Factors affecting procedure time between elective and primary percutaneous coronary intervention using transradial approach

Young Jin Youn1, Ji Hyun Lee2, Jan-Won Lee3, Sung Gyun Ahn4, Junghahn Yoon4
1Yonsei University Wonju College of Medicine, Wonju, Korea, Republic of

Background: Recent efforts to reduce time delay in ST-elevation myocardial infarction (STEMI) have decreased door-to-balloon time. But, it is not clear whether transradial percutaneous coronary intervention (PCI) can reduce procedure time compared to elective PCI. Therefore, we tried to compare the procedure time and factors affecting procedure time according to primary vs. elective PCI using transradial approach.

Methods: In a single center from Jan 2011 to Dec 2012, 1252 patients undergoing transradial PCI were enrolled. The main inclusion criteria were: Chronic total occlusion or transfemoral PCI were excluded. Patients were divided into 2 groups (primary vs. elective). Five operators were reclassified as radial expert or radial non-expert according to the median procedural time. Factors affecting procedure time were analyzed in the highest quartile of total procedural time.

Results: The use of left radial artery was 1203 (96.1%). Mean age was 65.2±11.2 years and 855 patients (68.3%) were men. Primary PCI group was younger and had more male patients. Elective group had more hypertension, diabetes mellitus, hyperlipidemia and history of previous PCI. Elective PCI group was treated with more stents but the frequency of multivessel PCI was not different. Puncture time, time for diagnostic coronary angiography, coronary intervention time and total procedure time were faster in primary PCI group (1.2±0.9 vs. 1.7±2.5, 6.1±3.7 vs. 8.9±6.0, 35.0±16.5 vs. 43.7±22; 42.3±17.0 vs. 54.3±23.3 mins, all p< 0.001). In univariate regression analysis, the predictors for affecting total procedure time were radial expert (odds ratio [OR] 0.679, 95% confidence interval [CI] 0.522-0.884), STEMI (OR 0.265, 95% CI 0.175-0.402), multivessel PCI (OR 5.019, 95% CI 3.703-6.804) and aspiration thrombectomy (OR 0.557, 95% CI 0.397-0.782). Multivessel PCI was the only predictor in multivariate regression analysis (OR 6.169, 95% CI 2.343-16.240).

Conclusions: In a single center experience, transradial primary PCI showed shorter puncture time, time for diagnostic coronary angiography, intervention time and total procedure time than elective PCI. Radial expert and STEMI were the predictors for shortening procedure time in univariate regression analysis.
Radial access in the very elderly

TCT-837
Incidence and Predictors of Procedural Difficulty in Transradial Coronary Angiography
Shunuke Aoi1, Naoki Misumida1, Tomo Ando1, John T. Fox1, Yumiko Kaneko1
1Mount Sinai Beth Israel Medical Center, New York, NY

Background: The incidence of procedural difficulty in trans-radial coronary angiography (TR-CA) has not been well described in the US practice, and the impact of ethnic diversity has not been explored. The objective of this study is to identify the incidence and predictors of procedural difficulty in TR-CA in our diverse population.

Methods: We retrospectively reviewed consecutive 1,824 patients who underwent diagnostic coronary angiography from April 2013 to September 2013. Ad-hoc coronary intervention was performed at the discretion of the operator. Elective coronary intervention cases were excluded. Procedural difficulty was defined as requiring (1) access site crossover, (2) more than 2 catheters, or (3) fluoroscopy time more than 10 minutes to complete coronary angiography. Baseline clinical variables and procedure details were reviewed, and multivariate analyses were performed to determine independent predictors of procedural difficulty in TR-CA.

Results: Of the total of 1,824 patients, TR-CA accounted for 1,314 patients (72%). After excluded 78 due to missing data, 1,236 patients were included in the final analysis. Baseline characteristics were mean age of 64 years old, 58% were male, and large ethnic diversity was observed: 28% White, 28% Asian, 25% Hispanic and 18% African American. Procedural difficulty was observed in 321 patients (26.0%), of which access site crossover accounted for 82 (6.6%) and multiple catheter use or increased fluoroscopy time were observed in 239 (19.3%). On multivariate analysis, procedural difficulty was independently associated with age above 70 (odds ratio [OR] 1.44, 95% confidence interval [CI] 1.09 to 1.90; p=0.011), female gender (OR 1.38; 95% CI 1.06 to 1.80; p=0.018), hyperlipidemia (OR 1.47; 95% CI 1.12 to 1.93; p=0.006) and non-African American ethnicity (OR 2.38; 95% CI 1.67 to 3.38; p<0.001). Neither BMI or height were statistically significant in predicting procedural difficulty.

Conclusion: The incidence of procedural difficulty in TR-CA was 26.0%, and independent predictors were age above 70, female gender, hyperlipidemia, and non-Asian ethnicity.

Vascular Access and Intervention - Femoral (includes closure devices)

Washington Convention Center, Lower Level, Hall A
Saturday, September 13, 2014, 5:00 PM-7:00 PM

Abstract nos: 840-851

TCT-840
Gender Specific Analysis Of The Randomized ISAR-CLOSURE Trial: The Comparison of Vascular Closure Devices Versus Manual Compression After Femoral Artery Puncture

Sandra Hedel1, Senta Gravel1, Tareq Ibrahim1, Roland Schmidt1, Andreas Stein1, Katharina Haas1, Philipp Grohs1, Ilka Ott1, Robert Byrne1, Tanja Mornach1, Sebastian Kufner1, Salvatore Cassese1, Petra Hoppmann2, Massimiliano Fusaro1, Julinda Mehilli1, Heribert Schunkert1, Karl-Ludwig Laugwitz1, Stefanie Schulz1, Sebastian Kufner1, Salvatore Cassese1, Petra Hoppmann2, Massimiliano Fusaro1, Julinda Mehilli1, Heribert Schunkert1, Karl-Ludwig Laugwitz1, Stefanie Schulz1
1Klinikum rechts der Isar, Munich, Germany, 2Klinikum der Universität München, Medizinische Klinik und Poliklinik I, LMU, Munich, Germany

Background: Access site complications are common in patients undergoing transcatheter coronary intervention. In the ISAR-CLOSURE trial, the primary end point was the incidence of access site events at 30 days in patients undergoing transfemoral coronary artery stenting. Women have a higher rate of access site complications than men. Therefore, we aimed to perform a gender-specific analysis of the ISAR-CLOSURE trial.

Methods: This study included patients undergoing percutaneous coronary interventions with a radialartery access in the ISAR-CLOSURE trial. The primary end point for this analysis was the incidence of access site complications at 30 days, categorized as access site hematoma, hematocele, pseudoaneurysm, arteriovenous fistula, and vascular perforation.

Results: A total of 3856 patients were included in this analysis: 71% were male and 29% were female. The median age of the study population was 65 years. The incidence of access site complications was significantly higher in women (27.8%) compared to men (18.0%). Women were more likely to have access site hematoma (13.9% vs 7.1%, p=0.001), hematocele (1.6% vs 0.4%, p=0.04), and pseudoaneurysm (1.6% vs 0.4%, p=0.04) compared to men. No significant difference was observed in the incidence of arteriovenous fistula or vascular perforation between genders.

Conclusion: Women undergoing percutaneous coronary interventions with radial artery access have a higher incidence of access site complications compared to men. Further studies are needed to explore the potential causes and preventive strategies for access site complications in women.

TCT-838
Radial access in the very elderly
Leticia Blazquez1, Felipe Hernandez2, Lola Villagraz3, Sandra Mayordomo3, Leticia Blazquez1, Felipe Hernandez2, Lola Villagraz3, Sandra Mayordomo3
1Hospital 12 de Octubre, Madrid, Madrid, 2Hospital 12 de Octubre, Madrid, Spain, 3Hospital 12 de Octubre, Madrid, Madrid, Spain

Background: Radial access (RA) for coronary interventions is being routinely used in patients with a high risk of access-site complications related to invasive coronary angiography. Our purpose was to evaluate feasibility of RA and to compare left versus right RA in very old patients.

Methods: Retrospective study of patients ≥80 years who underwent coronary angiography through RA at our institution. Success rate (complete procedure performed through the RA), crossover rate, fluoroscopy time, volume of contrast and type of procedure were collected.

Results: A total of 1039 patients were included (44.5% female), mean age 82.9±7.6 years (range 80-94), who underwent a RA coronary angiography. Right radial artery (RA) was used in 913 (87.9%) and left radial artery (LRA) in 126 (12.1%). No statistically significant differences were observed in sex, body mass index (BMI) or type of procedure (diagnostic or intervention) between both groups. Primary success rate was 94.4%, and access crossover was required only in 58 patients (5.6%). No differences were observed in crossover rate when the initial approach was RRA or LRA (5.7% vs 4.7%, p=0.87), or regarding sex (male 4.8% vs female 6.5%, p=0.27) or BMI (26.7±4.5 in crossover group vs 27.7±4.5 in non-crossover group, p=0.1). Percutaneous coronary intervention (PCI) was performed in 403 patients (38.8%). Mean fluoroscopy time showed a trend to be shorter in RRA group (11.2±10 min vs 12.6±10.7 min, p=0.16), while the volume of contrast was significantly higher use of contrast volume.

Conclusions: RA success rate was high in daily practice in patients ≥80 years despite physical or anatomical limitations. No differences in crossover rate were seen between RRA and LRA. However, LRA showed a statistically significant higher use of contrast volume.

TCT-839
Incidence and Predictors of Procedural Difficulty in Transradial Coronary Angiography
Shunuke Aoi1, Naoki Misumida1, Tomo Ando1, John T. Fox1, Yumiko Kaneko1
1Mount Sinai Beth Israel Medical Center, New York, NY

Background: The incidence of procedural difficulty in trans-radial coronary angiography (TR-CA) has not been well described in the US practice, and the impact of ethnic diversity has not been explored. The objective of this study is to identify the incidence and predictors of procedural difficulty in TR-CA in our diverse population.

Methods: We retrospectively reviewed consecutive 1,824 patients who underwent diagnostic coronary angiography from April 2013 to September 2013. Ad-hoc coronary intervention was performed at the discretion of the operator. Elective coronary intervention cases were excluded. Procedural difficulty was defined as requiring (1) access site crossover, (2) more than 2 catheters, or (3) fluoroscopy time more than 10 minutes to complete coronary angiography. Baseline clinical variables and procedure details were reviewed, and multivariate analyses were performed to determine independent predictors of procedural difficulty in TR-CA.

Results: Of the total of 1,824 patients, TR-CA accounted for 1,314 patients (72%). After excluded 78 due to missing data, 1,236 patients were included in the final analysis. Baseline characteristics were mean age of 64 years old, 58% were male, and large ethnic diversity was observed: 28% White, 28% Asian, 25% Hispanic and 18% African American. Procedural difficulty was observed in 321 patients (26.0%), of which access site crossover accounted for 82 (6.6%) and multiple catheter use or increased fluoroscopy time were observed in 239 (19.3%). On multivariate analysis, procedural difficulty was independently associated with age above 70 (odds ratio [OR] 1.44, 95% confidence interval [CI] 1.09 to 1.90; p=0.011), female gender (OR 1.38; 95% CI 1.06 to 1.80; p=0.018), hyperlipidemia (OR 1.47; 95% CI 1.12 to 1.93; p=0.006) and non-African American ethnicity (OR 2.38; 95% CI 1.67 to 3.38; p<0.001). Neither BMI or height were statistically significant in predicting procedural difficulty.

Conclusion: The incidence of procedural difficulty in TR-CA was 26.0%, and independent predictors were age above 70, female gender, hyperlipidemia, and non-Asian ethnicity.

Vascular Access and Intervention - Femoral (includes closure devices)

Washington Convention Center, Lower Level, Hall A
Saturday, September 13, 2014, 5:00 PM-7:00 PM

Abstract nos: 840-851