Poster Session

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Can calcium score predict the appropriate treatment for high risk patients? (a 5 years follow up study)

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Coronary artery calcium score (CAC) measures the calcium contained in the artery wall and it is evaluated using multi-slice cardiac CT and CAC represents a useful tool for appreciating the burden of coronary atherosclerosis and for determining the risk for cardiovascular events.

The purpose of this study is that CAC can be use for guiding treatment strategy in patients classified as high risk based on Framingham score .

We prospectively enrolled 64 pts (79% male), 62,7+/-5 year, between 2002-2017. All included patients were considered high risk based on EuroSCORE model.

A multislice heart CT scan was performed for every patient with CAC score determination quantified with the Agatston score and expressed as Agatston Units (AU). The patients were divided in 3 groups according to the treatment that they received during the 5 years follow up: optimal medical treatment for coronary artery disease (OMT) – 35.9% (23), percutaneous coronary angioplasty (PCA) – 29.7% (19) and coronary artery bypass graft (CABG) – 34.4%.

The CAC score for pts treated by OMT vs CABG +/_ PCA were compared using the ROC curves. CAC score was statistically significantly superior in CABG+ PCA patients versus OMT (AUC: 0.96, $p < 0.001$ vs AUC 0.42, $p = 0.212$). Also, a comparison of CAC score score for CABG vs OMT revealed the same results (AUC: 0.96, $p< 0.001$ vs AUC: 0.42, $p = 0.264$). OMT vs CABG + PCA presented a cut-off value of 382 AU with a specificity of 90% and a sensitivity of 95%. OMT vs CABG presented a cut-off value of 530 AU with a specificity of 89% and a sensitivity of 95%.

In conclusion, CAC score has a good predictability and sensitivity in determining the outcome and can be a promising tool to guide therapy in high risk patients, mainly regarding medical vs surgical treatment for coronary artery disease.