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ADULT CARDIOLOGY-ORIGINAL ARTICLE

Importance of high triglycerides levels between novel coronary risk factors

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KEYWORDS
Lipids;
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Abstract
Introduction: The analysis of new cardiovascular risk factors is under an extensive debate in the cardiology and metabolic research fields.
Objective: To determine the main factors that contribute to the classification of individuals with higher coronary risk in the adult population from Maracaibo, Venezuela.
Methods: A descriptive, cross-sectional study with multistage random sampling in 1379 individuals belonging to the Maracaibo City Metabolic Syndrome Prevalence Study (MMSPS) was performed. They were classified according to the coronary risk by Framingham-Wilson equation adapted to our population. The association between various risk factors was evaluated by ordinal logistic regression models.
Results: 1,379 subjects (females 55.9%; n = 771) were evaluated, 66.2% (n = 913) were classified with low coronary risk. In univariate ($\chi^2 = 112.35$; $p < 0.00001$) and multivariate analysis [OR: 3.98 (2.39-6.63); $p < 0.01$], the main factors associated to be classified as the highest risk category were hypertriglyceridemia.
Conclusion: There are several factors that should be included in predictive models use worldwide. The most important in our population were dyslipidemia such as hypertriglyceridemia, hyperlipoproteinemia (a) and insulin resistance.

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PALABRAS CLAVE
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Importancia de niveles elevados de triglicéridos entre los factores de riesgo coronario nuevos

Resumen
Introducción: El análisis de nuevos factores de riesgo cardiovascular constituye un tema de amplio debate en la investigación cardio-metabólica.
Objetivo: Determinar los principales factores que contribuyen a la clasificación de sujetos en las categorías de mayor riesgo coronario en individuos adultos de la ciudad de Maracaibo, Venezuela.
Métodos: Estudio descriptivo, trasversal con muestreo aleatorio multietapas en 1.379 individuos pertenecientes al Estudio de Prevalencia de Síndrome Metabólico de la Ciudad de Maracaibo (EPSMM). Estos fueron clasificaron de acuerdo con el riesgo coronario mediante la fórmula Framingham-Wilson adaptada para nuestra población. Se evaluó la asociación entre diversos factores de riesgo mediante un modelo de regresión logística ordinal.
Resultados: Se evaluaron 1.379 sujetos (mujeres: 55,9%; n = 771), de los cuales un 66,2% (n = 913) fueron clasificados en riesgo coronario bajo. Tanto en el contexto univariante ($\chi^2 = 112,35$; $p < 0,00001$) como multivariante [OR: 3,98 (2,39-6,63); $p < 0,01$] el principal factor asociado para ser clasificado en las categorías de riesgo más elevado fue la hipertrigliceridemia.
Conclusión: Existen numerosos factores que deberían ser incluidos en los modelos de predicción empleados en el mundo, en cuyo caso las dislipidemias: hipertrigliceridemia, hiperlipoproteinemia (a), e insulinorresistencia son las más importantes en nuestra población.

Introduction

Since the mid-twentieth century the study of cardiovascular risk factors has represented a high priority issue in the global epidemiology field, given the progressive increase in the last decades for the incidence of risk factors and cardiovascular disease,[1] which have been discovered and added into the estimation systems for large studies like Framingham, SCORE, PROCAM, QRISK, among others.[2]

However, there are a growing group of variables that plays an important role in cardiovascular disease and that are still under discussion, whether for their role as simple biomarkers or as truly mediators independently associated with the development and progression of atherosclerosis in the clinical practice.[3] Also, its appearance has led to the conformation of various subgroups of individuals according to the presence or absence of obesity. These subgroups have been defined as metabolic phenotypes and whose importance in the practical has been debated in recent years.[4]

Based on these scenarios, our research team has previously calibrated the Framingham-Wilson equation for more specific assessment of coronary risk in our population,[5] likewise assessed the epidemiological behavior of some innovative risk factors.[6] Although these findings were made in a univariate context, they demonstrated the potential effect of these variables on the occurrence of a coronary event. Therefore, the aim of this study was to determine the main factors that contribute to the classification of individuals with higher coronary risk in the adult population from Maracaibo, Venezuela and thereby establish additional control strategies to those established risk factors.

Materials and methods

Sample selection

This report is part of the Maracaibo City Metabolic Syndrome Prevalence Study, a cross-sectional study which purpose was to identify metabolic syndrome and cardiovascular risk factors in the adult population from Maracaibo, the second largest city of Venezuela. The sample (1,986 individuals) was calculated based on estimations of the population of the city by our National Institute of Statistics (1,428,043 inhabitants for the year 2007). A total of 244 subjects (12%) were added for oversampling, in order to increase accuracy of the estimates obtained from smaller subgroups from the overall sample, amounting to a total of 2,230 individuals. Maracaibo is divided in parishes, each of which was proportionally sampled with a multistage cluster method: In the first stage, clusters were represented by sectors from each of the 18 parishes, selecting 4 from each parish by simple randomized sampling. In the second phase, clusters were represented by city blocks within each sector, which were selected by simple randomized sampling. Further details of the sampling process have been previously published elsewhere.[7]

Calibration of the Framingham-Wilson equation for the population of Maracaibo

From the 2,230 individuals selected include those below 30 and over 74 years old as well as those with a history of ischemic heart disease (for the application of the

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