EPICARDIAL ADIPOSE TISSUE AS ASSESSED BY ECHOCARDIOGRAPHY AND INCIDENT CARDIAC DISEASE

ACC Moderated Poster Contributions
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Background: Epicardial adipose tissues (EAT) has been found to be associated with extent of coronary artery disease (CAD) as well as burden of atrial fibrillation (AF) on cross-sectional studies. It remains uncertain if quantity of EAT predicts development of coronary artery disease and atrial fibrillation in longitudinal studies.

Methods: Charts of patients undergoing echocardiography between January to March 2005 without presence of both AF and CAD were reviewed for development of clinically evident CAD or AF. Initial echocardiograms were reviewed and EAT was quantified at 3 prespecified location (Mid RV [EATmRV], along the plane of Aortic Annulus [EATAA] and maximum dimension [EATmax]) in recommended view (parasternal long) on 2D echocardiography. Outcomes assessed included incident AF, incident CAD and composite endpoint (CEP) of death, incident AF, incident CAD and CHF hospitalization. A prespecified interim analysis was performed.

Results: A total of 291 patients had follow up data available with mean f/u of 50.9 months. No association was found between any EAT index with incident CAD and incident AF. CEP in patients with no preexistent CAD, AF, CHF (n=77) was found to significantly associated with EATmRV (p=0.01) and EATAA (p=0.04). There was a significant trend (p=0.02) with increasing tertiles EATmRV predicting increasing incidence of CEP. It is uncertain why the CEP correlation was significant in the absence of significant association with isolated outcomes. Using a more stringent p value of 0.001 (bonferroni correction), this association will not be significant. There was excellent correlation between the various EAT indices [EATmax:EATmRV, r=.67; EATmax:EATAA, r=.61; EATAA:EATmRV, r=.86 (all p values<0.0001)].

Conclusion: EAT does not predict development of incident CAD or incident AF in patients without pre-existing CAD or pre-existing AF respectively. There appears to be significant correlation between different indices of EAT (EATmRV, EATAA and EATmax) suggesting that any of these can be used in future studies involving quantitative assessment of EAT.