

Occurrences and Cardiovascular Diseases of Pre-Hospital Care Service

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ABSTRACT

Objective: To describe the occurrences and cardiovascular problems of a Mobile Emergency Care Service.

Methods: Retrospective, quantitative study carried out at the Emergency and Emergency Medical Regulation Centre of SAMU, São Luís, Maranhão, Brazil, in August and September 2019. Data from a secondary source, the Individual Medical Regulation Form, was used. Study approved by the Research Ethics Committee of the Federal University of Maranhão (UFMA), number 3.354,698.

Results: We identified 145 occurrences or phone calls that generated 142 (97.9%) calls. Females (51.4%), elderly (69.7%), mean age 76, patients with systemic arterial hypertension (57.8%) and diabetes mellitus 20 (13.6%) prevailed. The largest number of consultations occurred in the health district of Cohab (17.6) followed by Tirirical (16.2%). The most frequent complaints were chest pain (21.9%), malaise (21.3%) and dyspnoea (16.9%).

Conclusions: The visits were more prevalent in females, elderly, hypertensive, with complaints of chest pain and occurred in the health district of Cohab.

INTRODUCTION

Cardiovascular diseases are complex diseases that constitute the main cause of death in the world and must remain, for more than a decade, among the most important contributors to mortality, as they depend both on genetic predisposition and lifestyle habits. In Europe, these diseases are responsible for 45% of mortality each year, with 2.8 million deaths attributed to coronary artery disease and stroke ^[1,2]. In the Americas, there are 3.9 million deaths annually, 75% of the total resulting from cardiovascular diseases and the forecast for the increase for the entire America is 42.4% by the year 2030. In Brazil, cardiovascular diseases represent the leading cause of death, accounting for more than 30% of registered deaths. There are more than a thousand deaths a day, about 40 deaths per hour, 1 death every 1.5 minutes. It is estimated that by 2020, almost 400 thousand Brazilian citizens will die from these diseases and epidemiological studies show that cardiovascular morbidity and mortality can be reduced through appropriate policies ^[3]. Users affected by a clinical problem in situations that destabilize their vital condition need early and qualified intervention, which justifies the request for assistance through the free telephone access number 192 - Mobile Emergency Care Service (SAMU). The services are of low to high complexity, from the administration of medication to cardiopulmonary resuscitation manoeuvres ^[4]. From this perspective, the following research question was chosen: How do the occurrences and cardiovascular problems occur in the victims assisted by the SAMU in São Luís, Maranhão, Brazil?

METHODS

Retrospective, quantitative study, carried out at the Emergency Regulation Centre and Mobile Units of SAMU, São Luís-MA, Brazil. Secondary source data was used collected through records in the Individual Medical Regulation Form consisting of 50 distributed items. The period of data collection was in the months of August and September 2019. All forms of cardiovascular care performed in the months of January and February 2018 were included, totalling 145 forms. The records of other clinical and traumatic care services were excluded. Study approved by the Research Ethics Committee of the Federal University of Maranhão (CEP-UFMA), No. 3.354,698 of May 29, 2019.

RESULTS

145 incidents or telephone calls to the SAMU-192 São Luís-MA Emergency Regulation Centre were identified, which generated 142 (97.9%) calls. For each telephone call, the Individual Medical Regulation Form is filled in by the designated team regardless of whether or not to attend a service, in which the victim's situation is described. Of the occurrences that did not generate care, 3 (2.1%) corresponded to early removals, that is, when the ambulance arrives at the location, but the victim has already been removed, as shown in **Tables 1-4**.

Table 1. Distribution of cardiovascular events and injuries treated by SAMU-192. São Luís, MA, Brazil, 2018. (n=142).

Cardiovascular Occurrences and Diseases	N	percentage
occurrences		
Generated service	142	97,9
Did not generate service	3	2,1
cardiovascular diseases	142	100

Table 2. Distribution of cardiovascular diseases treated by SAMU-192 according to gender, age and previous disease. São Luís, MA, Brazil, 2018. (n=142).

Cardiovascular Disorders	N	percentage
Sex		
Feminino	73	51,4
Masculino	69	48,6
Age (average - 76 years)		
0 to 19 years old	1	0,7
20 to 29 years old	3	2,1
30 to 39 years old	9	6,3
40 to 49 years old	7	4,9
50 to 59 years old	21	14,8
≥60 years old	99	69,7
No registry	2	1,5
Previous Illness		
systemic arterial hypertension	85	57,8
Diabetes Mellitus	20	13,6
Brain stroke	11	7,5
aneurysm	3	2,0
Others	8	5,5
No registry	20	13,6

Table 3. Distribution of SAMU-192 cardiovascular care services according to health district and location. São Luís, MA, Brazil, 2018. (n=142).

Attendances	N	Percentage
Health district		
cohab	25	17,6
tyrical	23	16,2
bechiman	21	14,8
Itaqui Bacanga	20	14,1
little crown	19	13,4
Vila Esperança	15	10,6
center	7	4,9
Others	7	4,9
No registry	5	3,5
Location		

Residence	129	90,9
Health Units	7	4,9
University	1	0,7
No registry	5	3,5

Table 4. Complaints of cardiovascular diseases attended by SAMU-192. São Luís, MA, Brazil, 2018. (n=142).

Complaints	N	Percentage
chest pain	35	21.9
malaise	34	21.3
dyspnea	27	16.9
headache	16	10
Sweating	6	3.8
Mental confusion	6	3.8
Syncope	6	3.8
tremors	4	2.5
loss of muscle tone	4	2.5
vomiting	3	1.9
Deviation from the lip commissure	2	1.2
Dysphagia	2	1.2
Convulsion	2	1.2
epigastric	2	1.2
Others	10	6.2
No registry	1	0.6

DISCUSSION

It was found that cardiovascular events were more prevalent in females and in the elderly population, which is in line with other studies^[5,6]. In recent years, there has been a trend towards a change in the cardiovascular landscape between the sexes, mainly related to changes in behaviour and standard of living in contemporary Western society. Thus, women started to assume new roles outside the home environment and became more exposed to cardiovascular risk factors such as smoking, alcohol, inactivity, poor diet and stress^[7]. The elderly are a portion of the population that request a large part of the SAMU care and most are due to pathologies favoured by longevity. Changes in demographic and epidemiological patterns in Brazil, characterized by increased morbidity and mortality from external causes, chronic diseases and a greater number of elderly people, generate an increase in demand, overcrowding and exhaustion of emergency services^[8]. Furthermore, population aging is a determining factor in the increase in the prevalence and mortality of cardiovascular diseases, evidencing a shift in morbidity and mortality from younger to older groups^[9]. In the present study, the prevalence of systemic arterial hypertension is noted. It is known that hypertension is one of the most important cardiovascular risk factors, with the presence of atherosclerosis which leads to stroke, heart failure, coronary heart disease, peripheral vascular failure and kidney disease^[10]. Thirty-four Brazilians die every hour of cardiovascular disease, with hypertension being the main risk factor and being associated with the social and economic consequences that characterize it as a serious public health problem^[11]. The largest number of consultations in the study took place in the health district of Cohab. The municipality of São Luís is divided into seven health districts with their respective neighbourhoods: Vila Esperança - 96 neighbourhoods (7 urban and 89 rural), Tirirical - 65 neighbourhoods (42 urban and 23 rural), Bequimão (64 urban neighbourhoods), Itaqui-Bacanga - 61 districts (17 urban and 44 rural), Coroadinho - 45 districts (36 urban and 9 rural), Cohab (40 urban districts) and Centro (20 urban districts)^[12]. Although the district Cohab does not have the largest number of inhabitants (151,051 thousand), it appears that the main demands for assistance emerge from these locations. One justification for this circumstance seems to be the lack of a public emergency/urgency hospital close to this location, leading users to seek transport with adequate conditions for a possible removal in view of the injury. This justification is supported by the fact that the lowest service rates are found in locations where there are public hospitals and Emergency Care Units, such as in the cities of Centro and Vila Esperança, respectively. Studies show that precordialgia is a frequent complaint in SAMU clinical care^[4,13], being more prevalent in acute coronary syndrome, with retrosternal or epigastric characteristics, intense, intermittent or continuous (> 10 minutes), in tightness, heaviness or burning, with frequent radiation to upper limbs, back, neck and jaw. The presence of atypical symptoms does not exclude clinical suspicion, especially in women, the elderly and diabetics. However, precordialgia may not be present in up to about a third of victims, who present dyspnoea, nausea, vomiting, palpitations, syncope, or even cardiac arrest^[14]. Aiming at the quality of the emergency/urgent service and reducing the delay in the care provided, the "Intervention Protocol for the SAMU 192" was created, which determines that the displacement must be started immediately after the request, with agility and planning^[15]. The SAMU intervention protocols emphasize the necessary procedures for the care of non-traumatic chest pain (precordialgia). Thus, while awaiting the arrival of the SAMU, victims suspected of a cardiac event should ingest acetylsalicylic acid (ASA) at a dose of 200 mg orally chewed, provided there is no contraindication to it (allergy or history of active bleeding), as early medication, in the pre-hospital phase, reduces mortality. The arrival of the SAMU is essential to speed up transport to the reference hospital and upon arrival at the site; the emergency service team must be qualified to recognize the onset of symptoms, in addition to starting monitoring of vital signs, heart rate and, if possible, obtain an electrocardiogram.

CONCLUSION

A total 45 occurrences or phone calls were identified that generated 142 (97.9%) cardiovascular visits. Females (51.4%), elderly (69.7%), and patients with systemic arterial hypertension (57.8%) prevailed. The largest number of consultations occurred in the sanitary district of Cohab (17.6), followed by the Tirirical district (16.3%). The most frequent complaints were chest pain (21.9%), malaise (21.3%) and dyspnea (16.9%). As limitations of the study, the lack of filling in some information in the care form is highlighted.

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