1550421

Non Obstructive Coronary Artery Disease upon Multidetector Computed Tomography in Patients Presenting with Acute Chest Pain - Does it Matter?

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Background: Multi-detector computerized tomography (MDCT) has emerged as an efficient tool for detection of significant coronary disease and assessment of patients with acute chest pain. MDCT may detect premature, non-obstructive atherosclerotic lesions which otherwise would have not been detected upon functional cardiac imaging tests. The clinical significance of these lesions in patients is unknown. In this study we prospectively analyzed the long term outcome of patients admitted to our chest pain unit (CPU) with findings of non significant coronary artery disease (CAD) in MDCT.

Methods: The study comprised 444 patients admitted to the CPU at Sheba medical center and were evaluated by MDCT. All MDCT scans were evaluated by 2 experienced readers. Studies were classified as: normal; Non significant CAD (defined as any narrowing < 50% diameter stenosis); and significant CAD (defined as narrowing of ≥ 50% diameter stenosis).

Results: Comparing patients with non-significant CAD (n=115) vs. patients with normal coronaries (n=266) upon MDCT, the aforementioned were older, more likely to be male, and dyslipidemic. During a long term follow up (371±367 days). Rates of death, repeated ACS and need for revascularization were equally low between the 2 groups. However, patients with non-significant CAD had significantly higher rates of repeated chest pain (43% versus 19%, $p<0.001$) and of re-admissions due to chest pain (14% versus 2.4%, $p<0.001$).

Conclusions: Patients with non significant disease upon MDCT have a higher rate of recurrent chest pain and re-admission but yet a benign clinical outcome as patients with normal findings.