education, nutritional, medical, psychological and sexual counseling and group smoking cessation. All patients participated in low intensity exercise program twice weekly. The patient's symptoms, vitals and medications were evaluated at each visit and clinical and laboratory data, echocardiography and stress myocardial perfusion imaging (SPECT) were evaluated before and 3 months after the end of the study.

RESULTS The mean age was 56.8±3.1 years and only 2 patients (5%) were females. 22(55%) patients were diabetic, 21 (53%) were hypertensive and 30 (75%) were smokers. It was found that 3 months after completion of CRP, there was a significant decrease in BMI (30.3±2.9 vs. 31.2±1.9, p<0.001), and mean blood pressure (93.4±11 vs. 105±10.6 mmHg, p<0.001). There was also a favorable effect on lipid profile and a significant improvement of the functional capacity in terms of NYHA functional class (2.1±0.62 vs. 1.4±0.6, p<0.001). Despite that wall motion score index did not significantly change after CRP, there was a strong trend towards a better ejection fraction (53.7±7.8 vs. 54.5±6.3 %, p=0.06) and significant improvement of Canadian cardiovascular class (1.42±0.6 vs. 1.95±0.5, p<0.001) post CRP. Importantly, the difference between the SPECT-derived summed segmental scores at peak stress and at rest (SDS) was significantly lower after CRP (4.4±3 vs. 7.2±3, p<0.001).

CONCLUSION Participation in cardiac rehabilitation program improves ischemic burden in patients with IHD who are unfit or not suitable for conventional cardiac revascularization. In addition the decreased ischemic burden, functional capacity, hemodynamic and metabolic profiles also improves for this group of patients and thus, cardiac rehabilitation should be implemented for routine management of those patients.

CRT-171

The Clinical and Cost Burden of Coronary Calcification: An Economic Model to Address Under-reporting and Misclassification

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BACKGROUND Coronary artery calcification (CAC) is an established risk factor for poor cardiovascular clinical outcomes. This economic modeling analysis estimates the incremental impact of CAC on medical care costs and patient mortality for *de novo* percutaneous coronary intervention (PCI) patients in the 2012 cohort of the Medicare elderly (>65) population.

METHODS The target study population is the Medicare elderly with atherosclerosis in calendar year 2012 experiencing a new index event, defined as a patient receiving a coronary angiogram with no prior coronary revascularization in the preceding six months. This aggregate burden of illness study is incidence-based, focusing on cost and survival outcomes for an annual Medicare cohort based on the recently introduced ICD9 code for CAC. The horizon of the cost analysis uses a one-year horizon, and the survival analysis considers lost life years and their economic value. The principal data sources for cost and survival analyses were Medicare's Standard Analytic Files. Estimates of the degree of calcification and the incidence of MACE were based on the HORIZONS-AMI/ACUITY elderly pooled sample.

RESULTS For calendar year 2012, an estimated 200,945 index (*de novo)* PCI procedures were performed in this cohort. An estimated 16,000 Medicare beneficiaries (7.9%) were projected to have had severe CAC generating an additional cost in the first year following their PCI of $3,500, on average, or $56 million in total. In terms of mortality, the model projects an additional 397 deaths would be attributable to severe CAC in 2012, resulting in 3,770 lost life years, representing an estimated loss of about $377 million, when valuing lost life years at $100,000 each. An estimated 63,000 patients had moderate CAC.

CONCLUSIONS These model-based CAC estimates, considering both moderate and severe CAC patients, suggest an annual burden of illness approaching $1.3 billion in this PCI cohort. The potential clinical and cost consequences of CAC warrant additional clinical and economic attention not only on PCI strategies for appropriate patients but also on reporting and coding to achieve better evidence-based decision making.

CRT-172

Abstract Withdrawn

RADIAL ACCESS

CRT-173

Is the Allen Test Necessary Before Transradial Artery Catheterization?

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OBJECTIVE We investigated whether Allen test is necessary before transradial approach.

BACKGROUND Transradial approach has been feasible and effective for cardiac and other vascular interventions in recent years. Most operators use a modified Allen test due to known collateral circulation in the hand; however, the definition of abnormal Allen test is not consistent and necessity before radial cannulation is not well defined.

METHODS The study population consisted of 2650 patients who had been performed cardiac catheterization or peripheral angiography (abdominal aortic, lower extremity) via radial access between 2011 and 2013. All of the patients were retrospectively investigated. Sixty five patients (Group A) had abnormal Allen test before transradial catheterization. One hundred and thirty age, sex and risk factors matched patients who had normal Allen test before transradial catheterization was taken as control group (Group B). No other test was used to assess collateral circulation in the hand. Standard cannulation techniques were used. One month after the procedure, all of the patients were performed Doppler ultrasonography for radial artery flow.

RESULTS Procedural success was similar between both groups (96.9% and 98.5%, p=0.367), and no major complication (subacute or delayed occlusion, spasm, hematoma, compartment syndrome, perforation/laceration/dissection, avulsion, AV fistula, pseudoaneurysm, digital ischemia, transient vocal cord paralysis) was developed in both groups during and after the procedure. Minor complications (subcutaneous edema, paresthesia, and ecchymosis) were developed in three patients in group A. However, none of them required surgical intervention. Doppler ultrasonography showed normal radial flow patterns in both study groups at one month post-procedural follow-up.

CONCLUSION Allen test may not be necessary before transradial access.

CRT-174

Transradial vs Transulnar Access for Coronary Angiography - A Meta-analysis

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BACKGROUND Transradial access for coronary angiography is widely used because of the low risk of complications and faster ambulation times for patients. Ulnar artery can also be easily accessed for coronary angiography. We compared the safety and efficacy of this approach in this meta-analysis.

METHODS PubMed, EBSCO and Google Scholar databases were queried for studies on transradial and transulnar access. Efficacy and adverse events for both these routes were then extracted and analyzed with Revman 5.2 software using random effects model.

RESULTS A total of 7 studies with 13,285 patients were included in this meta-analysis. There was a high percentage of successful radial artery access with a very low risk of crossover to alternate site compared to ulnar artery access (OR 0.32, 95% CI 0.12-0.91). This was driven by a high crossover rate in the ulnar group in one particular study. The number of attempts needed to gain successful access was very similar between the two groups (mean difference = -0.18, 95% CI -0.27-0.09). The incidence of complications such as hematomas (OR 0.81, 95% CI 0.41-1.61), arterial spasm (OR 1.21, 95% CI, 0.47-3.14), arterial occlusion (OR 0.93, 95% CI 0.68-1.28) and major adverse cardiovascular events (OR 1.17, 95% CI 0.73-1.86) were similar in both groups.

CONCLUSION There was a lower incidence of crossover with the radial access compared to ulnar. However, the complication rates were similar between the two groups.

Transradial vs Transulnar outcomes	Pooled Odds Ratio	Lower limit of 95% Confidence Interval	Upper limit of 95% confidence interval
Crossover rate	0.32	0.12	0.91
Number of attempts (mean difference)	-0.12	-0.27	-0.09
Arterial spasm	1.21	0.47	3.14
Arterial occulsion	0.93	0.68	1.28
Hematomas	0.81	0.41	1.61
Major adverse cardiovascular event	1.17	0.73	1.86