CHD, and cardiac procedure. Incident stroke included definite and probable cases, as well as out-of-hospital deaths with a stroke code. Cox regression was used to estimate hazard ratios (HRs) for incident events, adjusting for age, sex, smoking status, education level, HDL-cholesterol, LDL-cholesterol, total cholesterol, HbA1c, high-sensitivity CRP, estimated glomerular filtration rate (eGFR), body mass index (BMI), waist circumference, systolic blood pressure, physical activity, use of antihypertensive medication, statin use, diabetes status.

RESULTS Over a median duration of follow up of 7.2 years, there were 148 incident CHD events and 103 incident stroke events. HR for composite outcome was 1.11 (95% CI 1.07 - 1.14) in the unadjusted model. This risk was reduced after adjusting for demographic and clinical factors (HR 1.09, 95%CI: 1.03 - 1.12), and eGFR (HR 1.08, 95% CI: 1.02 -1.16). When considered separately, the results for CHD and Stroke paralleled those for the composite outcome. Sex-stratified analysis showed the association to be stronger in men (HR 1.85, 95% CI: 1.20 - 2.85) than in women (HR 1.08, 95% CI: 0.98 - 1.20), and absent in women after full adjustment.

CONCLUSION African American men with higher baseline Cystatin C levels are at increased risk of developing CHD and stroke when compared to women.

CATEGORIES CORONARY: Acute Myocardial Infarction

VASCULAR ACCESS AND CLOSURE

Abstract nos: 193 - 197

TCT-193

Effect of access site on silent cerebral infarct in patients undergoing coronary angiography and intervention as detected with neuron specific enolase

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BACKGROUND Elevation of NSE in the absence of any clinically apparent stroke or transient ischemic attack, so called silent cerebral infarcts (SCIs), may be associated with neurological disorders and mortality. Silent cerebral damage occur during cardiac procedures with a frequency of 15 to 22%. We aimed to investigate elevation of NSE after cardiac procedures on the prediction of silent cerebral infarct to compare the effect of the arterial access site.

METHODS Patients scheduled for elective PCI and coronary angiography from transfemoral and transradial access site were assessed for SCI. Study population consisted of two groups of patients: Group 1 included 126 consecutive patients with transfemoral access, whereas Group 2 consisted of 129 patients with transradial access. NSE levels were studied before and 12 hour after the procedure.Elevation of greater than 0.12µg/l was considered as SCI.

RESULTS Seventy-four of 255 study patients (29%) had SCI after the procedure. NSE elevation was significantly more prevalant among patients with transradial access than transfemoral aproach (36% in the transradial patients (n=47) versus 21% in the transfemoral patients (n=27), p=0.008).When patients were divided into 2 groups according to SCI occurance, patients with SCI were more likely to have hyperlipidemia, history of smoking and prior myocardial infarction (Table). Multivariate analysis demonstrated history of smoking status (OR:0.186; 95% CI:0.094-0.369; p<0.001), prior MI (OR:0.141; 95% CI: 0.064-0.310; p<0.001) and access site (OR:0.405; 95% CI: 0.209-0.785; p = 0.007) as independent predictors of SCI.

Variable	Silent cerebral infarct (+) (n=74)	Silent cerebral infarct (-) (n=181)	P value
Age, mean ± SD, (years)	60±10	62±10	0.09
Male	54(73%)	98(54%)	0.005
Hypertansion	54 (73%)	130 (72%)	0.9
Diabetes Mellitus	22 (30%)	71 (39%)	0.2
Smoker	38(51%)	23(13%)	<0.001
Hyperlipidemia	49(66%)	92(51%)	0.03
Prior myocardial infarction	31 (42%)	14(8%)	<0.001
Prior coronary bypass	10 (14%)	13 (7%)	0.1
PCI	48(65%)	78(43%)	0.002

CONCLUSION In our study, transradial catheterization is associated with a significant increase in silent cerebral infarct detected with neuron specific enolase compared to transfemoral catheterization. The risk of silent cerebral injury during coronary procedures may be related to the vascular access site. Increased recognition of SCIs may facilitate preventing their occurrence and decrease the risk of adverse neurological outcomes.

CATEGORIES ENDOVASCULAR: Stroke and Stroke Prevention

TCT-194

Vascular Closure Devices are Associated with Lower Risk of Access Site Complications in High Risk Patients: The Utility of Risk Calculator

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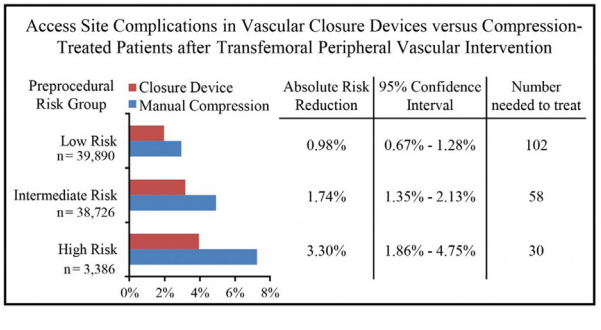
BACKGROUND Access site complications (ASC) after peripheral vascular interventions (PVI) are associated with prolonged hospitalization and increased mortality. The association between the use of vascular closure devices (VCDs) and ASC as a function of a patient's preprocedural risk of complication is unknown. Our aim was to determine the use of VCD and associated post-PVI ASC in a nationally representative PVI population.

METHODS The Society for Vascular Surgery's Vascular Quality Initiative database yielded 82,476 patients who underwent transfemoral PVI at 207 North American centers from April 2010 to May 2016. A previously validated risk tool was used to stratify patients according to preprocedural risk for post-PVI ASC. The primary endpoint was post-PVI ASC prior to hospital discharge.

RESULTS ASC occurred in 3.3% of patients (n=2733 patients). VCD were used more commonly than manual compression (53.0% vs. 47.0%; p<0.001). VCD were used less often in high-risk patients than those at intermediate risk (49.2% vs 51.4%, p=0.012) and those at low risk (49.2% vs 55.0% to low-risk patients, p<0.001). ASC were lower among patients receiving VCD in the low risk (1.96% vs 2.94%, p<0.001), intermediate (3.18% vs 4.91%, p<0.001) and high risk groups (3.95% vs 7.25%, p<0.001).



CONCLUSION In a large multicenter PVI registry VCDs were associated with lower ASC rates, especially among patients at greatest risk for complications. However, these devices were less often used

among higher-risk patients. This risk-treatment paradox may be reversed by routine preprocedural patient risk stratification to individualize VCD use.

CATEGORIES ENDOVASCULAR: Peripheral Vascular Disease and Intervention

TCT-195

Real Time Ultrasound-Guided Venous Access of the Arm for Right Heart Catheterization

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BACKGROUND With the increased use of transradial access (TRA) for cardiac catheterization (CC), reliable venous access for right heart cath (RHC) from the arm is necessary to allow both arterial and venous access from the arm, to minimize crossover to a femoral or jugular vein. Limited data exists on the role of real time ultrasound-guided venous access of the arm (UGVAA) for RHC.

METHODS Patients undergoing RHC at a single center by two 'radial first' operators who use ultrasound guidance for vascular access were identified from August 2015 to July 2016. Medical records were retrospectively reviewed.

RESULTS 267 consecutive RHCs were performed using 5 Fr (25.5%) and 6 Fr (74.5%) sheaths. 253 (94.8%) were performed through an arm vein, of which 3 used a pre-existing IV catheter for access. The other 250 had a 100% success rate of venous access sheath insertion in the cath lab. UGVAA was used in 241 of these 250 (96.4%) patients, and not documented, but most likely used, in 9 (3.6%) patients. RHC via the arm vein was successful in 248 (98%) patients and failed in 5 (2%) cases. Reasons for RHC failure in these 5 cases were: 1) Friction in the left subclavian vein from ICD wires; 2) Left subclavian vein thrombosis from previous ICD placement; 3) Difficulty in maneuvering the catheter; 4) Inability to advance a catheter from the right ventricle into the pulmonary artery; and 5) Kinked sheath requiring crossover to the femoral vein. The femoral approach was used in 13 (4.9%) patients, of which 11 used the femoral vein as the primary access site with concomitant radial artery access, 1 had a pre-existing femoral venous sheath, and 1 was switched to the femoral vein from unsuccessful arm attempts. The remaining 1 patient had a jugular approach to leave a triple lumen catheter in place. All patients had concomitant left heart catheterization, of which 24 (9%) patients had a simultaneous coronary interventional procedure.

CONCLUSION UGVAA was a highly efficacious and safe method for RHC in this retrospective study, with a success rate of 98% in 253 consecutive patents. UGVAA may allow avoidance of femoral or jugular venous access in almost all patients when TRA is used and RHC is needed.

CATEGORIES OTHER: Vascular Access

TCT-196

Outcomes of Radial Compared with Femoral Artery Access in Patients Undergoing PCI for Left Main Disease: Analysis from the EXCEL Trial

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BACKGROUND Use of transradial access (TRA) for PCI is increasing; however, there is a paucity of data regarding outcomes after PCI with TRA compared to transfemoral access (TFA) in pts with left main coronary artery coronary artery disease (LMCAD).

METHODS The EXCEL trial randomized 1905 pts with LM disease and low or intermediate SYNTAX scores to PCI with fluoropolymer-based cobalt-chromium everolimus-eluting stents vs. CABG. We compared outcomes of pts undergoing PCI with TRA vs. TFA using multivariable Cox proportional hazards regression and linear regression. The primary endpoint was a composite of death, MI, or stroke at 3 years.

RESULTS PCI was performed exclusively with TRA in 248 (26.6%) pts and TFA in 683 (73.4%) pts. TRA was used in 20/272 (7.4%) and 228/659 (34.6%) PCI pts enrolled in and outside the US, respectively ($p<0.0001$). Pts in the TRA group were younger and less likely to have hypertension and chronic kidney disease. The mean syntax score was similar in both groups. The average number of vessels and lesions treated as well as the number of stents per pt were higher in the TFA group. Procedural contrast use was less with TRA compared to TFA (231.1 ± 110.3 vs. 272.3 ± 131.0 mL, adjusted mean difference -43.1 mL, $p=0.0001$), although procedural times (adjusted mean difference -5.5 min, $p=0.11$) and radiation dose (adjusted mean difference -0.05 Gy, $p=0.45$) were similar between groups. Pts undergoing TRA compared to TFA had similar rates of in-hospital TIMI major or minor bleeding (4.2% vs. 5.8%, adjusted HR 0.68, 95% CI [0.33 to 1.4] $p=0.31$). The 3-year rates of the primary endpoint were similar for PCI with TRA vs. TFA (16.6% vs 14.7%, adjusted HR 1.19, 95% CI 0.77-1.82, $p=0.43$). There were no significant differences between TRA and TFA in the component rates of the primary endpoint or ischemia-driven revascularization (10.8% vs 13.2%, adjusted HR 1.05 95% CI [0.64 to 1.73] $p=0.83$).

CONCLUSION In the EXCEL trial, PCI of LMCAD with TRA and TFA were associated with similar 3-year clinical outcomes.

CATEGORIES OTHER: Vascular Access

TCT-197

Ultrasound-guided Antecubital Vein Approach for Right Heart Catheterization in a Brazilian Tertiary Center

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BACKGROUND Data regarding safety and feasibility of right heart catheterizations (RHC) through antecubital vein approach is heterogeneous and scarce. Moreover, forearm venous access acquisition under ultrasound guidance has not been specifically evaluated in this scenario.

METHODS In order to evaluate success rate and radiation exposure of RHC through antecubital vein approach, data from consecutive RHC performed at our center between January 2014 and March 2017 were collected. Demographic data and procedural outcomes were compared between patient groups defined by venous access site.

RESULTS In the period, 310 RHC were performed (antecubital vein approach, n=127; femoral vein approach, n=152; jugular vein approach, n=31). There were 129 combined right and left heart catheterizations (LHC): antecubital vein/radial artery approach, n= 57; femoral vein/femoral artery approach, n= 72. Pulmonary hypertension and heart failure were the main indications for both single and combined procedures. Antecubital vein approach success rate was 92.1%. In RHC only procedures (Figure 1A), both antecubital and jugular vein approaches reduced radiation dose, in comparison to femoral vein approach: 43 Gy.cm^2 [21.5;113.5], 97 Gy.cm^2 [18;165] and 209 Gy.cm^2 [129;371], respectively ($p<0.001$). In combined RHC and LHC (Figure 1B), antecubital vein approach also reduced radiation dose, in comparison to femoral vein approach: 299 Gy.cm^2 [158;507] and 516 Gy.cm^2 [286;745], respectively ($p=0.005$).