

OPERATOR VOLUMES AND OUTCOMES

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TCT-603

Learning curve for transradial coronary angiography amongst trainees

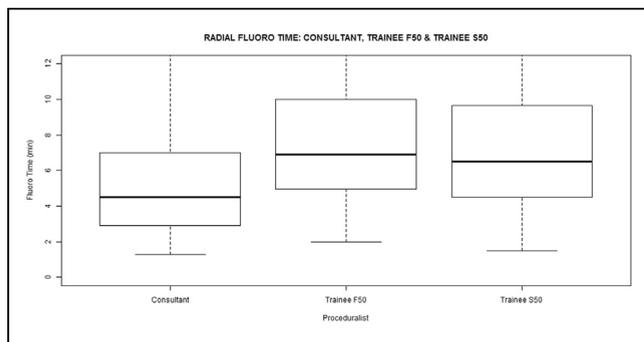
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BACKGROUND The transradial (TR) approach is increasingly being used as the default access for coronary angiography. A decrement in fluoroscopy time (FT) is one objective measure of competency. There is, however, limited data on the FT of cardiology trainees performing TR angiography. This study aims to establish if a difference in TR FT exists between consultants and trainees, investigate if trainees have shorter TR FT with increasing seniority, and determine a minimum number of TR cases to overcome the potential “learning curve”.

METHODS FT in outpatients at the University Hospital Geelong, Australia was assessed over four years. Cases were dichotomized to with trainee (trainee) or without trainee (consultant) present in the catheterization laboratory. Complex cases were excluded.

RESULTS 1699 patients underwent diagnostic coronary angiography during the study period, where the trainee was present in 707 or 55.5% of cases. 47.4% of trainee cases were done radially. Patients in the trainee cohort were older, but there was no other significant difference in baseline characteristics. Trainee cases had longer FT (6.7 vs 4.5 mins, p<0.001) when compared to consultant cases, but the median TR FT of trainees improved between their first and second fifty cases (7.1 vs 6.1 mins, p-value 0.0015). After the first fifty radial cases, the median trainee FT fell within the IQR of consultant TR times (2.9 - 7.0min).



	Consultant (n = 567)	Trainee (n=707)	p-value
Age, years [median]	65.0 [57.5 - 72.3]	70.0 [61.0 - 77.3]	0.01
Males, %	61.4%	67.8%	NS
Height, cm	168.0 [160.8 - 175.0]	171.0 [164.0 - 178.0]	NS
Weight, kg	79.5 [69.8 - 95.5]	83.0 [73.0 - 94.3]	NS
Body Mass Index [median]	27.9 [24.5 - 33.4]	28.2 [25.6 - 31.7]	NS
Radial, %	57.5	47.4	P<0.0004
Femoral, %	42.5	52.6	

CONCLUSION Cardiology trainees have longer TR FT compared to consultant cardiologists. However, these times improved over time, with a significant improvement seen after a minimum of fifty cases.

CATEGORIES OTHER: Quality, Guidelines and Appropriateness Criteria

TCT-604

Impact of High Operator Volume on Mortality with Contemporary PCI



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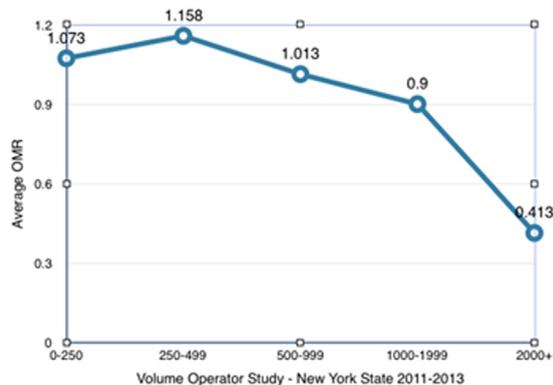
BACKGROUND The ACCF/AHA/SCAI 2013 update on percutaneous coronary intervention (PCI) clinical competency reduced the minimal physician requirements from 75 annual PCI's to 50 per year (averaged over two years). This reduction has occurred while the complexity of PCI has increased. Multiple studies have demonstrated an association between increased operator volume and a reduction in mortality. This is the first study to assess if there is further benefit in reducing mortality at the extremes of operator volume.

METHODS Data from New York's Percutaneous Coronary Interventions Reporting System in 2011 to 2013 (n=145,247) were used to examine the impact of operator volume on in-hospital mortality or after discharge but within 30 days. Cases were analyzed, based on operator's volume during the reporting period.

RESULTS The statewide average observed mortality rate (OMR) during the period reviewed was 1.04. Mortality rates by operator volume are presented in Table 1. Increased operator volume was significantly associated with decreased mortality. For operator volumes below 2,000, the odds of mortality, were 2.6 times the odds for operator volumes of 2,000 or higher (95% CI, 1.89, 3.61; p<0.0001).

Volume	Operators	Cases	Deaths	OMR	EMR	RAMR
0-249	140	19,689	226	1.073	1.014	1.026
250-499	129	48,149	557	1.158	1.165	1.062
500-999	62	42,535	419	1.013	1.04	0.981
1000-1999	18	21,291	190	0.9	0.875	1.048
2000+	3	9,334	38	0.413	0.643	0.673

OMR= Observed mortality rate EMR=estimated mortality rate RAMR=Risk adjusted mortality rate



CONCLUSION Despite a decreased focus in the guidelines on higher volume, we have confirmed an association with decreasing mortality and increased operator volume. Notably, within the highest volume bracket, mortality rates are further reduced in half. With the specialization of innovative devices and increasing complexity of PCI, there may be an increased importance of high annual volume.

CATEGORIES CORONARY: PCI Outcomes

TCT-605

Examining the Operator Learning Curve for Percutaneous Coronary Intervention of Chronic Total Occlusions



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