

Management of Non-ST-Segment-Elevation Acute Coronary Syndromes in Spain. The DESCARTES (Descripción del Estado de los Síndromes Coronarios Agudos en un Registro Temporal ESpañol) Study

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Introduction and objectives. There is little information regarding the management of non-ST segment elevation acute coronary syndromes (NSTEMI) in Spain from a population-based perspective. Our objective was to study the status of clinical care in patients with NSTEMI in Spain from a representative perspective of the situation on a national level.

Patients and method. A prospective registry was used for consecutive patients with NSTEMI admitted to 52 Spanish hospitals with different cardiological facilities. Centers that fulfilled the quality control criteria for the study were randomly selected for inclusion.

Results. Between April and May, 2002, 1877 patients were recruited. Median age was 69 years, 93% had at least one risk factor and 73% had antecedents of cardiovascular disease. The electrocardiogram on admission was abnormal in 76% of the cases, and troponin levels were elevated in 53%. Twenty-seven percent of the patients were admitted to a cardiac care unit or intensive care unit. The rates of use of diagnostic techniques were: echocardiography 56%; non-invasive test for detection of ischemia 39%; coronary angiography 41%. During hospitalization, 24% underwent coronary revascularization, 88% received aspirin, 81% heparin, 37% clopidogrel, 12% glycoprotein IIb/IIIa inhibitors, 63% β -blockers, 46%

angiotensin-converting enzyme inhibitors, and 52% statins. The final diagnosis was angina in 54%, myocardial infarction in 28%, and other in 18%. Mortality was 3.7% at 28 days and 7.8% at 6 months.

Conclusions. DESCARTES is the first representative registry of NSTEMI management in Spain. It shows that despite their high-risk profile, these patients receive suboptimal medical care according to current clinical recommendations.

Key words: Acute coronary syndromes. Registry. Management.

Manejo del síndrome coronario agudo sin elevación del segmento ST en España. Estudio DESCARTES (Descripción del Estado de los Síndromes Coronarios Agudos en un Registro Temporal ESpañol)

Introducción y objetivos. Se dispone de escasa información acerca de la situación asistencial a escala poblacional de los síndromes coronarios agudos sin elevación del segmento ST (SCASEST) en España. El objetivo es conocer la situación de la atención médica a los pacientes con SCASEST en España, desde una perspectiva representativa de la realidad estatal.

Pacientes y método. Registro prospectivo de pacientes consecutivos con SCASEST ingresados en 52 hospitales españoles con distintos recursos cardiológicos, seleccionados al azar y que cumplieron con los criterios de control de calidad del estudio.

Resultados. Entre abril y mayo de 2002 se reclutó a 1.877 pacientes con una edad promedio de 69 años. El 93% tenía algún factor de riesgo y 73% antecedentes cardiovasculares. Un 76% presentaba un electrocardiograma anormal y un 53% elevación de las troponinas. El 27% fue ingresado en una unidad coronaria o de cuidados intensivos. Se estudió al 56% de los pacientes mediante ecocardiografía, al 39% mediante una prueba de

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The annex includes a list of researchers and hospitals participating in the DESCARTES study.

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ABBREVIATIONS

DESCARTES: *Descripción del Estado de los Síndromes Coronarios Agudos en un Registro Temporal Español.*

CCL: cardiac catheterization laboratory.

AMI: acute myocardial infarction.

NSTE ACS: non-ST segment elevation acute coronary syndromes.

CU: coronary unit.

detección de isquemia y al 41% mediante coronariografía. En el hospital, un 88% recibió aspirina, un 81% heparina, un 37% clopidogrel, un 12% inhibidores de la glucoproteína IIb/IIIa, un 63% bloqueadores beta, un 46% inhibidores de la enzima de conversión de la angiotensina y un 52% estatinas. Se realizó revascularización coronaria en el 24% de los pacientes. El diagnóstico final fue angina en el 54%, infarto en el 28% y otros diagnósticos en el 18%. La mortalidad fue del 3,7% a los 28 días y del 7,8% a 6 los meses.

Conclusiones. DESCARTES es el primer registro representativo de la actividad asistencial en la atención a los SCASEST en España. Se demuestra que, pese a que son pacientes de alto riesgo, reciben una atención subóptima según lo recomendado.

Palabras clave: Síndrome coronario agudo. Registro. Tratamiento.

INTRODUCTION

The clinical perspective of non-ST segment elevation acute coronary syndromes (NSTE ACS) has changed greatly in recent years. The clinical concept itself has only recently been coined as a result, above all, of a better understanding of the pathophysiological processes ACS have in common. The first clinical practice guidelines on NSTE ACS management were not published until 2000¹⁻³ and were quickly revised in the light of various studies^{4,6} that added information of particular relevance to therapy. At the same time, a joint committee of the European Society of Cardiology and the American College of Cardiology⁷ proposed a controversial change in the definition of acute myocardial infarction (AMI) that was received with no little skepticism by Spanish cardiologists.⁸

The Spanish Society of Cardiology (SEC) Section for Ischemic Heart Disease perceived that the haste and magnitude of changes to the definition and to recommendations for NSTE ACS patient management might make appropriate, homogeneous medical atten-

tion more difficult. A further difficulty was the fact that the numerous specialists who participate in the diagnosis and treatment of NSTE ACS patients (emergency room physicians, cardiologists, intensivists, internists, etc) do not always apply homogeneous criteria. However, despite these peculiarities of clinical care and the fact that NSTE ACS constitutes the clinical presentation of ischemic heart disease that causes most urgent hospital admissions, little information is available about the clinical care of these patients in Spain.

To evaluate the reality of this situation, the SEC Section for Ischemic Heart Disease and Coronary Units initiated a project to describe the state of ACS in Spain thru a registry given the acronym DESCARTES. This article describes the characteristics, management and prognosis of these patients.

PATIENTS AND METHODS

Design

This prospective, observational, cohort study aimed to register all consecutive NSTE ACS patients hospitalized during April 2002 in a representative sample of Spanish hospitals, both public and private, accustomed to managing these patients.

Selection of Centers (Figure 1)

From Spanish Ministry of Health records, we compiled a list of ≥ 50 bed, non-specialist centers (i.e. hospitals specializing in pediatrics, trauma, obstetrics, etc were excluded). Using this list, we conducted a telephone survey to identify centers that received ≥ 5 NSTE ACS admissions/month. From centers that met this criterion, we made a random selection classifying centers in 3 groups according to the cardiological facilities available: *a*) centers with cardiology service, coronary unit (CU) or intensive care unit (ICU), and cardiac catheterization laboratory (CCL) where coronary interventions are performed; *b*) centers with CU or ICU, without CCL; and *c*) centers without cardiology service, CU or ICU, or CCL. The number of centers in each group was proportional to the volume of patients treated. In addition, according to the average number of admissions for each hospital type, we estimated that they admitted >50 , 20-50, or 5-19 NSTE ACS patients/month, respectively, in each group.

From these estimates, we calculated that to recruit 2000 patients in 1 month we would need to invite 66 hospitals to participate: 22 primary, 36 secondary, and 19 tertiary care centers. The projected sample size was set at some 1500 patients in order to achieve ± 0.025 precision in observed proportions of 50% (maximum standard deviation). We over-selected by 25% to compensate for possible sample loss following quality con-

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