Patients' symptoms before a first hospitalization due to Acute Coronary Syndrome*

SINTOMAS DE PACIENTES ANTES DA PRIMEIRA HOSPITALIZAÇÃO POR SÍNDROME CORONARIANA AGUDA

SÍNTOMAS DE PACIENTES ANTES DE LA PRIMERA HOSPITALIZACIÓN POR SÍNDROME CORONARIO AGUDO

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ABSTRACT

The objective of this study was to characterize and compare patients regarding their report of experiencing chest pain, dyspnea and limitation of the daily life activities one week before their first hospitalization due to Acute Coronary Syndrome, according to the clinical presentation form, and compare them. This is a cross-sectional, descriptive and correlational study. A clinical evaluation instrument was used to investigate the presence and severity of dyspnea, chest pain and physical restriction due to myocardial ischemia. Regarding the limitation to carry out physical activities, patients diagnosed with unstable angina showed lower capacity the week before hospitalization, and reported experiencing dyspnea and chest pain more frequently than patients who had an infarction in situations ranging from making strong efforts, such as walking uphill or on a flat surface but very quickly, to resting and in situations of little effort.

DESCRIPTORS
Coronary disease
Acute coronary syndrome
Chest pain
Dyspnea

RESUMO

Este estudo objetivou caracterizar os pacientes quanto ao relato da presença de sintomas de dor torácica, dispneia e limitação das atividades diárias uma semana antes da primeira hospitalização por Síndrome Coronariana Aguda, segundo a forma de apresentação clínica, e compará-las. Estudo transversal, descritivo e correlacional. Utilizou-se um instrumento de avaliação clínica que investigou a presença e a gravidade dos sintomas de dispneia, precordialgia e restrição física decorrentes da isquemia do miocárdio. Com relação à limitação para realização de atividades físicas, pacientes com diagnóstico de angina instável mostraram maior comprometimento na semana que antecedeu a internação, assim como relataram a presença de dispneia e precordialgia com maior frequência do que os pacientes infartados em situações que vão desde realizarem grandes esforços como, por exemplo, caminhar na subida ou muito rápido no plano, até situações de repouso ou de pequenos esforços.

DESCRITORES
Doença das coronárias
Síndrome coronariana aguda
Dor no peito
Dispnéia

RESUMEN

Estudio que objetivó caracterizar a pacientes en cuanto al relato de presencia de síntomas de dolor torácico, disnea y limitación de actividades diarias una semana antes de la primera hospitalización por Síndrome Coronario Agudo, según la forma de presentación clínica, y compararlas. Estudio transversal, descriptivo y correlacional. Se utilizó un instrumento de evaluación clínica que investigó la presencia y gravedad de síntomas de disnea, precordialgia y restricción física derivadas de isquemia de miocardio. En relación a limitaciones para realización de actividades físicas, pacientes con diagnóstico de angina inestable mostraron mayor compromiso en la semana que antecedió a la internación, así como relataron la presencia de disnea y precordialgia con mayor frecuencia que en los pacientes infartados en situaciones tales como realizar grandes esfuerzos como, por ejemplo, caminar en pendiente ascendiente o muy rápido en el llano, hasta situaciones de reposo o pequeños esfuerzos.

DESCRIPTORES
Enfermedad coronaria
Síndrome coronario agudo
Dolor en el pecho
Disnea

INTRODUCTION

Today, atherosclerotic cardiovascular diseases are the main causes of death and invalidity around the world. According to the Pan American Health Organization[1], chronic illnesses have been considered devastating, not only for individuals/family members, but also for communities, particularity the poorest one, as an increasing threat against economic development. It is estimated that, in the next two decades, in Latin American and Caribbean countries, incidence levels of ischemic heart disease and cerebrovascular accident will almost triple. In most of these countries, chronic illnesses represent the main causes of mortality and premature disabilities nowadays and contribute to almost 50% of disability-adjusted life years lost in the region. With regard to cardiovascular diseases, in the first decade of the 21st century, they are expected to provoke about 20.7 million deaths. Forecasts for the next two decades include mortality rates due to ischemic heart disease and cerebrovascular accident almost thrice as high in Latin America.

The most common origin of Acute Coronary Syndrome (ACS) is coronary artery disease. The term ACS is widely used to describe patients with acute myocardial infarction (AMI) or unstable angina (UA). The pathophysiology of angina, infarction without ST-segment elevation and infarction with ST-segment elevation is similar, and their origins are related to plaque progression in coronary arteries, atheroma plaque instability, rupture with or without luminal thrombosis and vasospasm[2]. The three forms ACS can present itself are defined through an electrocardiogram, which shows a depression in the ST segment or a prominent inversion of the T-wave. Without elevation of the ST-segment and in case of clinical signs typical of ACS (pain/thoracic or equivalent anginous discomfort), myocardial necrosis markers are investigated, such as troponin for example[3].

Patients with any of the three forms of ACS will experience the symptoms typical of low myocardial perfusion: precordialgia, oppression or burning, dyspnea and fatigue[3].

The symptoms deriving from coronary artery disease or ACS have mainly been assessed after the accomplishment of therapeutic procedures, with a view to comparing the efficacy of different treatments[4]. Few authors have investigated how patients perceive their manifestations for the first time before hospitalization. Health professionals' knowledge on this can enhance the establishment of educative strategies on ACS strategies directed at the general population, as well as the elaboration of a care plan for individuals who turn to health service as a result of these manifestations. It is known that seeking care in time makes it possible for patients to be submitted to effective interventions, with a view to preserving the myocardium and decreasing cardiac damage. Consequently, professionals would have greater chances of saving patients' life and preserving their quality of life after these persons' ischemic event.

This study aimed to characterize patients regarding reports on the presence of thoracic pain symptoms, dyspnea and limitation of daily activities one week before the first hospitalization due to ACS, according to the clinical presentation form (UA and AMI); to compare the frequency of symptoms the patients report according to the clinical presentation form of the ACS (UA and AMI).

METHOD

Descriptive and cross-sectional study, developed at two public hospitals located in the interior of São Paulo State.

Data were collected between May 2006 and July 2009, and a convenience sample of 253 patients was constituted, who complied with the following inclusion criteria: first ACS episode; hospitalization for at least 24 hours and at most seven days; age over 21 years; in (physical and psychological) clinical conditions to be interviewed by the researchers and agreement to participate in the study.

Approval for the project was obtained from the Institutional Review Boards of the study hospitals. Participants properly received verbal and written information about the research and patients and researchers signed the informed consent term.

All data were collected through individual interviews with the patients, held during hospitalization. The collection questionnaire comprised the following socio-demographic variables: gender; marital status; education (in years attending teaching institutions); professional situation and monthly family income. Age was calculated later using the birth and interview dates. Clinical data were collected as follows: hospitalization time, diagnosis (UA and AMI) and presence of previous treatments for other cardiovascular diseases before the first ACS appeared (arterial hypertension, arrhythmias and myocardial diseases). Also, the presence of risk factors for coronary artery disease was investigated, diagnosed before or during hospitalization: diabetes mellitus, dyslipidemia, arterial hypertension, smoking, body mass index and encephalic vascular accident.

For the sake of a better assessment of the main ACS, a questionnaire[4] was used, which the patient answered considering the week before hospitalization. The questionnaire consists of five questions, most of which with dichotomous (yes/no) answers. The first question asks about the degree of limitation the patient presented before hospitalization

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to perform physical exercise (not limited, slightly limited, very limited and completely limited). The second addresses the cause of the limitation (fatigue, arrhythmia, dyspnea, angina and other pathologies), and the patient can choose more than one option. The third question investigates the presence of dyspnea in different situations, such as walking, getting dressed or even at rest (yes/no answers). The fourth question, with six alternative answers, looks at the number of angina episodes, ranging from never to several times per day. The final question addresses eleven possible situations that can trigger angina. It should be highlighted that this questionnaire permits the description of symptom frequencies, without a total score for each (dyspnea, precordialgia and physical restriction).

This clinical assessment questionnaire is easy to use and investigates the presence and gravity of dyspnea, precordialgia and physical restriction symptoms deriving from myocardial ischemia. Considering that neither cultural issues nor the patients' country of origin influence the questionnaire items, besides the fact that this questionnaire does not need an approach common to psychometric instruments, the researchers decided to translate the questions and answer alternatives and, next, the face and content validations, without performing the adaptation process suggested for instruments that assess subjective constructs like health-related quality of life.

Thus, after its translation, the questionnaire was submitted to the assessment of a four-member expert committee, who analyzed the questions for pertinence (whether the items were actually related with the study proposal) and clarity (whether the items were described understandably). Next, the questionnaire was submitted to semantic analysis, involving four potential subjects and, after all semantic adaptations, the final version of the questionnaire was achieved.

Data were processed and analyzed in Statistical Package for Social Science (SPSS) software version 15.0. Descriptive simple frequency analyses were accomplished for nominal variables, and central trend (mean and median) and dispersion analyses (standard deviation) for continuous variables. To assess differences in the symptoms the two groups presented, the Chi-square and Fisher's Exact Test were used. The significance level was set at 0.05.

RESULTS

Among the 253 participants, 142 (56.1%) were hospitalized diagnosed with AMI and 111 (43.9%) with UA. The infarction victims' mean age was 55.8 years (SD=13), ranging from 25.4 to 79.4 years. In the group of UA patients, the mean age was 60.6 years (SD=10.5), ranging from 33.8 to 82.1 years. Regarding gender, in both groups, men predominated: 69 (62.2%) and 106 (74.6%), respectively, for UA and AMI. No statistically significant intergroup difference was found for gender ($p>0.05$), as opposed to age, for which a statistically significant difference was identified ($p<0.05$). In the two groups, patients were predominantly married and performed paid work. The mean education level for both groups was 5.3 years, ranging from 0 to 21 years for the UA and from 0 to 23 years for the AMI group. The median was four years for the two groups. The groups' monthly family income was also similar, ranging from R$350 to R$7,600 among UA patients and from R$120 to R$6,000 among infarction victims (Table 1).

Table 1 - Socio-demographic and clinical characterization of subjects during hospitalization, according to diagnostic group - Ribeirão Preto, SP - 2006-2009

Variables	AMI (n=142)		UA (n=111)	
	n (%)	$\bar{x}$ (SD)[a]	n (%)	$\bar{x}$ (SD)[a]
Socio-demographic				
Married/fixed partner	95 (66.9)		81 (71.0)	
Active workers	92 (64.8)		55 (49.5)	
Education (years)		5.4 (4.1)		5.3 (4.4)
Family income (reais)		1405 (1135)		1419 (1406)
Presence previous treatment (yes)				
Other CVD*	63 (44.0)		78 (70.3)	
Arterial hypertension	62 (43.7)		72 (64.9)	
Arrhythmias	02 (1.4)		02 (1.8)	
Myocardial diseases	01 (0.7)		02 (1.8)	
Presence of risk factors				
Smoking	111 (78.2)		83 (74.8)	
Overweight/obesity	89 (62.6)		65 (58.5)	
Arterial hypertension	85 (59.9)		91 (82.0)	
Dyslipidemia	46 (32.4)		59 (53.2)	
Diabetes mellitus	42 (29.6)		46 (41.4)	
Cerebrovascular accident	05 (3.5)		05 (4.5)	

[a] $\bar{x}$ (SD): mean (standard deviation); *CVD: cardiovascular diseases.

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As for the participants' clinical characteristics, the mean hospitalization time was the same for patients with UA ($\bar{x}$=2.7) and AMI ($\bar{x}$=2.6), with an interval between one and six days for both groups.

Regarding the presence of previous treatments for other cardiovascular diseases before the first ACS episode, 70.3% of the UA group were already treating another cardiovascular disease at the time of hospitalization, as well as 44% of infarction patients (Table 1).

Another research variable was the presence of risk factors before or diagnosed during hospitalization (Table 1).

The results of the application of the translated Symptom Questionnaire[4] are displayed in Tables 2 to 5.

The first question asked about the patients' degree of limitation to perform physical exercise during the week before hospitalization. *Not limited* was the selected option for 64.1% of infarction victims, against only 35.1% of subjects with UA. *Completely limited* was chosen by 27.9% of subjects hospitalized with UA and 4.2% of infarction victims. Most answers to each of the options showed greater commitment among subjects diagnosed with UA to perform physical exercises. Only the option *very limited* was more frequent in the group of infarction patients. These differences were statistically significant between the two research groups (p=0.000). The causes the subjects appointed for this limitation were fatigue, dyspnea, arrhythmia, chest pain and other non-cardiac diseases. Among these, a statistically significant difference was identified for angina (p=0.000) and other pathologies of non-cardiac origins (p=0.001) (Table 2).

Table 2 - Results of the first and second question of the Symptom Questionnaire, according to the clinical presentation of ACS and probability rates (p) associated with the Chi-square test - Ribeirão Preto, SP - 2006 - 2009

Questions	AMI (n=142) n (%)	UA (n=111) n (%)	p
1. Physical exercise			<0.001**
Not limited	91 (64.1)	39 (35.1)	
Slightly limited	22 (15.5)	28 (25.2)	
Very limited	23 (16.2)	13 (11.7)	
Completely limited	06 (4.2)	31 (27.9)	
2. Physical exercise limited by:			
Fatigue	46 (32.4)	61 (55.0)	0.37
Fatigue	26 (18.3)	48 (43.2)	0.24
Arrhythmia	23 (16.2)	53 (47.7)	0.080
Angina	18 (12.7)	33 (29.7)	<0.001**
Other pathologies	06 (4.2)	12 (10.8)	<0.001**

** p< 0.01: Statistical significance.

The next research question addressed the situations in which patients felt dyspnea one week before hospitalization. Most participants in both groups did not report dyspnea most of the time, while 54.1% of patients with unstable angina and 47.2% of infarction victims reported dyspnea when climbing or walking fast at a level. In other situations, dyspnea reports were significantly higher among patients hospitalized with UA than among AMI patients, in situations ranging from major efforts, such as walking fast on level ground, to situations with minimal or no efforts, such as rest or sitting at night (Table 3).

Table 3 - Results of Symptom Questionnaire, questions related to dyspnea, according to clinical presentation of ACS and probability rates *(p)* associated with the Chi-square test - Ribeirão Preto, SP - 2006-2009

Question 3. Presence of dyspnea	AMI (n=142) n (%)	UA (n=111) n (%)	p
Lack of air most of the time	132 (93.0)	102 (91.9)	0.75
When climbing or walking very fast on level ground	67 (47.2)	60 (54.1)	0.28
When walking on level ground with people of the same age and at their speed	36 (25.4)	51 (45.9)	0.001**
Has to stop to regain breath when walking on level ground and at one's own time	37 (26.1)	48 (43.2)	0.004**
When dressing or grooming	14 (9.9)	23 (20.7)	0.015*
At rest, sitting at night	17 (12.0)	31 (27.9)	0.001**
Has to sit down and relax when returning from a walk	37 (26.1)	49 (44.1)	0.003**
Wakes up at night due to dyspnea	22 (15.5)	34 (30.6)	0.004**
Lifts weight	24 (16.9)	35 (31.5)	0.006**

* 0.01< p< 0.05; ** p< 0.01: statistical significance.

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As for the number of angina episodes (question 4), a small number of patients in both groups did not feel chest pain during the week before the first ACS (5.4% of angina patients and 9.2% of infarction patients). Only 08 (5.6%) patients with AMI reported daily pain (once or twice per day/several times per day), a fact that occurred in 33 (29.7%) UA patients, but this difference was not statistically significant (p= 0.051) (Table 4). As for possible situations that triggered angina among the participants, in the UA group, higher frequencies were found for most situations presented in the assessment questionnaire, with statistically significant differences, except for three situations: *At rest, when sitting* (p=0.503); *At night at rest* (p=0.085) and *When outside exposed to wind or cold weather* (p=0.322) (Table 5).

Table 4 - Results of Symptom Questionnaire, questions related to number of angina episodes according to clinical presentation of ACS and probability rates (p) associated with the Chi-square test - Ribeirão Preto, SP – 2006-2009

Question 4. Number of angina episodes	AMI (n=142) n (%)	UA (n=111) n (%)	p
Never	13 (9.2)	06 (5.4)	0.051
Less than 1 per week	89 (62.7)	33 (29.7)	
Between 1 and 2 per week	24 (16.9)	25 (22.5)	
Between 3 and 6 per week	08 (5.6)	14 (12.6)	
1 or 2 times per day	04 (2.8)	19 (17.1)	
Several times per day	04 (2.8)	14 (12.6)	

Table 5 - Results of Symptom Questionnaire, questions related to situations triggering angina, according to clinical presentation of ACS and probability rates (p) associated with Chi-square or Fisher's Exact Test - Ribeirão Preto, SP - 2006-2009

Question 5. Presence of angina	AMI (n=142) n (%)	UA (n=111) n (%)	p
When climbing or walking very fast on level ground	39 (27.5)	62 (55.9)	<0.001**
When walking at a level with people of same age and at their speed	17 (12.0)	50 (45.0)	<0.001**
When walking at a level and at one's own time	07 (4.9)	39 (35.1)	<0.001**
When dressing or grooming	10 (7.0)	25 (22.5)	<0.001**
At rest, when sitting	58 (40.8)	50 (45.0)	0.50
At night after some activity	15 (10.6)	37 (33.3)	<0.001**
At night while resting	44 (31.0)	46 (41.4)	0.085
Acordar a noite devido a dor no peito	30 (21.1)	47 (42.3)	<0.001**
Wake up at night due to chest pain	27 (19.0)	48 (43.2)	<0.001**
After dinner	10 (7.0)	19 (17.1)	0.013*
When outside exposed to wind or cold weather	01 (0.7)	03 (2.7)	0.32[a]

* 0.01< p< 0.05;
** p< 0.01: statistical significance
[a] Fisher's Exact Test

DISCUSSION

The study participants' characterization in terms of age is similar to other studies involving coronary artery disease patients[5-9]. Regarding gender, there were more men among the participants, in line with other studies of cardiac patients[5-16].

The predominant marital status in this study, which is also more frequent in the literature, was married or living with a fixed partner[5,8-9,11,14-18].

As for the risk factor investigated before the first ACS episode or diagnosed during hospitalization, most patients in both groups were already presenting arterial hypertension, were smokers and their Body Mass Index was too high (overweight/obesity). Most UA patients displayed dyslipidemia (53.2% of patients), against only 32.4% among infarction victims. Diabetes mellitus was present in 41.4% of patients with UA and 29.6% of AMI patients.

Other studies found similar results regarding AH prevalence among patients diagnosed with ACS or coronary artery disease[7,9,11-12,15-16,18-19], Diabetes *mellitus*[11,18-19] and dyslipidemias[11,19], although the patient group hospitalized due to the first AMI in this study showed higher prevalence levels for dyslipidemias, in line with another Brazilian study[18].

The prevalence of smoking in this study mostly differs from other studies involving coronary artery disease or ACS patients[7,11,19], ranging from 74.8% among UA patients to 78.2% among AMI patients, against frequencies between 23.5% and 34% in the studies mentioned above. The present data, however, are similar to a Brazilian research[18], in which the authors found a 66.15% prevalence level of smoking among patients hospitalized due to their first AMI. The authors of another international study[12] also found similar results regarding smoking prevalence. They analyzed patients hospitalized due to ACS and observed that 68.2% of infarction patients, with ST-segment depression, 69.9% without ST-segment depression and 73.2% of patients diagnosed with UA had been smokers or were smokers until the time of that hospitalization.

As mentioned earlier, most study participants were already overweight/obese, independently of the clinical manifestation form of the ACS. This information differs from international and Brazilian literature, in which the authors found lower prevalence levels for obesity among patients with coronary artery disease or ACS. To give an example, in an international study[16], the researchers found 32.6% of obesity among subjects with coronary artery disease. Other international authors[15] found 30% of obese patients in a study of risk factors present in patients hospitalized with ACS. In Brazilian studies, some researchers[6] found 35.8% of obesity among patients hospitalized due to an ACS, while others[9] found 29.9% with body mass index above desired levels among hospitalized patients diagnosed with AMI or UA. Obesity prevalence levels in this

study were similar to those observed in a single study[17], in which the authors found 69.4% of obesity among patients hospitalized with AMI, although it was not highlighted whether this had been the first coronary event.

Regarding limitations to practice physical exercise, patients diagnosed with UA indicated greater problems during the week before hospitalization, and also reported dyspnea and precordialgia more frequently than infarction patients in situations that range from great efforts, such as climbing or walking on level ground very fast, to rest situations or small efforts.

Little has been studied, though, about the assessment of physical exercise limitations, as well as the presence of dyspnea and chest pain before the hospitalization due to the first ACS. Mainly the evolution of these systems after some years has been focused on, in the stable phase of the coronary artery disease[8,20-21], or after some kind of treatment, like after a coronary artery bypass graft for example[4].

The methodological strategies other authors have used to assess the symptoms deriving from coronary artery disease or ACS also differ from that used in this study, which makes it difficult to compare the present results with those of other researchers cited, or mutual comparisons among the latter.

To give an example, in a Brazilian study, the authors[8] found in the socio-demographic and clinical results of 76 coronary artery disease patients under outpatient treatment that 67.1% mentioned fatigue, 40.8% angina, 43.4% dyspnea and 26.3% arrhythmia, but the authors did not describe how these data were collected, whether they used a questionnaire or open questions for example.

In an international study, the authors[20] applied a questionnaire to address situations of angina and a scale regarding the appearance of dyspnea in 278 patients during four years after a hospitalization due to AMI. As for the angina, 13% of participants reported chest pain while climbing or walking on level ground, 10% reported chest pain during habitual walks on a level surface, 14% reported a possible angina, 18% chest pain without effort and 45% did not present any angina problems. Among those who mentioned pain when making efforts, 32% felt it once per week, 37% once or twice per week and 30% more than twice per week. Regarding dyspnea, 40% related it with minimal efforts, 20% with exhausting efforts and 41% no dyspnea, even in case of exhausting efforts. When comparing these results with the present study, among patients diagnosed with AMI, less patients reported no angina when they were affected by their first AMI (9.2%), as well as higher angina frequencies in situations of greater and lesser physical effort (39.5% and 92.9%, respectively) during the first hospitalization when compared with the results obtained four years after an AMI. The angina frequencies the abovementioned authors found also differs from that found in the present study, in which patients reported more episodes after four years: while only 32% of participants reported angina at least once per week, the percentage found in the present study was 62.7%; after four years, on the other hand, 67% of patients reported angina two or more times per week, against 28.1% in the present study. As for dyspnea, the results found in this study are similar to those found in this paper regarding the *presence of dyspnea when making minimal efforts* (40% and 37.4%, respectively) and differ in terms of *dyspnea when making exhausting efforts*, with a higher percentage in this study: 72.6%.

In another research, the authors[21] interviewed 319 individuals with a history of coronary artery disease and in their productive age. They found that patients with a previous infarction diagnosis displayed a higher percentage of disease-related symptoms when compared to patients diagnosed with previous angina pectoris: moderate dyspnea (infarction=75.4% versus angina=66.5%), chest pain during anger or emotion almost daily (infarction=16.3% versus angina=12.2%), chest pain during anger or emotion weekly (infarction=16.3% versus angina=12.8%), palpitation without physical exercise almost daily (infarction=20.8% versus angina=14.1%), palpitation without physical exercise weekly (infarction=16.9% versus angina=15.3%), irregular heartbeat almost weekly (infarction =24% versus angina=15.7%) and irregular heartbeat weekly (infarction =14% versus angina=12.4%). Although these authors did not apply any statistical test to check for possible differences in the percentages found for both groups, they observed that, among the infarction victims who had returned to their daily activities, reports on coronary artery disease symptoms were more frequent. This result differs from the present study findings, as the participants with major symptoms had been diagnosed with UA.

The authors who elaborated the symptoms questionnaire used in this study applied it to 849 patients at the moment of the cardiac catheterization and five years after the coronary artery bypass graft surgery[4]. In the preoperative phase, patients with a low ejection fractions presented greater physical limitations than those with a higher ejection fraction. This limitation was mostly due to the chest pain for both groups (UA and MI). Five years after the surgery, this difference still continued. As for the dyspnea, participants with a low ejection fraction in the preoperative phase displayed more frequent dyspnea in all situations the questionnaire assessed, except for: absence of dyspnea and when dressing or grooming. These differences also continued five years after the surgery. It should also be highlighted that, five years after the surgery, the percentage of patients who reported dyspnea decreased in both groups, and this difference was statistically significant. As for chest pain, during the preoperative phase, participants from both groups presented more angina episodes when compared with the second moment, after the surgery, and this difference was statistically significant as well. Moreover, regarding the presence of angina, patients reported lower frequencies five years after the surgery in all situations the questionnaire presented, and all of these differences were statistically significant.

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CONCLUSION

Most patients hospitalized due to the first ACS were men and had already experienced essential risk factors for the development of coronary artery disease (arterial hypertension, smoking, overweight/obesity and dyslipidemias).

As for limitations to practice physical exercise, patients diagnosed with UA showed greater problems during the week before hospitalization and also reported dyspnea and precordialgia more frequently than AMI patients in situations ranging from great efforts, like climbing or walking on level ground very fast for example, to situations of rest or small efforts.

In conclusion, participants hospitalized for the first time due to UA displayed greater limitations to perform daily activities during the week before the hospitalization than patients hospitalized for the first time with AMI.

The presence of elderly patients in the UA group can represent a study limitation and, therefore, further research is suggested to compare ACS symptoms among more homogeneous groups in terms of age. Another point that needs to be highlighted is the risk of a possible recall bias concerning the aspects the questionnaire investigated, as the participants may face difficulties to assess the symptoms they presented one week before the hospitalization. This risk, however, is part of any research using the past time as a reference to assess the variable of interest and will be present in all studies using these instruments.

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