



Quality of Care and Outcomes Assessment

GENDER AND BLEEDING RISK FOLLOWING PERCUTANEOUS CORONARY INTERVENTIONS: A CONTEMPORARY REPORT FROM THE NCDR®

ACC Oral Contributions

McCormick Place North, N229

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Background: Historically, women had higher rates of bleeding following percutaneous coronary intervention (PCI). Whether gender differences in bleeding persist in contemporary practice and their relationship to bleeding avoidance strategies (BAS) is unknown.

Methods: Among 570,777 men (67.5%) and women (32.5%) in the CathPCI Registry® between 2/28/2008 and 3/31/2011, post procedural bleeding rates were compared. Next, BAS strategy use (vascular closure devices, bivalirudin, radial approach and their combinations) were compared by gender. Finally, within BAS use strata, bleeding rates were compared by gender controlling for patient characteristics.

Results: Women were 95% more likely to bleed following PCI compared to men (7.8 vs. 3.7%; OR=1.95, 95% CI 1.91-2.02). Compared to men, women were more likely to receive bivalirudin (31.3 vs. 27.5%; OR 1.05, 95% CI 1.04-1.07) and less likely to undergo a radial approach (3.0 vs. 3.5%; OR 0.85, 95% CI 0.82-0.89) or have a closure device deployed (16.3 vs. 18.6%; OR 0.91, 95% CI 0.89-0.92). Regardless of the BAS strategy used, women had almost twice the risk of bleeding compared to men. (Table)

Conclusion: Following PCI, women had significantly higher rates of post-procedural bleeding. The type of BAS used differed by gender; however, women remained significantly more likely to bleed following PCI regardless of the BAS strategy used. These data underscore the need for understanding strategies to further reduce the risk of bleeding in women after PCI.

Risk Category	Women (N=185,674)		Men (N=385,103)		OR for Bleeding* Women vs. Men
	Treatment No. (%)	In hospital Bleeding Event	Treatment No. (%)	In hospital Bleeding Event	
All Patients	185,674	7.8%	385,103	3.7%	1.96 (1.91-2.02)
No Bleeding Avoidance Strategy	45,679 (24.6)	12.5%	93,553 (24.3)	6.2%	1.97 (1.89-2.05)
Any Bleeding Avoidance Strategy	139,995 (75.4)	6.2%	291,550 (75.7)	3.0%	1.94 (1.88-2.01)
Vascular Closure Device	30,357 (16.3)	8.5%	71,736 (18.6)	4.0%	2.03 (1.91-2.16)
Bivalirudin Only	57,632 (31.3)	6.8%	105,811 (27.5)	3.3%	1.89 (1.79-2.00)
Bivalirudin + Closure Device	42,618 (23.0)	4.3%	92,151 (23.9)	2.0%	1.93 (1.80-2.07)
Radial Only	5,557 (3.0)	4.6%	13,342 (3.5)	2.1%	1.98 (1.64-2.40)
Radial + Bivalirudin	3,831 (2.1)	3.1%	8,510 (2.2)	1.8%	NA*

*Adjusted for demographic, clinical characteristics and clustering by site.
*Sample size inadequate for multivariable comparisons.