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Gender Disparity in Young Patients Presenting with Symptomatic Premature Coronary Artery Disease Undergoing Percutaneous Coronary Intervention

Lakshmana K Pendyala, Joshua P Loh, Hironori Kitabata, Minha Sa'ar, Rebecca Torguson, Israel Barbash, Salem Badr, Danny Dvir, Satler Lowell, Augusto Pichard, Waksman Ron
MedStar Washington Hospital Center, Washington, DC

Introduction: There is paucity of data on the risk variables, clinical presentation and long term outcomes in patients presenting with symptomatic premature coronary artery disease (CAD). This study is done to understand the gender differences in risk factors for premature atherosclerosis and also evaluate the determinants of adverse outcomes after contemporary PCI in young patients.
Methods: Study included 167 consecutive patients aged ≤ 40 years treated with PCI with stent in our institution from January 2004 to May 2011.Baseline characteristics, clinical presentation, in-hospital and long-term outcomes were analyzed. We report the rates of major adverse cardiovascular events (MACE), defined as all-cause mortality, myocardial infarction (MI), and target lesion revascularization at 1-year follow-up. Independent correlates of adverse outcomes were identified using multivariable proportional hazard regression analysis.
Results: In this young group of patients (age 37 ± 3 yr), females have higher prevalence of diabetes mellitus (p =0.002), insulin dependent diabetes mellitus (p<0.001), chronic renal insufficiency (p=0.02), congestive heart failure (p =0.006) and lower hematocrit (p <0.001) compared to males. African Americans constitute 52% of the females compared to 25% seen in males (p=0.001). The in-hospital mortality is 2.4%, similar between the groups except higher rate of blood transfusions in women. At 1 year, the MACE rates (22% vs. 10%, p=0.04) were higher in women. Baseline hematocrit and number of lesions treated were independent correlates of MACE events at one year.
Conclusion: Special care should be directed to female patients presenting to catheterization lab with symptomatic premature CAD, as theses young females have high rate of co-morbidities and their longterm procedural outcomes are poor compared to younger males.

Clinical characteristics and one year outcomes stratified by gender

Variable [n (%)]	Whole group (n=167)	Female (n=46)	Male (n=121)	P value
Mean age (years±SD)	37±3	36±4	37±3	0.19
Diabetes mellitus	50 (30%)	22 (48%)	28 (23%)	0.002
Insulin-dependent diabetes	22 (13%)	14 (30%)	8 (7%)	<0.001
Congestive heart failure	8 (5%)	6 (14%)	2 (2%)	0.006
Chronic renal insufficiency	13 (8%)	7 (15%)	5 (4%)	0.02
Baseline hematocrit	40±5	35±4	42±4	<0.001
TLR MACE (1 year)	22 (13%)	10 (22%)	12 (10%)	0.04
TVR MACE (1 year)	29 (17%)	13 (28%)	16 (13%)	0.02
Death (1 year)	8 (4.8%)	4 (9%)	4 (3.4%)	0.22

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Red Cell Distribution Width As A Predictor Of Tvr Mace And Mortality After Pci In Patients With Ckd

Omid Fatemi, Rebecca Torguson, Fang Chen, Augusto Pichard, Ron Waksman
MedStar Washington Hospital Center/Georgetown University Hospital, Washington DC, DC

Background: Red cell distribution width (RDW), a numerical measure of the variability of the size of circulating erythrocytes, has been shown to be an independent predictor of mortality in patients undergoing PCI. Patients with renal impairment are known to have higher rates of death and myocardial infarction after PCI. The purpose of this study was to determine if RDW is a prognostic marker of death and MACE after PCI in patients with chronic kidney disease (CKD).
Methods: The study population included 3825 patients with coronary artery disease and chronic kidney disease (CKD) stage 2-5 who were subjected to PCI. The RDW was derived from a complete blood count (CBC) drawn before PCI. Stages of CKD were defined by a glomerular filtration rate of >90, 89-60, 59-30, 29-15, <15 ml/min/1.73m2 for stages 1-5 respectively. Only patients who were on hemodialysis were excluded. Multivariable logistic analysis of TVR MACE and mortality at 1 year was performed using a logistic regression model. Baseline characteristics of acute myocardial infarction, diabetes mellitus, peripheral vascular disease, and congestive heart failure were included in the model. Category free Net Reclassification Improvement (NRI) was used to determine if adding RDW to the model would improve the predictive ability of CKD for mortality and TVR MACE.
Results: On multivariable analysis, after adjustment for known correlates, CKD stages 2-5 were a significant predictor of TVR MACE (OR 1.36, 95% CI 1.02-1.81, p=0.038) and mortality (OR 1.56, 95% CI 1.13- 2.16). When RDW was added to the model in a category free NRI in TVR Mace (46%, p<0.001) and in 1 year mortality (52%, p<0.001) indicating a strong improvement in predicting mortality and TVR MACE in this population.
Conclusions: RDW, an easily obtainable marker, has a strong independent relationship with TVR MACE and mortality in patients with CKD stages 2-5. This data suggests that there may be a link with worse outcomes in patients with CKD and elevated RDW values.

Radial Access

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Safety And Feasibility Of Transradial Versus Transfemoral Approach For Diagnostic Coronary Angiography during Early Phase Of The Learning Curve

Mahmoud Mohamed Sabbah, Sr., Mohamed Ahmed Oraby, MD, Gamela Mohamed Nasre, MD
Suez Canal Medical School – Ismailia–Egypt, Ismailia, Egypt

Background: The radial approach has been increasingly used as an alternative to femoral access as it improves patients' comfort and permits earlier ambulation and discharge. Our aim was to assess the feasibility, and safety of transradial approach (TRA) versus transfemoral approach (TFA) for diagnostic coronary angiography, during early phase of the learning curve.
Methods: This is a prospective single-centre comparative study carried out at the catheterization laboratory at Suez Canal University hospital. We enrolled 203 consecutive patients referred to our centre for diagnostic coronary angiography. Patients were divided into TRA or TFA groups. We compared the two groups regarding access / procedure success and time, fluoroscopy time, contrast volume, length of hospital stay and complications. All studies were performed by 3 angiographers with different level of experiences.
Results: There was no significant difference in access success between the two groups. However, TFA was associated with significantly higher procedure success than TRA (96.7% versus 76.7% respectively, p-Value = 0.002). TRA was more time consuming than transfemoral one (23.2 ± 8.4 min. versus 19.4 ± 5.9 min. respectively, p-value = 0.007). Compared with TFA group, TRA had a significantly longer X-ray exposure time (8.9 ± 2.27 min. versus 7.1 ± 1.6 min. respectively, p-value = 0.002) and associated with larger amount of contrast (148.04 ± 23.1 ml. versus 132.4 ± 22.7 ml. respectively, p-value = 0.001). Total length of hospital stay was significantly shorter in the TRA group than in TFA (5.1 ± 1.2 hour Vs 8.9 ± 1.5 hour respectively.

p = 0.0001). TFA had higher access site haematoma while arterial spasm was encountered only with TRA.
Conclusions: Compared with transfemoral approach, transradial approach for coronary angiography is a safe and feasible alternative that is associated with lower local vascular complication rates and shorter hospital stay. However, transradial approach is associated with some technical difficulties at the early phase of the learning curve that may improve with accumulating experience.