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CONFLICTS OF INTEREST

S. Lázaro-Masedo and N. Ramos-Carrera are linked to SPRIM, who carried out consulting activities for the *Fundación Eroski*.

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Does Implementation of the Infarction Code Lead to Changes in the Treatment and Prognosis of Patients With Non-ST Elevation Acute Coronary Syndrome?

¿La implantación del código infarto implica cambios en el tratamiento y el pronóstico de los pacientes con síndrome coronario agudo sin elevación del ST?

To the Editor,

We read with interest the article by Cordero et al.,[1] which analyzed the effects of implementing an infarction code program on the treatment and prognosis of patients with acute coronary syndrome.

Firstly, we would like to congratulate the authors for the elegant description of the benefits that such programs have on the management of ST-elevation acute coronary syndrome (STEACS). They achieved outstanding results, with the rate of primary angioplasty in STEACS patients increasing from 51.9% to 94.9% in their hospital.

We would also like to point out that the implementation of such networked care systems for the emergency management of STEACS could have led to NSTEACS patients being pushed into the background, even though these patients form the majority of acute coronary syndrome patients admitted to our hospitals.[2] We would like to further congratulate the authors for the inclusion of these patients in their study. We agree that, although theoretically the main objective when implementing an infarction code program is to improve STEACS management by facilitating access to primary angioplasty, as this study demonstrates, implementing standardized protocols and care networks can also improve NSTEACS management. However, we would like to make some comments we feel are pertinent.

The benefits of implementing an infarction code for patients with STEACS have already been described; therefore, the most interesting part of this study is, in our opinion, the analysis of the changes in treatment and prognosis for patients with NSTEACS. From the authors' description, it appears that implementation of the code had no significant effect on the NSTEACS subgroup. In fact, it appears that the reductions in hospital stay and intensive care stay and the increased revascularization rate in the first 48 hours correspond only to patients with STEACS; in patients with NSTEACS there were no differences in the time to revascularization or in revascularization rate.[1] Although these variables were unchanged for the group of all NSTEACS patients, there may have been some differences in high-risk NSTEACS patients, who require early invasive treatment[2] and therefore should benefit more from the implementation of such a protocol. If such differences were present, this could partly explain the reduction in overall mortality in high-risk acute coronary syndrome patients. It would be interesting to know how many patients with NSTEACS were considered high risk according to current clinical practice guidelines,[2] and if implementation of the program led to an increase in the percentage of these patients receiving coronary angiography and revascularization in the first 24 hours.

If such differences in high-risk NSTEACS patients were not present, the trend seen toward reduced mortality in NSTEACS patients but not in STEACS patients would be remarkable, considering that there was no increase in the early revascularization rate in NSTEACS patients, and that the patient risk profile was higher in the second study period, according to the GRACE score.[1] It would be interesting to know the authors' opinions regarding changes in medical treatment after implementation of the program and other factors that may have played a role in this finding.

Regarding the reduction in mean stay for STEACS patients, we would also like to ask the authors about one of the more contentious organizational aspects of this type of networked care: organizing patients' return transfer to their original referring hospitals after primary angioplasty. It would be interesting to know more details, such as if these patients were ever admitted to the intensive care unit after primary angioplasty and before

returning to their referring hospital or if they were transferred directly from the catheterization laboratory, and whether or not these details could have had any influence when calculating the hospital stay times and intensive care stay times.

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Does Implementation of the Infarction Code Lead to Changes in the Treatment and Prognosis of Patients With Non-ST Elevation Acute Coronary Syndrome? Response

¿La implantación del código infarto implica cambios en el tratamiento y el pronóstico de los pacientes con síndrome coronario agudo sin elevación del ST? Respuesta

To the Editor,

We appreciate the compliments and comments from the team at the Catheterization Unit of the *Hospital de Cuidad Real*. We agree that the results observed in patients with non—ST-elevation acute coronary syndrome (NSTEACS) in our study[1] are difficult to explain, given that the infarction code centers around ST-elevation acute coronary syndrome. Regarding their first question, the percentage of patients with NSTEACS classified as high risk increased from 3.9% to 12.6% ($P = .01$) after implementation of the infarction code. In this high-risk NSTEACS subgroup, the total revascularization rate increased from 62.5% to 87.5% ($P = .04$), but the rate of revascularization in the first 24 hours did not increased (69.6% vs 62.5%; $P = .89$).

In response to their second question, in NSTEACS patients, the biggest change in drug treatment between the 2 periods was the use of the new antiplatelet agents, which increased from 1.4% to 32.6% ($P < .01$): ticagrelor, from 0% to 26.3%; and prasugrel, from 1.4% to 6.3% ($P < .01$ for both). This coincided with the dissemination of the antiplatelet therapy protocol in the infarction code, and is in line with the recommendations in clinical practice guidelines.[2] The increased rate of revascularization, the increased use of new antiplatelet agents, and the general reorganization of the services involved in the infarction code could explain the benefits observed in NSTEACS patients.

With the exception of 1 privately-managed hospital that continued to use thrombolysis, primary angioplasty became practically the only reperfusion strategy in our area. Unless clinically contraindicated, all patients were transferred directly from the catheterization lab to the intensive care unit of their referring hospital. The organization of the infarction code in Alicante with 2 out of hours care areas means that the province's resources are concentrated in a rational and coherent way. This, combined with the endeavor of the professionals involved, has allowed primary angioplasty to enter into routine use, with the consequent benefits to the population.

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