Predictive value of coronary calcium score above zero in coronary artery stenosis among middle aged Saudi patients referred to computed tomography

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Abstract

The rapid socioeconomic growth in Saudi Arabia in the last few decades promoted negative lifestyle changes that increased subclinical and clinical coronary artery diseases (CAD).

METHODS: Retrospective cross-sectional study was conducted among adult patients referred to (64 multidetector spiral) computed tomography for standard indications at the Prince Sultan Cardiac Centre (Riyadh, Saudi Arabia) between July 2007 and December 2017. Those with pre-existing CAD excluded from the study. Stenosis was assessed using post-test CT angiography and was recorded as ≤50% and >50%

RESULTS: A total 2849 patients (1797 males and 1052 females) with an average age of 49.8±11.7 years were included in the current analysis. The prevalence of coronary stenosis was 34.9%. The prevalence of CCS>0 was 27.9% in all patients and 79.5% in those with coronary stenosis. Using operator receiver curve, CCS above zero (CCS>0) has the best discriminative ability irrespective of age and gender. The sensitivity, specificity, positive and negative predictive values of CCS>0 were 79.5%, 99.7%, 99.4%, and 90.1%, respectively. While specificity of CCS>0 was close to 100% irrespective of gender and age groups, sensitivity was better in older than younger age (55.3%, 79.4%, and 92.3% in those aged <45, 45-64, and ≥65 years and to less extent in males than females (80.2% versus 77.7%). The areas under the curve of CCS were 0.896 in all patients; 0.899 in males and 0.889 in females; 0.776, 0.895, and 0.962 in those aged <45, 45-64, and ≥65 years. After adjusting for traditional risk factors, the area under the curve was 0.942 in all patients; with minor differences by gender and age groups.

CONCLUSION: The use of zero cutoff of CCS is very predictive of coronary stenosis in middle aged Saudi patients referred to cardiac CT. It was specially beneficial to exclude coronary stenosis in both genders, specially in older age. The better discriminative ability of CCS in older age can be largely explained by differences in traditional risk factors.

Biography:

I am cardiologist; board certified of internal medicine and Board certified of Cardiology, Fellowship of cardiac MRI/CT from the university of Toront (2 years duration), Mini fellowship from Duke uneveristy 3 month duration. Head of cardiac MRI/CT in prince Sultan cardiac center. I did present my abstract in interenational confernce (London 2014, Toronto2015, AbuThabi 2015)

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