52nd CARDIOCON 2023: ABSTRACT

PROGNOSIS OF ZERO CORONARY ARTERY CALCIUM SCORE IN SYMPTOMATIC PATIENTS OF SOUTH ASIAN DESCENT – AN EXPERIENCE FROM A TERTIARY CARE CENTER IN PAKISTAN

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Objectives: To estimate the prevalence of non-calcified coronary artery disease in patients with chest pain and a zero coronary artery calcium score, and to assess the prognostic significance of a zero coronary artery calcium score in these symptomatic patients.

Methodology: All consecutive patients who underwent a CT coronary angiogram (CTCA) for evaluation of angina or angina-equivalent symptoms from 2009 to December 2020 were enrolled retrospectively. Patients with prior myocardial infarction, history of revascularization, and congenital heart disease were excluded. Follow-up data was collected by using the hospital's electronic patient record system and telephone communication. The endpoint, major-adverse cardiovascular events (MACE) was defined as the total of cardiac death, non-fatal myocardial infarction, and/or non-elective revascularization.

Results: A total of 534 patients were enrolled after final exclusion. The mean age was 53 years ± 11. Males constituted 68.4% of the study population. Dyslipidemia was the most common co-morbid condition identified (50%), followed by diabetes (18.4%) and hypertension (3.6%). Chest pain was the most common presenting complaint (97.4%) followed by dyspnea. At least 28.8% of patients with zero CAC scores had the presence of coronary artery disease (soft plaque) of any degree. Obstructive CAD (>50%) was present in 5.8% of patients. Follow-up was available for 61.4% of patients. The mean follow-up duration was 96.6 months ± 49.8 (range 21 – 194 months). All-cause Major Adverse Cardiovascular Event (MACE) was observed in 8.8% of patients. The most common MACE outcome was angina (3.96%) and all-cause mortality (3%). Only 2.7% required revascularization on follow-up with 1.2% having myocardial infarction and non-urgent revascularization. The baseline characteristics, all-cause MACE ($p = 0.79$), mortality (0.82), angina ($p = 0.765$), revascularization ($p = 0.45$), non-fatal MI, and non-elective revascularization ($p = 0.6$) did not differ significantly in patients with and without obstructive CAD. The baseline characteristics did not differ significantly between patients with and without MACE.

Conclusion: The incidence of soft plaque in this South Asian cohort is higher than that reported in international studies. However, in symptomatic South Asians, a CAC score of zero carries a good long-term prognosis, irrespective of the degree of CAD.

Keywords: Zero CAC, Agatston score, Calcium score, South Asians, Pakistan, CTCA

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