Radial Artery Access is Under-utilized in Women Undergoing PCI Despite Potential Benefits: Mayo Clinic PCI Registry

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Background
Radial artery access (RAA) for percutaneous coronary intervention is associated with reduced bleeding complications compared to femoral access. Women are at greater risk for bleeding compared to men, and therefore stand to benefit from utilization of RAA.
Methods
We studied 21,123 (29.0% female) participants in the Mayo Clinic PCI Registry from January 1, 2006 – December 31, 2016. Data were analyzed as a 10-year cohort and separated in tertiles by time. We sought to 1) describe radial access use and co-morbidities over tertiles by sex, and 2) identify predictors of radial access using multivariable analysis.
Results
In the overall cohort, women compared to men were older (69.6 ± 12.6 vs. 65.6 ± 11.9; p<0.001), more likely to present with an acute coronary syndrome (82.0% vs. 80.0%; p=0.0008) and had more comorbidities. RAA increased from tertile one (3.5% vs. 4.0%; p=0.3) through tertile three (46.8% for women vs. 50.3% for men; p=0.01), but remained lower in women. In multivariable analysis, female sex is associated with 22% less RAA use (OR 0.78, 95%CI 0.72-0.84; p<0.0001). Women compared to men experienced more bleeding (6.3% vs. 3.0%; p<0.0001) but bleeding was less likely in RAA (OR 0.45, 95%CI 0.36-0.56; p<0.0001).
Conclusion
Women undergoing PCI are less likely to receive RAA compared to males despite fewer bleeding events with this technique. This trend persists despite dramatic increase in RAA use. Given the potential benefit of RAA in women, sex should be considered in patient selection for a radial approach.

Figure 3. Multivariable Logistic Regression Comparing Predictors of Trans-Radial Access between the Overall Cohort and Time Tertiles

Effect	Level	Overall Cohort OR (95% CI)	Overall Cohort Pvalue
Sex	Female vs. Male	0.78 (0.72, 0.84)	<.0001
Bleed	Yes vs. No	0.45 (0.36, 0.56)	<.0001
Prior CABG	Yes vs. No	0.19 (0.17, 0.21)	<.0001
Prior PCI	Yes vs. No	0.80 (0.75, 0.87)	<.0001
ACS	Yes vs. No	1.40 (1.27, 1.54)	<.0001
BMI	One Unit Inc.	1.03 (1.03, 1.04)	<.0001
Smoking	Yes vs. No	1.13 (1.04, 1.23)	0.0062
Clopidogrel	Yes vs. No	0.63 (0.57, 0.69)	<.0001
GPIIb/IIIa Inhibitor	Yes vs. No	0.47 (0.44, 0.51)	<.0001
CHF	Yes vs. No	0.85 (0.77, 0.95)	0.0032
CrCl	20 Unit Inc.	1.01 (1.00, 1.02)	0.0169