CLINICAL RESEARCH

Distribution of coronary artery disease severity and risk factors in Afro-Caribbeans

Association entre facteurs de risque cardiovasculaire et sévérité des lésions coronaires chez les sujets afro-caribéens

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Summary
Background. — Traditional risk factors are strong predictors of the incidence of coronary artery disease (CAD), but their association with disease severity remains controversial and could differ across ethnic groups.
Aims. — In this study, we assessed the prevalence of cardiovascular risk factors (CRFs) in Afro-Caribbean patients with documented CAD, and sought to identify which of these factors are related to disease severity.
Methods. — We retrospectively studied 420 consecutive patients with CAD. Disease severity was determined from the results of invasive coronary angiography, based on the presence or absence of multiple (two or three) diseased vessels and the myocardial jeopardy (MJ) score.
Results. — In the studied population (mean age 64.7 ± 12.4 years), hypertension, diabetes and dyslipidaemia were the most frequent modifiable CRFs, present in 75.9, 47.8 and 37.8% of patients, respectively. Multiple logistic regression analysis showed that diabetes, male sex and

personal cardiovascular history significantly increased the risk of multivessel CAD: odds ratios (ORs) of 1.53 (1.01−2.33; $P = 0.048$), 1.61 (1.02−2.55; $P = 0.043$) and 1.68 (1.11−2.56; $P = 0.015$), respectively. Obesity was an independent negative predictor, with an OR of 0.48 (0.29−0.79; $P = 0.004$). Other traditional CRFs (hypertension, dyslipidaemia, smoking, age and family history of vascular disease) were not associated with CAD severity. For high-risk lesions (MJ score ≥ 8), both diabetes and hypertension were independent predictors of disease severity, whereas obesity was no longer a protective factor.

Conclusion. — Diabetes emerged as the strongest modifiable risk factor predictor of multivessel disease in Afro-Caribbean patients, whereas obesity was an independent protective factor. The underlying mechanisms of these associations should be relevant to disease prevention.

Résumé

Contexte. — Les facteurs de risque cardiovasculaire (FDRCV) classiques sont de puissants prédicteurs d'une coronaropathie mais leur lien avec la sévérité des lésions coronaires est controversé et pourrait varier selon les groupes ethniques.

Objectifs. — Évaluer la prévalence des FDRCV chez des sujets afro-caribéens et rechercher les facteurs associés à la sévérité des lésions coronaires.

Méthodes. — Nous avons analysé rétrospectivement 420 dossiers consécutifs de patients coronariens. La sévérité des lésions a été appréciée à la coronarographie selon l'existence ou non de lésions pluritronculaires (2 ou 3 vaisseaux atteints) et selon un score de risque myocardique (*myocardial jeopardy score*).

Résultats. — Dans la population étudiée (d'âge moyen 64,7 ± 12,4 ans), l'hypertension, le diabète et une dyslipidémie étaient les FDRCV modifiables les plus fréquemment observés avec une prévalence respective de 75,9, 47,8 et 37,8 %. Dans l'analyse de régression logistique multivariée seuls le diabète, le sexe masculin et les antécédents coronariens étaient prédictifs de lésions pluritronculaires avec des *odds ratio* (OR) de 1,53 (1,01−2,33 ; $p = 0,048$), 1,61 (1,02−2,55 ; $p = 0,043$) et 1,68 (1,11−2,56 ; $p = 0,015$), respectivement. L'obésité était un facteur prédictif négatif avec un OR de 0,48 (0,29−0,79 ; $p = 0,004$). En considérant les lésions coronaires à haut risque (score de risque myocardique ≥ 8), seuls le diabète et l'hypertension étaient des facteurs prédictifs indépendants de sévérité.

Conclusion. — Le diabète est apparu comme le facteur de risque modifiable le plus fortement lié aux lésions pluritronculaires chez les sujets afro-caribéens alors que l'obésité était un facteur protecteur indépendant. La connaissance des mécanismes sous-jacents à ces associations revêt un intérêt majeur pour la prévention des coronaropathies.

Background

Among cardiovascular diseases, coronary artery disease (CAD) is one of the leading causes of mortality and morbidity. The association between conventional risk factors (such as advanced age, male sex, family history of CAD, hypertension, dyslipidaemia, diabetes, smoking and obesity) and the presence of CAD and adverse clinical events is universal and well established [1,2]. However, the correlation between these risk factors and the severity of coronary atherosclerosis, assessed by angiography, is less consistent, with studies reporting conflicting results [3−10]. Several studies have also suggested that the distribution and relative effects of risk factors, as well as disease presentation and prognosis, may differ across ethnic groups [11−15].

The Guadeloupian population comprises about 80% Afro-Caribbeans, 10% Indians, 5% Caucasians and 5% other ethnic groups. Cardiovascular diseases are responsible for one third of all deaths in Guadeloupe, where a high prevalence of cardiovascular risk factors (CRFs) has been described in the population, including hypertension, diabetes and obesity [16−19]. However, very few data are available about the distribution of CRFs in patients with CAD in this population, and their impact on the severity of the disease has never been evaluated.

Therefore, the aims of our study were to investigate the prevalence of CRFs in Afro-Caribbean patients with documented CAD, and to determine which of these factors are associated with the extent of atherosclerosis, assessed by coronary angiography.

Methods

Study population

We reviewed the medical records of 543 consecutive Afro-Caribbean patients who had undergone coronary