

The Management of Non-ST Segment Elevation Acute Coronary Syndromes. The Acceptance of Diversity Could Be Crucial

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Current classification of acute coronary syndromes (ACS) enables us to distinguish between 2 groups of patients clearly defined in terms of approaches to therapy: patients with ST segment elevation ACS are reperfused as early as possible and patients with non-ST segment elevation ACS (NSTEMI ACS) receive antithrombotic and antiischemic therapy. However, coronary heart disease is really a “continuum” from stable angina to Q wave acute myocardial infarction (AMI), passing through unstable angina and non-Q wave AMI, which are 2 components of NSTEMI ACS.

The fundamental physiologic reality of NSTEMI ACS is the rupture of plaque and formation of non-occlusive thrombus. Additional pathophysiologic factors can condition symptoms. Inflammation, vasoconstriction of epicardial artery(ies) or small vessel, the degree of baseline coronary stenosis and myocardial oxygen consumption are known to contribute to clinical condition¹ to a greater or lesser extent. In fact, Braunwald classifies 9 groups based on clinical presentation (secondary, primary or post-infarction) and severity (recent onset or progressive; rest with episodes in the last 48 hours or not) that could be further subdivided according to electrocardiogram (ECG) readings and troponin levels.²

Patients with NSTEMI ACS are characterized by a wide variety of clinical conditions and multiple pat-

hophysiologic phenomena which lead to equally varied prognoses. This clearly justifies attempts to stratify patient risk and establish risk-related therapeutic guidelines. Here, the introduction of specific markers of necrosis has been decisive. The prognostic value of many biomarkers has been described: markers of inflammation, hemodynamic stress, thrombosis, etc. It has even been suggested that determining various markers³ might improve prognostic evaluation. Whatever the case may be, clinical presentation, ECG findings and markers of necrosis, specifically troponins, are the pillars of clinical practice guideline recommendations.

In recent years, antithrombotic agents (low molecular weight heparins, glycoprotein IIb/IIIa inhibitors, clopidogrel), percutaneous interventions and early administration of statins, have profoundly changed therapeutic management of NSTEMI ACS. Application of these more recent therapies varies by country, hospital type and specialty of the physician responsible,^{4,5} which explains and possibly justifies differences in NSTEMI ACS patient management revealed in multinational registries.^{6,7}

The DESCARTES study, published in this issue of *REVISTA ESPAÑOLA DE CARDIOLOGÍA*,⁸ constitutes an especially lucid instrument to help us accept this scenario. Faced with a complex, multifactor syndrome such as NSTEMI ACS, it is essential we obtain reliable data that is representative of real-life in Spain. The DESCARTES study methodology ensures this. Stratified, random selection of hospitals means 23% of patients studied were attended in hospitals serving rural areas, 18% in hospitals with coronary units but without cardiac catheterization laboratories and 59% in tertiary care centers, providing a much wider perspective than the previous, tertiary care-based registry.⁹ Externally audited quality control, infrequent in registries of this type, increases the reliability of results. In fact, 7 hospitals were excluded for failing to meet quality control criteria.

The DESCARTES results largely coincide with si-

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milar international studies. A very high percentage (>70%) of NSTEMI ACS patients present clinical antecedents of atherothrombosis; the rate of severe acute phase complications is considerable but, above all, 6-month morbidity and mortality following an acute event is high. In spite of this, real-life, daily practice differs substantially from clinical practice guideline recommendations, as in other registries, and efficacious measures are constantly underused⁴⁻⁷ to a greater or lesser extent.

Some data are, perhaps, worrying. In the second semester of 2001, beta-blocker use was >90% and intervention rate 35%-40% in Europe and the USA according to GRACE⁴. In 2002 in Spain, beta-blocker use was some 60% and intervention rate 20%.

The DESCARTES study also casts shadows. Almost one fifth (18%) of patients studied was discharged with the diagnosis of "chest pain of non-coronary/unknown origin," meaning we cannot be certain that these were NSTEMI ACS patients. This figure is similar to the Spanish PEPA registry findings⁹ and much greater than the 7% reported by GRACE.⁶ Both DESCARTES and PEPA include data on these patients in their results whereas GRACE and the Euro-Heart Survey exclude it.^{6,7} This methodological difference further complicates any comparison of data and results.

It is also surprising that only 499 of 810 patients with positive tests for troponin elevation were discharged with a diagnosis of AMI. This means that 311 patients (16%) were diagnosed with elevated troponin levels due to unstable angina, contradicting the current definition of AMI and the internal DESCARTES definitions which specified that elevation of any biochemical marker during hospitalization in patients with an initial diagnosis of unstable angina should be considered AMI. This clearly raises questions about 6-month mortality data in the subgroups.

Nonetheless, the foundations have been laid. The Section for Ischemic Heart Disease and Coronary Units of the Spanish Society of Cardiology has a substantial database covering possible local peculiarities of clinical practice and enabling comparison with future registries constructed by a similar method.

Perhaps, then, this is an appropriate time for reflection. The reality of NSTEMI ACS is unlikely to change substantially in the immediate future. New diagnostic and therapeutic resources will come available but the intrinsic variability of the syndrome and differences in management from country to country and from hospital to hospital within any one country will persist. Suboptimal fulfillment of guidelines will continue although this does not exempt us from trying to correct the deficiencies. From this starting point, we need to move beyond the mere description of "real life" and seek to discover how near or how far local patterns of practice are from achieving opti-

mal results. For example, the DESCARTES study reports that in 2002 only 11% of NSTEMI ACS patients underwent coronary angiography within 24 hours of admission. This means the early invasive strategy is not being widely adopted in Spain. However, "semi-early" management may be more frequent than one Spanish tertiary center, where catheterization is performed at 4 days post-admission, would lead us to believe.¹⁰ Knowing whether this difference in risk-adjusted management has repercussions on clinical results is important and has already been analyzed in another context with different results.^{5,11} As suggested elsewhere,¹² future registries should include the analysis of therapy effectiveness among their objectives.

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