Diagnostic Performance of Multislice CT Coronary Angiography in the Assessment of Significant Coronary Artery Disease

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Abstract

The use of noninvasive assessment tools such as multi-slice CT coronary angiography (MSCT-CA-CA) is recently considered mainly because it offers safety, patient convenience, and faster performance. The aim of the present study was to determine the ability of MSCT-CA-CA for the detection of significant stenoses in the coronary arteries, in comparison to conventional invasive coronary angiography (ICA). A total of 58 consecutive patients who were candidate for coronary angiography, with the diagnosis of acute coronary syndrome, from September 2006 to March 2006 were entered into the study. They underwent both coronary MSCT-CA-CA and ICA. The findings of each coronary segment were compared to MSCT-CA-CA in comparison with ICA. Based on artery analysis, sensitivity and specificity of MSCT-CA for the detection of involvement in RCA were 90.0% and 92.8%, in LAD were 71.8% and 92.9% and in LCX were 67.9% and 92.6%, respectively. On a per-segment basis, the sensitivity of MSCT-CA in the detection of injured segments ranged between 33.3% (for segment 11) and 100% (for segments 1, 2 and 12). Also, specificity ranged from 63.6% (for segment 15) and 98.1% (for segment 6). The presence of hypertension, hyperlipidemia, and smoking led to the reduction of the specificity and accuracy of MSCT-CA, whereas history of diabetes mellitus could increase the specificity and accuracy of this tool. MSCT-CA has high diagnostic performance in the assessment of significant coronary artery disease. Risk factors for coronary artery disease may influence this performance.

Keywords: Coronary angiography, Coronary artery disease, Sensitivity and Specificity,