

Acute coronary syndrome and sudden death in patients attended at the Emergency Department

Síndrome coronario agudo y muerte súbita en pacientes atendidos en el Servicio de Emergencias

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To the Editor:

Sudden death is probably the most important challenge in modern cardiology. Its incidence gradually increases with age, but significantly from 35-40 years, and is particularly high in the acute phase of acute myocardial infarction. It is also frequent in the chronic phase of this disease and in any cardiopathy^{1,2}. The term acute coronary syndrome refers to a range of sudden clinical symptoms due to compromised coronary circulation. Hence, the most frequent cause is an imbalance between oxygen supply and demand, secondary to vessel occlusion due to cholesterol plaque rupture between the intima and media layers^{3,4}. In Ecuador, cardiovascular diseases currently rank first among mortality causes⁵. The Ministry of Health reported that, in 2009, ischemic

heart disease reached a mortality rate of 6.5 per 100 thousand inhabitants; by 2010, according to the National Institute of Statistics and Censuses (NISC) this rate amounted to 14.1 per 100 thousand inhabitants⁵.

The objective of the investigation was to determine the incidence of acute coronary syndrome, sudden death, and associated coronary risk factors, in patients with chest pain.

A prospective, descriptive, non-experimental study was conducted in a population of 14187 patients managed in the Emergency Department at the Verdi Cevallos Balda Hospital in Portoviejo Canton, Ecuador, from November 2009 to October 2010. The sample consisted of 204 patients admitted for chest pain.

The following variables were considered: sex, age, origin, clinical presentation and risk factors.

Their clinical histories were selected and analyzed to apply the data collection form. Subsequently the information was obtained and tabulated. The results are presented in tables and graphs, and according to these we can state that the incidence of ischemic chest pain in the Emergency Service at the

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Verdi Cevallos Hospital is 1.43 (204/14187). The 69.1% of patients were male, with a predominance of the age group between 40 and 70 years (52.4%), followed by those over 70 (42.2%). Only 5.4% were under 40 years old. 62.7% of the sample (128 patients) had a diagnosis of unstable angina, 5 (2.4%) had acute myocardial infarction and only one (0.5%), sudden death (**Figure**).

Cardiovascular risk factors are described in **table 1**. It is worth noting that there were patients without any demonstrable risk factor. High blood pressure predominated (36.7%), followed by a history of chest pain (19.6%), smoking (11.8%) and previous infarction (10.8%).

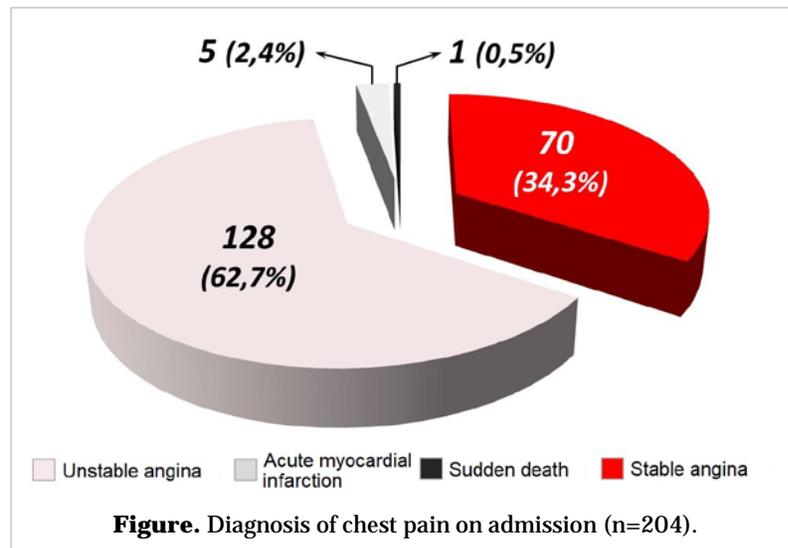


Figure. Diagnosis of chest pain on admission (n=204).

Table 1. Distribution of patients according to their main cardiovascular risk factor (n=204).

Risk factor	Nº	%
High blood pressure	75	36.7
Smoking	24	11.8
Family background	14	6.9
Diabetes mellitus	5	2.4
Previous infarction	22	10.8
Previous chest pain	40	19.6
Dyslipidemia	12	5.9

Table 2. Distribution of patients according to ECG findings.

Triggering factor	Nº	%
ST-segment elevation or new-onset LBBB	5	2.4
ST segment depression or T-wave inversion	196	96.1
ST segment or T-wave nonspecific or non-diagnostic changes	3	1.5
Total	204	100

LBBB, left bundle branch block.

Among the 204 patients assisted, 96.1% had ST-segment depression or T-wave inversion on the electrocardiogram, 2.4%, ST-segment elevation or (presumably new) or new-onset left bundle branch block, and 1.5%, nonspecific changes or normal electrocardiogram (**Table 2**).

This study found that a greater percentage of patients with chest pain of cardiac origin presented to the Emergency Department of the hospital due to acute chest pain. These results are consistent with other investigations^{3,4}. The patients admitted were predominantly men between 40-70 years old with a diagnosis of unstable angina. High blood pressure was the most frequent risk factor.

Although the incidence of sudden death was low (0.5%), it is urgent to apply educational programs to the population and to implement chest pain units in the country's hospitals.

CONFLICTS OF INTEREST

None declared

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