Implementation of Transradial Coronary Catheterization Program: Causes and Predictors of Procedural Failure

Khalid Suleiman, Alexander Feldman, Limor Ilan Bushari, Yoav Turgeman
Heart Institute, Catheterization Unit, Ha'Emek Medical Center, Afula, Israel

The transradial approach (TRA) for percutaneous coronary procedures (PCP) has the advantage of reduced access site complications but is associated with a higher rate of procedural failure compared to transfemoral approach.
Objective: To evaluate the causes and predictors of procedural failure during implementation of transradial program.
Methods: Single center, prospective, non randomized registry of all patients who underwent PCP since implementation of transradial program in November 2005 through June 2008. Procedural outcomes and causes of failure were prospectively collected.
Results: TRA was attempt as first choice in 1959/4831 (41%) of PCP, 66.9% male, mean age 60.5±11.8 years, Coronary intervention was performed in 941/1959 (48%) patients. Procedural failure was 5% (n=98).
Causes of procedural failure were inability to puncture the radial artery (58.2%), complex arterial anatomy (21.4%) inadequate catheter support (11.2%) and spasm (9.2%).
Multivariate forward stepwise logistic regression analysis revealed:

	Failure rate	Adjusted Relative Risk of failure (95% Confidence Interval)	P value
Age ≥70 years (n=477)	9.4%	2.49 (1.61-3.86)	<0.0001
Age < 70 years (n=1481)	3.6%		
Females (n=648)	7.7%	1.88 (1.22-2.89)	0.004
Males (n=1311)	3.7%		
< 200 procedures per operator	8.0%	3.26 (2.06-5.15)	<0.0001
>200 procedures per operator	3.3%		

Other variables were not found to be predictors of failure.
Conclusion: Inability to access the radial artery is the main cause of failure. Old age, female gender and limited experience are independent predictors of transradial procedural failure.