1168-164 Mobile Cardiac Catheterization Laboratories in Community Hospitals Improve Access to Cardiac Catheterization in Women and Minority Patients

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Background: Women and minority patients are less likely to undergo cardiac catheterization (cath) than white male patients. Mobile cardiac cath labs in community hospital settings have been proposed as a mechanism to increase access to these under-served populations, allowing patients to remain at home or in a local hospital rather than traveling to a tertiary care center. Using similar patient selection criteria, we compared a 10-year experience (1991-2000) with mobile cardiac cath labs at 10 community hospitals to patients referred for an outpatient cardiac cath at Duke Hospital (1994-2000). **Methods**: Baseline characteristics were obtained from the Duke Cardiovascular Database. Expected referral populations were generated using data (by county) taken from the adult population of the 2000 United States Census and the percentage of patients in each group from counties adequately represented in the referral population. **Results**: Baseline characteristics including age, left ventricular ejection fraction, severity of coronary disease, and cardiac risk factors (except gender) were similar in both populations.

	Duke Mobile Cath Lab (n=10,388)		Duke Outpatient Cath Lab (n=8,335)	
	Referral Population	Catheterization Population	Referral Population	Catheterization Population
Female (%)	52.5	45.9	52.1	36.4
African-American (%)	29.2	21.4	28.5	13.2
All Minorities (%)	36.5	23.0	41.2	16.7

*P<0.0001 for all differences between catheterization patient groups

Conclusions: When compared to a tertiary referral center, mobile cardiac catheterization services at community hospitals provide increased access to cardiac cath for women and minority patients. Patients seen in both settings are otherwise similar, suggesting gender and ethnic background may play an important role in patient and physician decisions regarding referrals for cardiac cath.

1168-165 Do Racial Disparities in Cardiac Revascularization Use Affect Patient Symptoms and Functional Outcomes?

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Background: While studies have found that African-Americans (AA) with coronary artery disease (CAD) are less likely than whites to undergo cardiac revascularization, the impact of these care differences on patient symptoms and functional outcomes is unclear.

Methods: We studied baseline and 6- month functional status and angina symptoms using the SF-36 and SAQ questionnaires in 1,392 CAD patients (17% AA) undergoing cardiac catheterization at Duke between 1998-2000.

Result: AA were younger (mean age 64 vs 67 yrs, p<0.01), more likely female (53% vs 36%, p<0.01), and received fewer cardiac revascularization procedures (58% vs 71%, p<0.01). At 6-months, rates of angina were higher among AA (35% vs 26%, p<0.01). These differences in symptoms persisted even after adjusting for age and sex, however, not after adjusting for revascularization status. Relative to whites, AA had lower baseline and 6-month physical and mental health function scores (Table). Both groups improved over the 6-month period, and race was not a significant predictor of physical or mental health function after accounting for patient demographics, clinical factors, and baseline functional status.

Conclusion: While racial disparities in cardiac revascularization rates did not impact functional outcomes, they were associated with more angina symptoms among AA.

Variable	AA	White
Sample size	242	1150
Physical Function		
Baseline	48	54*
6-month	53	61*
Mental Function		
Baseline	69	70
6-month	72	76*

*p<0.05 comparing AA with white

1168-167 Patterns of Treatment for Native Valve Streptococus Viridans Endocarditis Among Cardiologists Versus Infectious Disease Specialists

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Background: While the diagnosis of endocarditis (IE) has been standardized since the introduction of the Duke criteria, treatment is considerably more variable and may differ amongst Cardiologists (C) vs. Infectious diseases specialists (IDS). We therefore investigated physicians' treatment patterns of native valve S. viridans IE.

Methods: Eighty-five training program directors in Cardiology and Infectious diseases in Canada and the US were surveyed on their approach to therapy for native valve S. viridans IE. Physicians were asked about diagnostic criteria used, antibiotic use, and which of 7 clinical and 6 echo features were important in choosing the length of IV antibiotic treatment.

Results: Fifty-five IDS's and 30 C's responded. In the year prior to the survey, 69% of physicians treated at least 5 cases of IE (70 % ID, 67% C, p=ns). Eighty-four percent used Duke criteria for diagnosis of IE (83% ID, 86% C, p=ns). C's tended to consult IDS's more than the converse (68% vs 52% p=.07).In both groups, short course antibiotic therapy (2 weeks IV antibiotics) was used in at least 1/3 of cases of native valve S. viridans IE cases by 33% of physicians. There were no differences in duration of antibiotic treatment for C's vs. IDS's, however C's used aminoglycosides for > 2 weeks more commonly (29% vs. 3%, p <.02). Both groups included sensitive organism, absence of vegetation and absence of abscess as 3 of the 4 most important determinants for short course therapy. When compared to C's, IDS's considered more clinical features, particularly diabetes, prior endocarditis, and rapid defervescence, (p=.07, .04, ,.01 respectively) when deciding on short course therapy.

Conclusion: Both Cardiologists and ID specialists frequently treat patients with IE. While native valve S. viridans IE represents one of the most commonly treated forms of IE, there are significant differences between cardiologists and ID specialists in antibiotic use and in the importance placed upon various factors in determining duration of antibiotic therapy. Both groups, however, use echocardiographic features to determine length of therapy despite echo never having been validated in this role.

1168-168 Prediction Rule for Insignificant Coronary Artery Disease in Patients Being Considered for Elective Coronary Angiography

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Background: Approximately 30% of patients referred for elective cardiac catheterization (cath) for suspected occlusive coronary artery disease (CAD) are found to have insignificant CAD, defined as no stenosis $\geq$ 50%. We sought to develop a prediction rule that would improve the accuracy of identifying which patients with abnormal nuclear exercise stress testing (EST) have insignificant CAD and thus may not need referral for cath.

Methods: A multivariable logistic model was developed from clinical and EST predictors in 158 consecutive patients who underwent nuclear EST and were referred for elective cath. Perfusion defects were categorized by a regional nuclear score (RNS), shown to be predictive of severe CAD (p=.001). This RNS assigned a score of 0-3 for each descriptor of size, severity, and degree of redistribution of the most severe perfusion defect, with a resultant total score range of 0-9.

Results: Variables in the final model were: (1) Age < 45 (OR = 3.0, 95% CI: 0.73-12.7, (2) No evidence for prior CAD by ECG, echocardiogram, or prior cath (OR = 6.0, 95% CI: 2.3-15.2), (3) No chest pain during EST (OR = 3.9, 95% CI: 1.6-9.7), (4) Ability to perform > 7 METS on EST (OR = 2.8, 95% CI: 1.2-6.9), (5) No ST segment deviation during EST (OR=3.2, 95% CI: 1.3-7.8), and (6) RNS $\leq$ 7 (OR = 8.2, 95% CI: 2.2-30.7). A simplified model assigned a weight of 2 for no prior CAD and RNS $\leq$ 7 and 1 for each of the other four variables, giving a score range of 0-8. This model showed excellent discrimination (c statistic of 0.83 corrected for over-fitting by bootstrapping), and calibration (Hosmer-Lemeshow statistic p = .63), with close match between deciles of predicted and observed probabilities of insignificant CAD. The negative predictive value for insignificant CAD was 100% for a score of 7-8 (comprising 9% of the total study group).

Conclusions: Among patients being considered for cardiac catheterization, a simple scoring system accurately identifies 9% of patients with a 100% probability of having insignificant coronary artery disease. Avoidance of catheterization in these patients on a widespread basis could translate to substantial annualized cost savings, with minimal risk of missing stenotic coronary artery disease.

1168-170 The Relationship Between Angina Frequency and Patients' Quality of Life

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Background: The principle concerns of physicians in recommending revascularization to patients with coronary artery disease (CAD) are the severity of stenoses, the magnitude of cardiac ischemia, and the systolic function of the left ventricle.There are no studies to define clinical characteristics associated with an improvement in quality of life (QOL) after percutaneous coronary intervention (PCI).We hypothesized that QOL would be most influenced by those factors that most affect their lives, namely, the symptoms of CAD and the physical limitations imposed by their angina. It follows that an improvement in symptoms and physical function should be the primary drivers for improvement in their quality of life.

Methods: Phase 1 of the PRESS study enrolled 271 consecutive patients undergoing PCI at Mid America Heart Institute from February 8, 1999 through April 23, 1999. Patients were administered a series of questionnaires at baseline and monthly thereafter for six months. To assess their disease-specific health status, we selected the Seattle Angina Questionnaire (SAQ) and partitioned patients into four groups by angina frequency scores: daily (0-30), weekly (31-60), monthly (61-90), and no angina (>91). Univariate and multivariate models comparing mean SAQ QOL scores and change scores were analyzed.

Results:241 (89%) patients had follow-up data. Mean SAQ QOL scores were 39.9$\pm$18.7 for those with daily angina, 44.4$\pm$19.4 for weekly symptoms, 53.7$\pm$18.4 for monthly symptoms, and 78.8$\pm$18.6 for no angina (p=<0.0001). Multivariate models incorporating comorbidity, disease severity (# of diseased vessels and EF) and health status reveal that physical limitation and angina frequency are the most important determinants of baseline QOL improvements and in QOL after PCI. The adjusted mean improvement in the SAQ quality of life scale is 3.3$\pm$0.69 points for each 10-point change in SAQ angina frequency score (p<0.0001).

Conclusions: The most important determinants of quality of life among patients presenting for PCI are the amount of symptoms that they experience and the physical limitations imposed by those symptoms. Improving symptoms is an important factor in maximizing patients' quality of life.