Care Network for ST-elevation Myocardial Infarction: What Is the Ideal Catchment Area for Primary Angioplasty?

Redes de atención al infarto con elevación del ST: ¿cuál es el área idónea de referencia para angioplastia primaria?

To the Editor,

Clinical practice guidelines recommend establishing regional networks as the most appropriate system for attending patients with ST-elevation acute coronary syndrome.

Data are available on the minimum number of primary percutaneous coronary interventions (PPCIs) per center and operator to guarantee appropriate care. However, little has been published on the maximum catchment population per center. Excessively large catchment populations may lead to patient overlap, overload of the on-call teams, saturation of beds for acute events in the recipient hospital, and interference with elective percutaneous interventions. Although the European Cardiology Society suggests an average population size of half a million inhabitants (with a lower limit of 0.3 million and an upper limit of 1 million), the actual figures in Europe range from 31,300 to 6,533,000 inhabitants.

In the design of the network in the Spanish region of Asturias in 2011, there was debate about the need to concentrate all activity in a previously existing center or to take advantage of the opening of a second center to distribute the population. In the end, the latter option was chosen. During this debate, it was decided to analyze the percentage of patients with an indication for PPCIs who had overlapped in time in our region, and who would have experienced a delay in the door-to-balloon time on account of all the activity being concentrated in the initial center.

Asturias has a population of 1,077,410 inhabitants and 8 health districts (Figure). The regional plan establishes that districts I and II, with populations of 48,788 and 29,484 inhabitants, respectively, conduct fibrinolysis in a nonhospital setting, if possible, with immediate transfer to the Hospital Universitario Central de Asturias in Oviedo, given that a first contact-balloon time < 120 min would not be possible. In the remaining 6 districts, with a population of 999,138 inhabitants, PPCIs is the option. Of these, districts III, IV, and VII are referred to Oviedo while the remaining 3 districts, V, VI, and VIII, are referred to the Hospital de Cabueñes, in Gijón. Oviedo has 2 rooms in operation from 8:00 am to 3:00 pm and 1 room in operation from 3:00 pm to 10:00 pm on week days, but with an additional on-call team, so that on week days from 10:00 pm onwards, 2 emergencies can be attended at the same time. In contrast, Hospital de Cabueñes can only provide coverage for a single patient at a time. With this structure, PPCIs is available to 92.8% of the population, while only 7.2% are covered by fibrinolysis.

Between May 1, 2013 and April 30, 2014, the time between activation of the catheterization team and the end of the procedure was analyzed for all PPCIs performed in the region. The percentage of patients who overlapped in time and who, for this reason, had experienced a delay in reperfusion was calculated. Because 1 of the 2 centers had 2 rooms, if 2 patients overlapped during daytime on week days in this center, they were not considered as coincident.

In total, 632 activations were recorded, that is, 590 activations per million inhabitants. In 531 of these cases, PPCIs was performed, corresponding to 84.1% of the total number of activations and 496 PPCIs per million inhabitants. The patients’ clinical characteristics and the activation times are presented in the Table. Of the 632 activations, 104 procedures (16.5%) were performed with overlap in the reported interval, which would have meant the procedure was delayed in 1 out of every 2 patients (52 cases, 8.2%). Counted according to PPCIs, of these 104 cases, PPCIs was performed

Figure. Asturian Regional Plan for care of ST-elevation acute coronary syndrome.
Changes in Clinical Profile, Epidemiology and Prognosis of Left-sided Native-valve Infective Endocarditis Without Predisposing Heart Conditions

Cambios en el perfil clínico, epidemiológico y pronóstico de la endocarditis infecciosa nativa izquierda sin lesión cardiaca predisponente

To the Editor,

Traditionally, infective endocarditis (IE) has been considered as a disease affecting patients with underlying heart disease (HD).1 This profile appears to have changed in recent decades, in that IE affects both patients with degenerative valve disease and those with no apparent HD.1–4 Various studies have shown that the proportion of patients with IE and no underlying HD has increased in our setting.2,5,6 Although each type of IE appears to have distinct epidemiologic and prognostic characteristics,5,6 it is not known whether the profile of non-HDIE has changed in recent years, which could have implications for prognosis. The objectives of our study were: a) to compare the characteristics of HD-associated left-sided native-valve IE (HDIE) and non-HD-associated left-sided native-valve IE (non-HDIE) diagnosed at our center between 1987 and 2013, and b) to study changes in the profile of non-HDIE during this period.

We analyzed a series of 420 consecutive patients diagnosed with IE between 1987 and 2013, of which 240 (57%) had left-sided native-valve IE. Diagnosis was made according to the Von Reyn, Duke and modified Duke criteria, depending on the time period. The management protocol did not change over this period, except for the introduction of transeosophageal echocardiography during the 1990s. Each patient was classified as having either HDIE or non-HDIE, depending on the results of transthoracic and transeosophageal echocardiography during the episode of IE, previous echocardiograms, medical history, and surgical and autopsy findings. The valve was considered normal when the portions of the leaflets that were unaffected by infection were normal and there was no chordal involvement or commissural fusion.7 The active phase of the disease was defined as the first 6 weeks from symptom onset. Urgent surgery was defined as that which could not be postponed for more than 24 hours without risk to the patient’s life, while elective surgery was defined as that carried out after 24 hours.

Of the 240 cases of left-native valve IE, 104 (43%) were classified as non-HDIE, and the remaining 136 (57%) were diagnosed with HDIE. The proportion of cases of non-HDIE increased significantly,