

ASCVD score as a predictor of CAD burden in stable chest pain

39

Marissa Edmiston, Jaclyn Rivington, Sunil Vassireddi, Meera Kondapaneni

Case Western Reserve (Metrohealth)

Type of submitter

Fellow in Training

Abstract

Background: Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of mortality in the United States. Cost-effective screening of patients, particularly those with stable chest pain, toward angiographically significant coronary disease continues to be a challenge. Though the commonly used ASCVD risk calculator is validated to determine the risk of a future ASCVD event (coronary death, nonfatal MI and fatal or nonfatal stroke) in 10 years, it has not been associated with coronary angiography in these patients. We hypothesize that ASCVD risk score can predict angiographically significant CAD in patients with stable chest pain.

Methods: Retrospective chart review from 2017 to 2018 identified 149 consecutive patients with stable chest pain without evidence of acute myocardial injury who had diagnostic coronary angiography performed. Exclusion criteria: previous known history of CAD or coronary angiography, positive EKG changes or cardiac enzymes, and admission to an ICU. Each patient was classified as either ASCVD low risk (<10%) or high risk (\geq 10%) and each coronary was angiographically graded as normal (0), low (1), moderate (2) or severe (3) stenosis and a cumulative score for CAD burden was calculated.

Results: Seventy-two (48%) patients had low ASCVD risk score and seventy-seven (52%) had high ASCVD risk score. Thirty-three percent of patients with low ASCVD risk score were noted to have angiographically significant CAD (at least 1 vessel with moderate or severe CAD) compared to 53% of patients with a high ASCVD risk score (p-value: 0.015). A high ASCVD risk was also associated with more patients with 2 vessel disease (38% vs 21%, p-value: 0.025), higher mean number of vessels per patient with at least moderate CAD (1.15 vs 0.68, p-value: 0.018) and a higher cumulative CAD burden (5.27 vs 3.4, p-value 0.001) compared to patients with a low ASCVD risk.

Conclusions: A high ASCVD risk score suggests angiographically significant CAD in patients with stable chest pain. However, a low ASCVD risk score does not exclude CAD. One third of the patients in the low ASCVD risk group had angiographically significant CAD. Subgroup analysis suggests very high ACSVD risk score (>30%) is associated with increased left main and multi-vessel coronary disease.

Categories

3rd year Fellow: Research

Program/Institution Name

CWRU MetroHealth

Virtual Visits in Cardiac Electrophysiology: Patient and Physician Preference

55

Peter Hu, Henry Hilow, Divyang Patel, Megan Eppich, Khaldoun Tarakji

Cleveland Clinic

Type of submitter

Fellow in Training

Abstract

Background: Cardiologists have long utilized devices to follow patients with arrhythmias in order to guide management. Virtual visits have been adopted as one modality to follow-up established patients with arrhythmias. Factors contributing to patient and physician preferences with virtual visits are unknown. To our knowledge, there are no prior studies that have collected objective feedback from patients and physicians after virtual visits.

Objectives: To determine patient and physician experience with virtual visits in Cardiac

Electrophysiology.

Methods: We performed a prospective survey of patients and physicians who participated in a virtual visit in the Department of Cardiac Electrophysiology at the Cleveland Clinic from December, 2018 and July, 2019. All established patients in the Department of Cardiac Electrophysiology at the Cleveland Clinic who had a virtual visit were invited to partake in our survey. A constructed, standardized phone script and patient survey questionnaire of 15 questions was implemented for each patient. In addition, for each virtual visit encounter the cardiac electrophysiologist who performed the virtual visit was also invited to participate in a separate physician survey.

Results: 100 patient and physician virtual visit encounters were included. The average age of patients who participated in a virtual visit was 65 years old. 70% were male and 30% were female. The average distance patients participated in their virtual visit was 656 miles. Of the 100 patients who participated in a virtual visit, 64 elected to complete a survey, 10 patients declined, 17 patients were unable to be reached on follow-up, and 9 patients were not included due to technical difficulties. Of those who responded, 51 patients participated in their first virtual visit, 4 participated in their second virtual visit, and 8 participated in their third or more virtual visit. 38/64 (59.4%) of patients preferred a virtual visit for their next visit, 12/64 (18.8%) preferred an in office visit, 13/64 (20.3%) responded that their decision for a virtual or office visit depended on their specific needs, 1/64 (1.6%) did not have a preference. A total of 14 cardiac electrophysiologists participated in 100 virtual visits. 9/100 visits were not included due to technical error and inability to complete the virtual visit. Of the 91 virtual visits by physicians, 62/91(68.1%) preferred a virtual visit for their next visit, 7/91 (7.7%) preferred an in office visit, 10/91 (11.0%) responded that their decision for a virtual or office visit depended on the indication

for follow-up, 6/91 (6.6%) did not have a preference, and 6/91 (6.6%) did not indicate their preference for their next visit.

Conclusions: Both patients and physicians showed favorable responses to virtual visits, with a majority of patients and physicians preferring a virtual visit over an in-office visit for their next encounter. Factors such as convenience, cost, feasibility, and reason for follow-up were important determinants that affected both patient and physician preference.

Categories

3rd year Fellow: Research

Program/Institution Name

Cleveland Clinic Foundation

Incidence of New onset Atrial fibrillation in newly diagnosed colon, lung and prostate cancer

3

Bharat Marwaha, Parminder Singh, Archana Gundabolu, Jay Shah, Sindhu Avula, Maen Dabbas, Mohammad Talib

Mercy St Vincent Medical Center

Type of submitter

Fellow in Training

Abstract

Back Ground

Atrial fibrillation is the most prevalent arrhythmia with global burden of 33.5 million patients with estimated prevalence of 2.7 to 6.1 million in United States. Incidence of 2% is reported among age <65 year.

Objective

It has been proposed that necrosis and fibrosis of atrial tissue lead to fluctuation in membrane potential contributing to Atrial fibrillation. Malignancies have higher burden of inflammation and we tested the hypothesis of inflammation and reported the trend of atrial fibrillation among prostate, colon and lung cancer patients.

Methods: Retrospective data analysis for the 515 patients including prostate, colon and lung cancer has been done. Inclusion criteria is adults >18 years age with newly diagnosed cancer. Exclusion criteria is severe MR, severe MS and history of coronary bypass surgery. New onset atrial fibrillation has been defined as new paroxysmal or persistent atrial fibrillation diagnosed 6 months before or after the diagnosis of cancer.

Results:

Among 182 Colon cancer patients who met the criteria, 13 patients (7.1%) are diagnosed with atrial fibrillation. 6 patients have new onset atrial fibrillation and 7 patients have history of atrial fibrillation. New onset atrial fibrillation is found in 26 (19.6%) patients out of 133 lung cancer patients meeting the criteria. We have found 6.2 % incidence of atrial fibrillation among 145 prostate cancer patients. 8 patients have been reported to have history of atrial fibrillation and 1 patient has new onset atrial fibrillation among 145 prostate cancer patients.

Conclusion: We have observed higher prevalence of atrial fibrillation among lung cancer patients compared to prostate and colon cancer patients. Prevalence may be higher but not picked up because of paroxysmal nature. Large scale studies in future can predict correlation and help risk stratify these patients with screening EKGs.

Categories

3rd year Fellow: Research

Program/Institution Name

Mercy St Vincent Medical Center

Implications of Various Diagnostic Criteria on the diagnosis of Cardiac Sarcoidosis: A Single Center Experience

54

Salvatore Savona, James Mann, Muhammad Afzal, Toshimasa Okabe, Elliot Crouser, Rami Kahwash, Steven Kalbfleisch

The Ohio State University Wexner Medical Center

Type of submitter

Fellow in Training

Abstract

Background: Sarcoidosis has been called the “great mimicker” due to the many ways it can present and be diagnosed. Cardiac Sarcoidosis (CS) has a prevalence of 2.2/100,000, with multiple diagnostic criteria, taking into account clinical and histologic characteristics.

Objective: To compare published diagnostic criteria for CS in patients referred for suspected CS.

Methods: A retrospective review of a prospectively maintained database of patients with suspected CS in a multidisciplinary sarcoidosis clinic was performed. Clinical, imaging and laboratory characteristics included in the published diagnostic criteria were collated by chart review. Japanese Ministry of Health & Welfare (JMHW) (2003, 2014, and 2017) and Heart Rhythm Society (HRS) diagnostic criteria for CS were applied to these patients.

Results: A total of 62 patients were referred to the CS, of which 53 (85%) fulfilled one of the published CS criteria. Specifically, 46 (87%) met HRS, 14 (26%) met 2017, 26 (49%) met 2006, and 26 (47%) met 1993 JMHW criteria. When compared, the proportion of patients meeting HRS criteria was significantly higher than the recent JMHW (2017)($p < 0.0001$). Nine (15%) patients did not meet any criteria, but had imaging concerning for CS without evidence of extracardiac sarcoidosis (i.e., potentially isolated CS).

Conclusion: There is significant heterogeneity between the published diagnostic criteria for CS. Among the 4 criteria, the HRS criteria appear to be the most liberal, with the newly proposed 2017 JMHW criteria being the most conservative. Further work is needed to delineate the clinical significance of imaging findings of CS in patients who do not fulfill the current diagnostic criteria.

Categories

3rd year Fellow: Research

Program/Institution Name

Ohio State University Hospital

Non-invasive screening for coronary allograft vasculopathy

12

Zarina Sharalaya, Wilson Tang, Paul Cremer, Andrew Noll, Wael Jaber

Cleveland Clinic

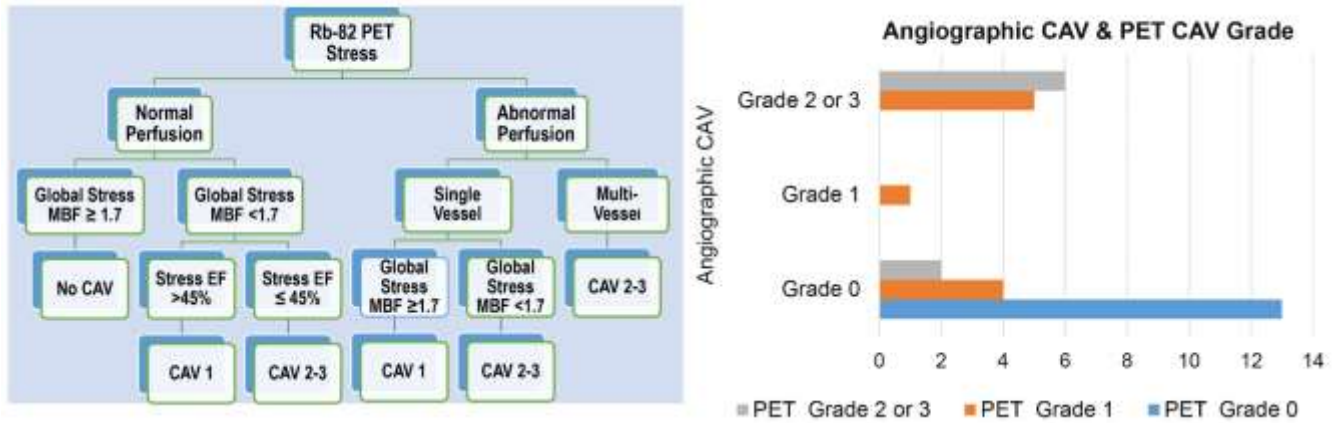
Type of submitter

Fellow in Training

Abstract

Background: Recent studies have shown promising data supporting the use of positron emission tomography (PET) in place of the current invasive gold standard, coronary angiography to screen for coronary allograft vasculopathy (CAV). PET can functionally assess flow using myocardial blood flow (MBF) which correlates with CAV and can portend poor outcomes. Objective: We sought to determine the ability of PET to identify CAV in comparison to coronary angiography. Methods: We retrospectively identified all heart transplant recipients who had regadenoson rubidium-82 PET rest-stress tests and coronary angiography at our institution between November 2012 and March 2019. CAV grade was based on ISHLT criteria according to Figure 1 which is adapted from researchers at Brigham and Women's Hospital. A cutoff of MBF <1.7 was used in their algorithm which we also applied to our sample. Results: We collected data from 31 patients with 44 PET studies. Of this population, 28 patients had coronary angiography performed which resulted in 37 total PET studies for comparison. Of the total collection of PET studies, 36% had CAV 0 (n=16), 36% had CAV 1 (n=16), and 28% had CAV 2-3 (n=12). When analyzing the subset who had both PET and angiography (n=31), of those with grade 0 CAV on PET, all patients also had no angiographic CAV (n=13). Of those with PET grade 2 or 3 CAV, 2 patients had no angiographic CAV and 6 patients had corresponding moderate-severe CAV angiographically. Conclusion: PET appears to be a good screening modality for CAV, as all of those with severe CAV angiographically had at least grade 1 CAV on PET. PET should be strongly considered as the primary method of CAV screening to avoid the risks of invasive angiography in a particularly delicate population of patients.

Figure 1. PET-Based Classification of CAV and Correlation with CAV Grade on Coronary Angiography.



Categories

3rd year Fellow: Research

Program/Institution Name

Cleveland Clinic Foundation