

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 patients. 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 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<sup>2</sup> [21.5;113.5], 97 Gy.cm<sup>2</sup> [18;165] and 209 Gy.cm<sup>2</sup> [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<sup>2</sup> [158;507] and 516 Gy.cm<sup>2</sup> [286;745], respectively (p=0.005).