CHARACTERIZATION OF PATIENTS WITH ACUTE MYOCARDIAL DISEASE SUBMITTED TO ANGIOPLASTY IN A PRIVATE HOSPITAL

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ABSTRACT

Acute Myocardial Infarction (AMI) is one of the diseases with the highest incidence and mortality in the world and in Brazil. The death rate in the country reaches 183.3 / 100.000 inhabitants and represents a serious public health problem. The aim of this study is to know the profile of patients with AMI who underwent angioplasty in a private hospital in Teresina-PI in 2017. This is a descriptive study with a quantitative approach, performed at the Medical and Statistical Archives Service of a private hospital. reference in cardiac surgeries and emergency in Teresina-PI. Data were collected using a script containing sociodemographic variables and clinical data. To build the database, Microsoft Office Excel spreadsheet software was used and for statistical analysis, the Statistical Package for Social Sciences - SPSS version 22.0. Of the 274 patients submitted to angioplasty, 74.8% were male, 16.1% had completed elementary school, 58.8% were married, 30.3% had a farming profession. 71.2% are Catholic, 58.8% have a brown color and 46.7% have interior provenance of the state. The largest concentration of people was in the age group 51-60 years, a total of 38.2%. The main risk factors evidenced to AMI were hypertension, diabetes and dyslipidemia. It was evidenced that 66.4% and 60.6% of the patients were not alcoholics and smokers, respectively. Knowledge about risk factors is of fundamental importance for clinical management, as it is an essential determinant in the elaboration of public health policies for primary and secondary prevention of the pathology group.

INTRODUCTION

In recent years, epidemiological data point to the high growth of cardiovascular diseases, among which is the acute myocardial infarction (AMI) (HUGUENIN *et al*., 2016). According to the World Health Organization (WHO), approximately 20 million people suffered from cardiovascular disease in 2011, of which 12 million were fatal victims of AMI (WHO, 2015).

For the year 2020, it is estimated that 40% of deaths will be related to cardiovascular disease (SOARES *et al*., 2009). AMI is one of the diseases with the highest incidence and mortality in the world and in Brazil. The mortality rate in the country reaches 183.3 / 100.000 inhabitants and represents a serious public health problem, being essential the diagnosis and early treatment in health services or the proper management of medicines for people with high cardiovascular risk (MALTA *et al*., 2014).

Measures were adopted by the Unified Health System (UHS), such as the creation of the National Health Promotion Policy and the Program for the Prevention and Control of Hypertension and Diabetes (HIPERDIA) in 2002 with the aim of reducing morbidity and mortality due to diseases of the circulatory system. Even with the implementation of the HIPERDIA Program in Primary Care, mortality rates from cardiovascular diseases in Brazil, including AMI, still remain high when compared to rates in developed countries (BAENA *et al*., 2012; MORAN *et al*., 2014; MANSUR; FAVARATO, 2012). The main factors associated with AMI are smoking, systemic arterial hypertension (SAH), diabetes mellitus (DM), dyslipidemia (DLP) and obesity (LOPES *et al*., 2015). Age, sex and heredity are factors that directly interfere with the disease (SILVA; OLIVEIRA, 2013). As age increases, hemodynamic and anatomical changes in the cardiovascular system appear, making men and women between 45 and 55 more likely to develop AMI.Regarding sex, Teixeira *et al*. (2017) state that the incidence of AMI is more frequent in men than in women, as female hormones raise the good cholesterol (HDL) rate, lowering the bad cholesterol (LDL) and raising the quality of life for women.

This constancy occurs through the association of the lifestyle of the population, increased behavioral risk factors such as physical inactivity, reduced fruit and vegetable consumption, alcohol use and excessive smoking, directly related to age, race, gender and family history, allied to the difficulties of access to health services (MORAN *et al*., 2014; SILVA; OLIVEIRA, 2013). AMI is caused by the formation of atheromatous plaques in the blood vessels that over time, these plaques can cause blood flow to stop, or rupture of the vessel, causing bleeding, fissuring or ulceration. These changes are decisive for partial or total obstruction of oxygen to the heart, leading in some cases to cardiac muscle necrosis. The main clinical presentations of coronary atherosclerosis are well described and should be properly recognized. Chest pain, stomach discomfort and left arm pain are some of the main symptoms of AMI (NASCIMENTO, 2017; STUB *et al*., 2015). Among the interventions, percutaneous coronary angioplasty is a non-surgical interventional treatment, being the most used revascularization method (CONEJO *et al*., 2015).It is observed that there are countless facts associated with AMI. Therefore, in-depth knowledge is necessary in order to seek prevention tools, as well as minimize patients' morbidity and mortality, thus optimizing their expectation and quality of life (ABREU *et al*., 2017). The study aimed to know the profile of patients with AMI who underwent angioplasty in a private hospital in Teresina-PI, Brazil in 2017.

MATERIALS AND METHODOS

This is a descriptive study with a quantitative approach, performed at the Medical and Statistical Archives Service (SAME) of a highly complex private hospital, a reference in cardiac surgeries and emergency services in Teresina-PI. Data collection took place in October and November 2018, after authorization by the Research Ethics Committee of the University Hospital of the Federal University of Piauí with the opinion number: 2,936,667. Initially all medical records were examined following hospitalizations of patients with acute myocardial infarction, following the chronological order of the months of 2017. A total of 278 medical records of patients who underwent angioplasty were found, but with the

application of the criteria. For inclusion and exclusion, four medical records were not used, resulting in a final sample of 274. Only medical records of patients aged over 20 and below 80 years were included. Excluded were those records that presented deaths after angioplasty. Data were collected using a script previously prepared by the researchers, containing information on sociodemographic variables (gender, age, marital status, education, profession, origin, color / race, smoker and alcoholist) and clinical data (chronic diseases, main diagnosis), place of intervention and angioplasty complications). For the construction of the database, the Microsoft Office Excel software was used, where the information of each variable was recorded, using the data validation technique by typing in a double-entry spreadsheet. Subsequently, the information was transferred to the Statistical Package for the Social Sciences - SPSS version 22.0, aiming at quantitative analysis based on the principles of descriptive statistics. Data were organized in tables for better discussion of results.

RESULTS AND DISCUSSION

In 2017, 274 patients underwent angioplasty. January and June were the months with the highest numbers of surgery, 31 patients (11.3%) performed the procedure, followed by August with 28 (10.2%). It is a large private hospital, a reference in cardiac surgeries and serves mainly patients who require treatment of high complexity, in agreement with the Unified Health System (SUS) (BUENO; LIMA, 2017). Similar amounts for the same time interval were found in a cohort study involving 114 patients (both sexes) undergoing angioplasty (SAMPAIO *et al*., 2013). And again confirmed in the study by Kuhn *et al*. (2015), where they were attended by the SUS, 2,185 (84.7%), the Ipergs 310 (12%) and other agreements 83 (3.3%) patients. This highlights the importance of the participation of private institutions in complementary activities, ensuring that the principles of SUS are effective. Of the 274 patients submitted to angioplasty, 74.8% are male patients, 16.1% have completed elementary school, 58.8% are married, 30.3% have a farming profession. 71.2% are Catholic, 58.8% have brown color and 46.7% have interior provenance of the state. The largest concentration of people was from the age group 51-60 years, making a total of 38.2% of the sample. Studies by Sampaio *et al*., 2013; Kuhn *et al*., 2015; Gardone *et al*., 2012, pointed out that males and the age group above 50 years old were the most submitted to angioplasty due to AMI. Still regarding gender, the authors state that the male gender, besides corroborative organic factors for AMI that led to an angioplasty, seek health services only when the clinical condition is already aggravated, with the only option being curative conduct and requiring more complex procedures and other related external factors. Regarding race / color, in all studies brown color was found to be predominant, however, the same authors did not consider as a predisposing factor for AMI, however, they recognize an intense miscegenation of the Brazilian population and the differentiated care provided by the social and health system. In this study, although female individuals were less frequently reported, Baggio *et al*. (2013) states that females are more prone to cardiovascular disease, due to the loss of the protective effect of estrogen and, above all, the adoption of risk factors that were predominantly male, such as stress, smoking and unbalanced diets. However, Kuhn *et al*. (2015) states that this low rate of cardiovascular disease among women is related to the use of health services and active participation in health promotion, well-being and

Table 1. Number of surgeries performed in a private hospital in 2017 (n = 274). Teresina-PI. Brazil

MonthAdmission	N	%
January	31	11,3
February	27	9,9
March	18	6,6
April	19	6,9
May	23	8,4
June	31	11,3
July	19	6,9
August	28	10,2
September	20	7,3
October	19	6,9
November	22	8,1
December	17	6,2
Total	274	100

Table 2. Sociodemographic characterization of patients who underwent angioplasty in a private hospital in 2017 (n = 274). Teresina-PI, Brazil

Variável	N	%
SEX		
Male	205	74,8
Feminine	66	24,1
Uninformed	3	1,1
AGE RANGE		
20 to 30 years	0	0
31 to 40 yearsold	13	4,7
41 to 50 years	35	12,8
51 to 60 yearsold	90	32,8
61 to 70 years	73	26,6
71 to 80 years	51	18,6
Uninformed	12	4,4
SCHOOL		
Notliterate	26	9,5
IncompleteElementary	23	8,4
Complete Elementary	44	16,1
IncompleteMedium	3	1,1
Medium Complete	15	5,5
Incompletehigher	3	1,1
Superior in progress	0	0
Graduated	5	1,8
Uninformed	155	56,6
COLOR		
White	19	6,9
Black	9	3,3
Parda	161	58,8
Uninformed	85	31,0
MARITAL STATUS		
Notmarried	44	16,1
Married	161	58,8
Widower	23	8,4
stableunion	24	8,8
Divorced	14	5,1
Uninformed	8	2,9
RELIGION		
Catholic	195	71,2
Evangelical	24	8,8
Espiritas	3	1,1
Others	3	1,1
Uninformed	49	17,9
PROFESSION		
Employee	39	14,2
Unemployed	3	1,1
Freelance	45	16,4
Retired	66	24,1
Fromhome	18	6,6
Farmer	83	30,3
Uninformed	20	7,3
PROCEDURE		
Teresina	105	38,3
Interior ofPiaui	128	46,7
Maranhão	32	11,7
Otherstates	1	0,4
Uninformed	8	2,9

Table 3. Clinical characterization of hospitalizations of patients with AMI who underwent angioplasty in a referral hospital for cardiac surgery (n = 274). Teresina, PI, Brazil.

VARIABLE	N	(%)
Diabetes Mellitus		
Yes	75	27,4
Not	192	70,1
Uninformed	7	2,6
Hypertension		
Yes	173	63,1
Not	94	34,3
Uninformed	7	2,6
Dyslipidemia		
Yes	27	9,9
Not	240	87,6
Uninformed	7	2,6
Otherdiseases		
Yes	22	8,0
Not	245	89,4
Uninformed	7	2,6
Main Diagnosis		
Specific AMI	9	3,3
Non-specific AMI	254	92,7
Uninformed	11	4,0
Via Intervention		
Right Radial Artery Via	250	91,2
Right Femoral Artery Via	7	2,6
Uninformed	17	6,2
Complications		
Yes	2	0,7
Not	269	98,2
Uninformed	3	1,1
Internment Time		
24 to 48 h	269	98,2
48 to 72 h	2	0,7
Uninformed	3	1,1

Table 4. Distribution of AMI risk habits among men and women, Teresina, PI, Brazil

Distribution of habits	FeMale		Male	
	n	%	n	%
Smoker	18	27,2	47	22,9
Ex-smoker	1	1,51	29	14,1
Ethylist	7	10,6	47	22,9
Ex-alcoholic	1	1,51	20	9,7

prevention of diseases and their diseases, requiring less clinical treatment of women IAM that men. Schooling may be related to the lack of information about risk factors for heart disease and its predisposing factors (BONOTTO; BOER, 2011). As a result, there is a difficulty in following the indicated recommendations (JANSSEN *et al*., 2015). Still dealing with sociodemographic factors of angioplasty, the marital situation for Baggio *et al*. (2013), relates to greater social support, being an important factor to be considered from the perspective of health. As well, religiosity is used as a comfort factor and provides support in coping with some health risk, which may attenuate the anguish felt by the patient (ENCARNAÇÃO *et al*., 2016). Koerich *et al*. (2017) associates that the level of education and the professions that require little and / or no training, may imply little knowledge, as well as the adoption of healthy lifestyle habits throughout life. With respect to origin, the same author above, informs that with the difficulty of access to high complexity services in inland cities, they force people to move from distant locations to large cities, seeking treatment. In this study, it was observed that the most prevalent risk factor preceding angioplasty was diabetes and hypertension. Diabetes Mellitus 75 (27.4%), and 173 (63.1%) hypertension, 27 (9.9%) reported dyslipidemia and 22 (8%) had other comorbidities. This is what the survey by Sampaio (2013) also says about clinical conditions, where he observed

hypertension in 90 (78.9%) followed by diabetes mellitus in 44 (38.6%) patients (SAMPAIO *et al*, 2013). According to the World Health Organization (2013), each year there are 1.6 million deaths from cardiovascular disease in the Americas. SAH is the chronic disease that most kills the population under 70 years old, considered a preventable death, because it can be prevented with preventive actions by changing some lifestyle habits, such as eating fruits, vegetables and vegetables. , salt reduction and regular physical activity practices (WHO, 2013). It is important to note that gender associated with advanced age has a significant impact on risk factors (diabetes and dyslipidemia) associated with increased risk of cardiovascular disease (SOUSA *et al*., 2014).

The study found that 254 (92.7%) of the patients who underwent angioplasty had the main diagnosis as nonspecific acute myocardial infarction, and access to the right radial artery 250 (91.2%), 269 (98.2%) had complications in the procedure and were discharged on average 24 to 48 hours after the intervention 269 (98.2%). Kuhn *et al*. (2015) states in their study that the most commonly used access routes are the local, having as the main choice the access route of the radial artery, with 70.6% punctures, followed by the femoral artery with 25.1%. Siqueira *et al*. (2014); Andrade *et al*. (2014) report that the radial and femoral access pathways are equally safe and effective because they have a low rate of cardiovascular events, as well as hemorrhagic complications. As a site of superficial localization, ARD hemorrhages are rare, quickly noticed and easily controlled, and the subjects undergo rapid hospitalization, accelerated return to their daily routine and low complication rate instead of puncture, reducing bleeding rate. Thus, choosing this route is one of the main intervention paths. According to the study by Janssen *et al*. (2015) the characteristics of patients undergoing cardiac surgery have been changing for a group of older patients with comorbidities and clinical manifestations, such as hypertension, diabetes, dyslipidemia, smoking, alcoholism, infarction, history of heart disease, chest pain, tiredness and dyspnea, thus constituting an important risk profile.

Considering the sum of the risk group and the total of each sex, 66.4% and 60.6% of the patients were not alcoholics and smokers, respectively, suggesting that the population has been showing greater concern regarding Their well-being through health education, promotion and prevention has decreased the habit of drinking and smoking and the risk of AMI should be linked to stress, obesity and physical inactivity. Other variables such as physical inactivity, BMI, did not have in the medical records so that they could be verified if they had association. Corroborating the findings in the study by Janssen *et al*. (2015) in which he observes that the acuity with the strict control of these comorbidities, not only of changes in lifestyle, but also of adherence to treatment, contributes, consequently, to reduce morbidity and mortality and prevention of more serious events such as AMI. And by isolating the variable gender and risk habits, women appeared more prominently in the category of smoking in contrast to men appeared in smoking and alcoholism simultaneously. Corroborating the findings in the study by Fontela *et al*. (2017) where females were also associated with a significantly lower risk. In the study by Costa *et al*. (2016) conducted in the city of São Paulo, although not finding a correlation between gender and risk behavior (smoking and alcoholism), the author says that knowledge about risk factors is of fundamental importance for clinical management, as it is a determining factor

indispensable in the elaboration of public health policies for primary and secondary prevention of the pathology group.

Conclusion

Knowledge about risk factors is of fundamental importance for clinical management, as it is crucial for the elaboration of public health policies for primary and secondary prevention of the pathology group. The study was extremely relevant because it allowed us to know the profile of the patient who underwent angioplasty, and found failures to fill in basic information about pathological antecedents and risk factors associated with AMI. Of the 274 records selected, 202 had incomplete information on sociodemographic, comorbidities, and associated risk factors. The lack of data limited the findings of the study. It is necessary that health professionals, especially nursing who provide care to patients, rigorously verify this information during the clinical evaluation of patients. These data are important for the planning and administration of actions aimed at prevention, treatment and rehabilitation at the individual and collective level.

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