

Title: Coronary Artery Disease Complexity and Outcomes in Patients Presenting with Acute Coronary Syndrome in the Middle East

Category: Acute Coronary Syndromes

Abstract

BACKGROUND: Several registry-based Middle Eastern studies have shown that Arab patients with acute coronary syndrome (ACS) often present at a younger age with significant comorbidities and more complex coronary artery disease. We therefore sought to evaluate the clinical characteristics, risk factors, complexity of disease, and outcomes at our facility in the United Arab Emirates (UAE) as they compare to similar patients in the region.

METHOD(S): We performed a retrospective analysis of 530 patients with first presentation of ACS who underwent coronary angiography between June 1, 2015 and December 31, 2018. The primary aim of the study was to evaluate the clinical characteristics and complexity of disease in ACS patients referred for coronary angiography. An objective anatomic assessment of coronary artery disease complexity was performed using a SYNTAX score. The secondary aim of the study was to evaluate major adverse cardiac and cerebrovascular events (MACCE) in hospital and after discharge.

RESULT(S): Among the 530 patients with first presentation of ACS at our facility, the mean age at presentation was 57.0 ± 12.6 with the majority being male (77.2%). Most patients had at least one cardiac risk factor with more than half having diabetes mellitus (51.6%). A significant proportion had hypertension, hyperlipidemia, chronic kidney disease, and peripheral vascular disease. At least moderate left ventricular systolic dysfunction was seen in 46.6% of patients. The majority of the patients had non-ST-elevation myocardial infarction (47.5%) with 28.1% presenting with ST-elevation myocardial infarction. The calculated mean SYNTAX score for the overall group was 21.1 ± 13.1 . Three vessel or left main coronary artery disease was seen in 247 (46.6%) patients who had a calculated mean SYNTAX score of 30.3 ± 10.3 . Most of the patients (54.8%) were treated with percutaneous coronary intervention (PCI) and 34.4% underwent coronary artery bypass graft (CABG) surgery. All-cause death in the hospital or after discharge was seen in 9 patients (1.6%) with the majority due to a cardiovascular cause. Our facilities findings are comparable to the Middle Eastern Gulf-RACE 2 registry where ACS patients presented at a younger age with similar comorbidities, including a significant burden of diabetes mellitus. These results are compared to SYNTAX trial data that evaluated a Western cohort of patients.

CONCLUSION(S): Among the 530 patients with first presentation of ACS at our facility, the mean age at presentation was 57.0 ± 12.6 with the majority being male (77.2%). Most patients had at least one cardiac risk factor with more than half having diabetes mellitus (51.6%). A significant proportion had hypertension, hyperlipidemia, chronic kidney disease, and peripheral vascular disease. At least moderate left ventricular systolic dysfunction was seen in 46.6% of patients. The majority of the patients had non-ST-elevation myocardial infarction (47.5%) with 28.1% presenting with ST-elevation myocardial infarction. The calculated mean SYNTAX score for the overall group was 21.1 ± 13.1 . Three vessel or left main coronary artery disease was seen in 247 (46.6%) patients who had a calculated mean SYNTAX score of 30.3 ± 10.3 . Most of the patients (54.8%) were treated with percutaneous coronary intervention (PCI)

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comorbidities, including a significant burden of diabetes mellitus. These results are compared to SYNTAX trial data that evaluated a Western cohort of patients.

The retrospective analysis of patients with first presentation of ACS in the UAE shows that patients are presenting at a younger age with multiple comorbidities and complex disease with similar findings to other registries in the Middle Eastern region. Future prospective trials are needed with a direct comparison to a Western cohort of patients to help elucidate the differences and unique challenges of treating ACS patients in the Middle East.