

The Routine Use of Multi-detector Coronary Computed Tomography in the “Fast Track” Evaluation of Patients with Acute Chest Pain

Roy Beigel¹, Dan Oieru¹, Orly Goitein², Pierre Chouraqui¹, Eli Konen², Jacob Or³, Hanoch Hod¹, Shlomi Matetzky¹

¹ Heart Institute, Sheba Medical Center Tel Hashomer, ² Cardiovascular Imaging, Diagnostic Radiology, Sheba Medical Center Tel Hashomer, ³ Emergency Department, Sheba Medical Center Tel Hashomer, Ramat Gan, Israel

Objectives: To evaluate the routine use of multi-detector computed tomography (MDCT) in a large cohort of patients presenting with acute chest pain (ACP) in a “real life” setting.

Background: The recently published AHA/ACC guidelines suggest that MDCT may be appropriate for investigating ACP. To date, only a few small studies have evaluated the use of MDCT in ACP, where it was not part of routine investigation.

Methods: We studied 785 consecutive ACP patients who underwent evaluation by MDCT or myocardial perfusion scintigraphy (MPS) after an observation period ≥ 12 hours. Patients with findings suggestive of significant coronary artery disease (CAD) were referred to coronary angiography.

Results: Forty-two patients were hospitalized due to evidence of myocardial ischemia and 44 patients were discharged after the observation period. Of the remaining 699 patients 340 underwent MDCT and 359 MPS. In 22 (7%) patients MDCT showed significant CAD and in 32 (9%) patients MPS showed significant ischemia. Significant CAD was confirmed by coronary angiography in 65% and 60% respectively. MDCT was non-diagnostic in 31 patients (9%). Extracardiac findings which might be related to ACP and/or necessitating further investigation were demonstrated by MDCT in 71 (21%) patients.

During a 3-month follow up, 1 (0.003%) patient with negative MDCT and 9 (3%) with negative MPS suffered an acute coronary syndrome or death, while re-hospitalization due to recurrent chest pain occurred in 9 (3.3%) and 21 patients (7.2%) respectively.

Conclusions: The use of MDCT can be an appropriate alternative to traditional non-invasive modalities for investigating ACP.