Title: Clinical Characteristics and Prognosis of Young Middle Eastern Adults with ST-Elevation Myocardial Infarction: One-Year Follow-Up

Category: Acute Coronary Syndromes

Abstract

Background: Few studies have investigated premature ST-elevation myocardial infarction (STEMI) in the Middle East. The aim of the present study is to delineate the differential clinical characteristics and one-year prognosis of young Middle Eastern adults with STEMI (<45 years) compared to their older counterparts (≥45 years).

Methods: A total of 706 patients with STEMI, who were prospectively enrolled in the First Jordanian Percutaneous Coronary Intervention (PCI) Registry, were stratified into two independent groups (<45 or ≥45 years). Baseline clinical variables and in-hospital, one-month, and one-year major adverse cardiovascular events (MACE) were evaluated.

Results: One hundred twenty-three patients were <45 years old (17.4% of the total). Compared with older patients (≥45 years), young patients were mostly male (96% vs 82%, P<0.001), smokers (86% vs 49%, P<0.001) and less likely to have diabetes (39% vs 58%, P<0.001), hypertension (30% vs 56%, P<0.001) and known coronary artery disease (CAD) (17% vs 29%, P=0.006). Anterior STEMI or new left bundle branch block was the most common diagnosis (67% vs 63%, P=0.5) and left anterior descending artery was the most common culprit vessel (56% vs 50%, P=0.24) in both young (<45 years) and older (≥45 years) patients respectively. A greater proportion of the older patients (44%) compared to the younger patients (26%; P=0.001) had multi-vessel CAD. There were no significant differences between the younger and older patients in regard to in-hospital (23% vs 17%, P 0.12), one-month (24% vs 23%, P 0.77), and one-year (27% vs 28%, P 0.68) MACE. However, none (0%) of the younger patients died during one year follow-up while 21 patients (4%) of the older patients died which was statistically significant (P 0.036).

Conclusions: Young adult patients in the Middle East with STEMI are more likely to be smoking men with single vessel CAD by angiography. Although, younger patients had similar one-year MACE to older patients, their mortality rate appears to be better. A larger study is warranted to investigate this vulnerable group of patients to prevent future events.