Summery

The growing burden of coronary artery disease is out of question, the number of patients suffered from acute coronary syndrome is increasing due to prevalence of risk factors and changes in life style.

The effort for adequate evaluation and management of these patients gain a great concern in modern medicine so non invasive methods for adequate examination of coronary arteries are being extensively evaluated.

MSCT is a recent development of spiral CT; its faster rotation speed creates two advantages: high spatial resolution and short acquisition time which combined with controlled heart rate and adequate breath holding, enable high quality examination of coronary arteries through ECG gated contrast enhanced scan.

In this study 20 patients presented with acute coronary syndrome in the ER were subjected to do MSCT CA then invasive coronary angiography within one to two days from each other.

For MCST CA we use 64 slices CT scanner, first we perform coronary calcium scanning to calculate calcium score, then throw retrospective ECG gated contrast enhanced scan "after controlling heart rate by oral beta blockers" coronary arteries were delineated and visualized.

MSCT CA data were evaluated using different reconstruction modalities to adequately examine all the coronary segments.

Invasive coronary angiography was done to all patients and coronary circulation was examined in different radiological views by observers blinded to the results of CT.

All the 15 coronary segments were examined by both methods for presence of significant coronary stenosis "> 50% coronary narrowing" and the finding of MSCT CA were compared to those of invasive coronary angiography "which is the gold standard of the study".

The study revealed an overall sensitivity for all segments 87.5%, and specificity 97.6%, PPV 87.5% and NPV 97.6% with overall accuracy of 96%.

Results of this study match with the results of those studies published before that were performed on a comparable MSCT scanners (64 slices system).

Also the current study revealed that the sensitivity of MSCT CA to detect significant coronary artery stenosis increases with the increase in stenosis severity on invasive coronary angiography, proximity of the lesion to its origin and with increased coronary calcium scoring.

Also our study revealed that coronary calcium scoring could be used as a good predictor for coronary artery disease.

There were some limitations in our study; as no. of patients was small for performing some evaluations, radiation dose was not calculated, patients with previous CABG and stents were not

included and we use ICA as a gold standard for the study although other methods are more accurate.

We conclude from our study that MSCT CA is a good non invasive modality for evaluation of coronary artery stenoses in patient presented with ACS (UA & NSTEMI).