CORONARY ANGIOGRAPHIC FINDINGS AND CONVENTIONAL CORONARY ARTERY DISEASE RISK FACTORS OF INDO-GUYANESE IMMIGRANTS WITH STABLE ANGINA PECTORIS AND ACUTE CORONARY SYNDROMES

Background: The prevalence of coronary artery disease (CAD) among migrant Indian populations exceeds that of Caucasians. Migrant Indians also suffer from more premature, clinically aggressive and angiographically extensive, (ie, 3-vessel disease). It is not known whether the extent of angiographic CAD or the conventional CAD risk factors of Indo-Guyanese (IG) immigrants differs from that of Caucasians.

Methods: We reviewed the conventional CAD risk factors and angiographic findings of 198 IG and 191 Caucasians who were consecutively referred for cardiac catheterization with a diagnosis of stable angina pectoris or acute coronary syndrome.

Results: Three-vessel CAD was approximately 1.5 times more common among IG than Caucasians (34.8% vs 24.0%; \(P=0.02\)). Age (\(P=0.01\)), male sex (\(P=0.03\)) and diabetes mellitus (\(P=0.05\)) were independently associated with an increased likelihood of 3-vessel CAD and there was a trend towards IG ethnicity predicting 3-vessel disease (\(P=0.13\)). The frequency of diabetes mellitus (51.5% vs 30.9%; \(P<0.001\)), hypertension (82.3% vs 67.0%; \(P<0.001\)) and dyslipidemia (75.5% vs 60.2%; \(P=0.001\)) were significantly greater among IG, however, that of smoking was not. While IG were significantly leaner than Caucasians (27.7 kg/m\(^2\) vs 30.0 kg/m\(^2\); \(P<0.001\)), their mean body mass index fell within the ethnic-specific range for obesity.

Conclusions: We conclude that IG immigrants presenting for coronary angiography have significantly higher rates of 3-vessel CAD as well as higher rates of diabetes mellitus, hypertension and dyslipidemia than Caucasians. Aggressive screening, prevention and treatment may be warranted in this cohort.

Key Words: Indo-Guyanese, Guyana, Coronary Artery Disease, CAD Risk Factors, Coronary Angiography

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Migrant Indian populations have a significantly higher prevalence of coronary artery disease (CAD) than Caucasians.\(^1\)–\(^4\) They also suffer from more premature, clinically aggressive and angiographically extensive disease.\(^5\)–\(^7\) It is not known whether Indo-Guyanese (IG) immigrants living in the United States manifest the same malignant CAD phenotype. Guyana was settled by inhabitants of the central Ganges valley of India between 1845 and 1917 under a system of indentured labor.\(^8\) Significant emigration to the United States followed passage of the Hart-Celler Immigration Act of 1965\(^9\) and according to census estimates there are more than 200,000 Guyanese living in the United States.\(^10\) We sought to compare the conventional CAD risk factors and the extent of angiographic CAD of IG immigrants and Caucasians who were referred for coronary angiography with a diagnosis of stable angina pectoris or acute coronary syndrome.

METHODS

This research protocol was approved by the Mount Sinai School of Medicine Institutional Review Board. The study was performed in a teaching hospital that serves a significant IG constituency living in New York City. We reviewed the medical records and coronary angiograms of IG immigrants and Caucasians consecutively referred to our institution’s cardiac catheterization laboratory from 2006–2008. The indications for referral were stable angina pectoris and acute coronary syndrome. Angiographic lesion severity was determined by visual estimation performed by an experienced angiographer. The extent of CAD was determined by adding the number of major epicardial vessels with \(\geq 50\%\) luminal stenosis. Left main coronary artery disease with \(\geq 50\%\) luminal narrowing was regarded as 2-vessel disease. Angiographic disease with \(< 50\%\) stenosis was regarded as non-obstructive.

The following data were collected from reviewing each patient’s medical record: age, sex, body-mass index (BMI), smoking history and conventional CAD risk factors (diabetes mellitus, hypertension, dyslipidemia). Diabetes mellitus (DM), dyslipidemia and hypertension were considered to be present if patients were prescribed therapy for such, either prior to or following hospitalization. Patients were considered to have a smoking history if they had smoked within the past 2 years, regardless of quantity.