

**Poster #: 5**

**Title of** Imaging assessment of cardiovascular risk in asymptomatic adults

**Abstract:**

**Institution:** Virginia Mason Medical Center

**Authors:** David U Kim, MD 1; Wayne Hwang, MD 2; Beverly Hashimoto, MD 1; Eugene Lin, MD 1

**Modality:** Multi

**Organ System:** CV

**Intro:** N/A

**Purpose:** N/A

**Methods Used:** N/A

**Results of** N/A

**Abstract:**

**Discussion:** N/A

**Scientific and/or Clinical Significance?** (1) Asymptomatic patients with subclinical atherosclerosis may have “vulnerable” plaque that is at-risk for acute cardiac events, but this plaque may be occult on many anatomic and functional imaging modalities. (2) Coronary artery calcium score (CACS) has been proposed as a marker for plaque burden and has been shown to be an independent risk factor for cardiac events. (3) CACS should be considered for further risk stratification in asymptomatic patients with intermediate risk. (4) Per recent AHA guidelines, other modalities may also be considered in this population; specifically, sonographic assessment of CIMT. Other modalities such as nuclear MPI and coronary CTA may be less appropriate. (5) Imaging in this asymptomatic population is not without controversy, specifically with regard to the lack of outcomes data.

**Relationship to existing work** It summarizes the current state of the art and the most up to date clinical guidelines.

**Purpose:** (1) Review the concepts of “vulnerable” plaque and subclinical atherosclerosis in the asymptomatic patient. (2) Understand how imaging, particularly coronary artery calcium score (CACS), can be used to further risk stratify this population. (3) Identify the appropriate clinical role of imaging with respect to the 2010 American Heart Association (AHA) guidelines for assessment of cardiovascular risk in asymptomatic adults. (4) Compare CACS to other potential modalities for imaging coronary artery disease in this population, such as coronary computed tomography angiography (CTA), nuclear myocardial perfusion imaging (MPI), and carotid intima-media thickness (CIMT). (5) Review some of the controversies regarding imaging in asymptomatic individuals. (6) Present representative clinical scenarios to solidify understanding. **Content Organization:** An overview of the concepts of “vulnerable” plaque and the “vulnerable” patient will be presented. This will be followed by a conceptual overview of potential methods for imaging of the vulnerable patient. Representative studies regarding the value of CACS for risk stratification will be presented. The role of CACS and other imaging modalities in the recent AHA guidelines will be presented via representative clinical scenarios. Finally, some of the controversy over imaging in this population will be addressed. **Major Teaching Points:** (1) Asymptomatic patients with subclinical atherosclerosis may have “vulnerable” plaque that is at-risk for acute cardiac events, but this plaque may be occult on many anatomic and functional imaging modalities. (2) CACS has been proposed as a marker for plaque burden and has been shown to be an independent risk factor for cardiac events. (3) CACS should be considered for further risk stratification in asymptomatic patients with intermediate risk. (4) Per recent AHA guidelines, other modalities may also be considered in this population; specifically, sonographic assessment of CIMT. Other modalities such as nuclear MPI and coronary CTA may be less appropriate. (5) Imaging in this asymptomatic population is not without controversy, specifically with regard to the lack of outcomes data.