Original article

Trends in Risk Factors and Treatments in Patients With Stable Ischemic Heart Disease Seen at Cardiology Clinics Between 2006 and 2014

Alberto Cordero,[a,*] Enrique Galve,[b] Vicente Bertomeu-Martínez,[a] Héctor Bueno,[c] Lorenzo Fácila,[d] Eduardo Alegría,[e] Ángel Cequier,[f] Emilio Ruiz,[g] and José Ramón González-Juanatey[h]

[a] Departamento de Cardiología, Hospital Universitario de San Juan, San Juan de Alicante, Alicante, Spain
[b] Departamento de Cardiología, Hospital Vall d'Hebron, Barcelona, Spain
[c] Departamento de Cardiología, Hospital 12 de Octubre, Madrid, Spain
[d] Departamento de Cardiología, Hospital General de Valencia, Valencia, Spain
[e] Departamento de Cardiología, Policlínica Gipuzkoa, San Sebastián, Guipúzcoa, Spain
[f] Departamento de Cardiología, Hospital de Bellvitge, L'Hospitalet de Llobregat, Barcelona, Spain
[g] Departamento Médico, Laboratorios Ferrer, Barcelona, Spain
[h] Departamento de Cardiología, Complejo Hospitalario Universitario de Santiago de Compostela, Santiago de Compostela, A Coruña, Spain

A B S T R A C T

Introduction and objectives: Chronic ischemic heart disease is the most prevalent of all cardiovascular diseases. Patients are at high risk of complications. In recent decades, changes may have occurred in the clinical characteristics of the disease, its treatment and control of risk factors.
Methods: A direct comparison of 2 national registries of patients with chronic ischemic heart disease carried out in 2006 (n = 1583) and 2014 (n = 1110).
Results: We observed statistically significant differences between the 2 registries, with a higher percentage of men and smokers in the 2014 registry, but a lower prevalence of diabetes mellitus and hypertension. Heart failure and stroke were more prevalent in the 2006 registry. Patients in the 2014 registry had better results for lipid profile, blood glucose, creatinine, and glomerular filtration rate. We observed higher use of recommended drugs for secondary prevention and an increased percentage of patients receiving optimal medical therapy, from 32.5% to 49.5% ($P < .01$). Use of high-intensity statin doses also increased from 10.5% to 42.8% ($P < .01$). We found better control of some risk factors (improved dyslipidemia, heart rate, and blood glucose in patients with diabetes) but worse blood pressure control.
Conclusions: The clinical profile of patients with chronic ischemic heart disease is similar in the 2 registries. There has been an improvement in patients' medical therapy and dyslipidemia control, blood glucose, and heart rate, but there is still much room for improvement in the control of other cardiovascular risk factors.

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Tendencias en factores de riesgo y tratamientos de pacientes con cardiopatía isquémica estable atendidos en consultas de cardiología entre 2006 y 2014

R E S U M E N

Introducción y objetivos: La cardiopatía isquémica crónica es la enfermedad cardiovascular más prevalente. Los pacientes tienen alto riesgo de presentar nuevas complicaciones y sus características clínicas, sus tratamientos y el control de factores de riesgo pueden haber cambiado en las últimas décadas.
Métodos: Comparación directa de dos registros nacionales de pacientes con cardiopatía isquémica crónica realizados en 2006 (n = 1.583) y 2014 (n = 1.110).
Resultados: Se observaron diferencias estadísticamente significativas entre un registro y otro, como mayor porcentaje de varones y fumadores entre los pacientes del registro de 2014, pero menor prevalencia de diabetes mellitus e hipertensión arterial; la insuficiencia cardiaca y el accidente cerebrovascular fueron más prevalentes en el primer registro. Los pacientes del registro de 2014 tenían valores más favorables en perfil lipídico, glucemia, creatinina y filtrado glomerular. Se observó mayor utilización de los fármacos recomendados en prevención secundaria y un incremento del tratamiento médico óptimo del 32,5 al 49,5% (p < 0,01). También se observó un incremento de la utilización de dosis altas de estatinas (del 10,5 al 42,8%; p < 0,01). Respecto al control de factores de riesgo, se observó

* Corresponding author: Departamento de Cardiología, Hospital Universitario de San Juan, Ctra. Valencia-Alicante s/n, 03550 San Juan de Alicante, Alicante, Spain.
E-mail address: acorderofort@gmail.com (A. Cordero).

mejora en dislipemia, frecuencia cardiaca y glucemia de los pacientes diabéticos, pero un descenso en el control de la hipertensión arterial.

Conclusiones: Los perfiles clínicos de los pacientes con cardiopatía isquémica crónica de un registro y otro son similares. Se ha mejorado en el tratamiento médico de estos pacientes y el control de la dislipemia, la glucemia y la frecuencia cardiaca, aunque sigue habiendo amplio margen de mejora en el control de los demás factores de riesgo cardiovascular.

> **Abbreviations**
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> HT: hypertension
> IHD: ischemic heart disease
> OMT: optimal medical therapy

INTRODUCTION

Ischemic heart disease (IHD) is largely responsible for cardiovascular diseases still being the leading cause of death in the world.[1] The reduced mortality rate in acute IHD[2–4] has led to a significant increase in patients with stable IHD[5] who are at high cardiovascular risk.[6] This population benefits from maximum control of cardiovascular risk factors[7] and maximum adherence to medical therapy.[8–10]

Several publications have highlighted the changes in the clinical profile of patients with acute IHD,[2,4,11] but there is less evidence for patients with stable chronic IHD. A comparison of the 2 CARDIOTENS registries showed that, although the prevalence of heart failure and atrial fibrillation has increased by almost 30% among patients seen at cardiology clinics, chronic IHD is still the most prevalent heart disease, accounting for 50% of these patients.[12] National data have recently shown that the prevalence of patients with chronic stable angina is less than 3.0% in the general population.[13] However, there is an increasing prevalence of asymptomatic patients with a history of acute myocardial infarction[5,14,15] or coronary revascularization.[15–17] In view of the above data, we conducted a comparative study of 2 large registries of patients with chronic IHD in 2006 and 2014, with the aim of analyzing differences in clinical profiles, treatments, and control of risk factors in chronic IHD.

METHODS

Study Design

We used the data from 2 registries compiled with a similar method by the Spanish Society of Cardiology. The TRECE registry[14] included patients seen in 2006. Its results have already been published. The REPAR registry (*Registro de la dislipemia en pacientes de muy alto riesgo cardiovascular* [Registry of dyslipidemia in patients at very high cardiovascular risk]) included patients seen in 2014. This article presents the first data from a study that analyzed only patients with chronic IHD. Both registries were compiled from consecutive patients seen at outpatient clinics. Patients were recruited for the TRECE registry from cardiology, internal medicine, and primary care clinics. For the purpose of this study, we analyzed patients recruited by cardiologists only

(1583 out of a total of 2897 patients). The inclusion criterion for both registries was stable chronic IHD. The REPAR registry was created to conduct a prospective, observational, multicenter, national study. The aim of this study was to identify the percentage of patients at very high cardiovascular risk who achieve the therapeutic target of a low-density lipoprotein cholesterol value of < 70 mg/dL. Inclusion criteria were age > 18 years and very high cardiovascular risk, defined as fulfilment of 1 of the following criteria: SCORE (Systematic COronary Risk Evaluation) > 10%, documented cardiovascular disease, diabetes mellitus with target organ disease, or moderate or severe kidney dysfunction.[18] Exclusion criteria were active malignant disease together with chemotherapy, human immunodeficiency virus with antiretroviral therapy, active hepatitis (with positive serology and active disease), any disease that, in the investigator's opinion, could confound the study results, and any situation that prevented the investigator's access to required study data. The final exclusion criterion was patients who had been enrolled in previous registries. The aim of this criterion was to include new patients and thus compare them with patients in other registries. The study protocol and informed consent were approved by at least 1 site in each Spanish autonomous community, except Cantabria, which abstained from participating. The protocol consisted of an enrolment visit and another visit 1 year later to collect all the risk factors, treatments, and routine blood test results from the previous 2 months. For analysis purposes, we used the data from the baseline visit of all patients with IHD. A total of 1291 patients were recruited at the first visit, 33 of whom were ruled out because they fulfilled exclusion criteria. The final cohort consisted of 1258 patients from 15 autonomous communities.

Scientific sections of the Spanish Society of Cardiology developed both registries. The Hypertension, Ischemic Heart Disease, and Clinical and Outpatient Cardiology Sections were responsible for the TRECE registry, and the Cardiology Risk and Cardiac Rehabilitation Section developed the REPAR registry.

Definition of Variables

All therapies and doses received by patients before the visit were recorded, as well as any changes made. Optimal medical therapy (OMT) was considered as concomitant therapy with an antiplatelet agent, beta-blocker, statin, and an angiotensin-converting enzyme inhibitor or an angiotensin receptor blocker.[9,10,19] In accordance with the 2013 ACC/AHA (American College of Cardiology/American Heart Association) guideline,[20] therapy with high-intensity statin doses was considered as atorvastatin 40 mg/d to 80 mg/d or rosuvastatin 20 mg/d to 40 mg/d; moderate-intensity statin doses were considered as atorvastatin 20 mg/d or simvastatin 20 mg/d to 40 mg/d; and low-intensity statin doses, atorvastatin 10 mg/d, simvastatin 10 mg/d or pravastatin