



ASSISTANCE TO PATIENTS SUBMITTED TO HEART CATHETERIZATION IN A HOSPITAL URGENCY

ASSISTÊNCIA AOS PACIENTES SUBMETIDOS A CATETERISMO CARDÍACO EM UMA URGÊNCIA HOSPITALAR

ASISTENCIA A LOS PACIENTES SOMETIDOS A CATETERIZACIÓN DEL CORAZÓN EN UNA URGENCIA HOSPITALARIA

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ABSTRACT

Objective: presenting the profile of patients submitted to cardiac catheterization and the care provided in hospital urgency. **Method:** a descriptive study of a quantitative approach composed of 60 individuals who underwent the procedure, data collection occurred through questionnaires. The research project was approved by the Research Ethics Committee, CAEE: 11651312.5.0000.5178. **Results:** the prevalence of male users between 51-65 years old and under six years of study. The risk factors were: physical inactivity, dyslipidemia, family history, hypertension and overweight. At the hospital became evident the prevalence of acute myocardial infarction with ST-segment elevation. As regards the procedure, it was verified that 77% of subjects developed for Percutaneous Transluminal Coronary Angioplasty and stenting. **Conclusion:** the high prevalence in risk factors for cardiovascular diseases and severe clinical manifestations, requiring health education programs aimed at reducing morbidity and mortality. **Descriptors:** Myocardial Infarction; Cardiac Catheterization; Angioplasty; Causality.

RESUMO

Objetivo: apresentar o perfil dos pacientes que se submeteram ao cateterismo cardíaco e a assistência dispensada na urgência hospitalar. **Método:** estudo descritivo de abordagem quantitativa composto por 60 indivíduos que realizaram o procedimento, coleta de dados ocorreu através de questionários. O projeto de pesquisa obteve aprovação no Comitê de Ética em Pesquisa, com CAEE nº 11651312.5.0000.5178. **Resultados:** prevalência de usuários do sexo masculino, entre 51-65 anos e com menos de seis anos de estudo. Os fatores de riscos foram: sedentarismo, dislipidemia, histórico familiar, hipertensão arterial sistêmica e sobrepeso. Na clínica evidenciou-se o predomínio do infarto agudo do miocárdio com supradesnívelamento do segmento ST. Quanto ao procedimento, verificou-se que 77% dos indivíduos evoluíram para Angioplastia Coronariana Transluminal Percutânea com stent. **Conclusão:** alta prevalência nos fatores de riscos para as doenças cardiovasculares e manifestação clínica grave, necessitando de programas de educação em saúde, visando reduzir a morbi-mortalidade. **Descritores:** Infarto do Miocárdio; Cateterismo Cardíaco; Angioplastia; Causalidade.

RESUMEN

Objetivo: presentar el perfil de los pacientes que fueron sometidos a cateterismo cardíaco y la atención recibida en urgencias de un hospital. **Método:** este es un estudio descriptivo con un enfoque cuantitativo, compuesto por 60 personas que se sometieron al procedimiento, la recolección de datos ocurrió a través de cuestionarios. El proyecto de investigación fue aprobado por el Comité de Ética en la Investigación, CAEE: 11651312.5.0000.5178. **Resultados:** la prevalencia de los usuarios varones entre 51-65 años de edad y con menos de seis años de estudio. Los factores de riesgo fueron: inactividad física, la dislipemia, antecedentes familiares, la hipertensión y el sobrepeso. En la clínica, la evidencia de la prevalencia de infarto agudo de miocardio con elevación del segmento ST. En cuanto al procedimiento, se encontró que el 77% de los sujetos desarrollaron para Angioplastia Coronaria Transluminal Percutánea y colocación de stent. **Conclusión:** la alta prevalencia de factores de riesgo para las enfermedades cardiovasculares y las manifestaciones clínicas graves, que requieren programas de educación para la salud dirigida a reducir la morbilidad y la mortalidad. **Descriptores:** Infarto de Miocardio; Cateterismo Cardíaco; La Angioplastia; La Causalidad.

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INTRODUCTION

A little less than a century, about 10% of the causes of death worldwide were from cardiovascular disease. Currently, these represent 30%, of which 40% occur in developed countries and about 30% in the underdeveloped and developing countries.¹ The World Health Organization (WHO) states that in 2008, over 17 million people died as a result of cardiovascular diseases and it is estimated that by 2030, approximately 24 million people will die for these reasons.²

According to the data of the Department of Computer Science of the Unified Health System (DATASUS) and the Ministry of Health in Brazil, cardiovascular diseases are the leading causes of death since the 60s, which show a total of 326.371 thousand in 2010, with 99.955 thousand for ischemic heart disease. The northeast region of the country ranks the second place in deaths from circulatory system, with 81.692 thousand deaths, being 23.847 for ischemic heart disease. In the State of Paraíba 7.322 people died in 2010 from diseases of the circulatory system, with 2.155 of those deaths were due to ischemic heart disease, 1.841 from AMI and 11 from angina pectoris.³

The considerable change in eating habits and lifestyle of individuals contributed to the increase and the prevalence of cardiovascular disease, especially acute myocardial infarction (AMI) and angina pectoris (stable and unstable angina pectoris). On the other hand, there was also the development of science and technology, expanding the possibilities for diagnosis and treatment of cardiovascular diseases such as cardiac catheterization (CTC), percutaneous transluminal coronary angioplasty (PTCA) and coronary artery bypass grafting (CABG).^{3,4}

Cardiac catheterization is a surgical procedure invasive technique that uses radiopaque catheters and contrast media, which provide functional and anatomical data of the coronary arteries and heart chambers arteries, guiding in that way define the therapeutic conduct, which may be drug treatment, PTCA and coronary artery bypass grafting (CABG). The main indications for cardiac catheterization are the angina pectoris and myocardial infarction.^{3,5}

Risk factors corroborate substantially to the development of coronary heart disease. These factors can be divided into modifiable and non-modifiable. It is known that the modifiable are well known and its prevalence is evidenced in national and international studies, keeping thus the need for constant

health education in the prevention of these comorbidities.⁵ Control of such factors still prevail and increasing the risk CHD is of fundamental importance to reduce the occurrence of acute myocardial infarction and unstable angina.^{7,8}

Hospital admissions are reduced when there are control programs of risk factors for AMI promoted by public institutions, mainly by the government. This attitude, in addition to improving the quality of life of the general population, contributes to the functional capacity of patients who are already affected by this evil.⁹

From these reflections asked yourself: "How are characterized patients undergoing cardiac catheterization at a hospital urgency of SUS in João Pessoa?" "What were the main indications and treatments performed in the cardiac catheterization post?"

Thus the aim of this study is to present the profile of patients who underwent cardiac catheterization and the care provided in hospital emergency.

METHOD

This is a cross-sectional, descriptive and exploratory research with a quantitative approach, performed at Clínica Dom Rodrigo in João Pessoa, through interviews with structured questionnaires, with nuclear issues applied to patients undergoing urgent cardiac catheterization in February 2013 to May 2013, as well as information taken from the records of these users.

The Clinic Dom Rodrigo is located in João Pessoa and is characterized as a medium-sized hospital, offering services of medium and high complexity in cardiology, with membership to the Unified Health System (SUS). It is considered tertiary referral institution in cardiology in the State of Paraíba.

The study population consisted of individuals admitted to the Clinic Dom Rodrigo, who underwent cardiac catheterization of urgency. For sample definition, the following inclusion criteria were used: aged over 18 years old, all subjects who have undergone medical evaluation of the service and there was an indication of the urgency of cardiac catheterization and who agreed to participate. There were excluded: individuals who underwent elective cardiac catheterization and individuals whose urgency rating was not indicated by the medical service. Thus, the study sample consisted of 60 individuals.

Data were collected from February to May 2013, through an instrument developed for the study, divided into six groups: personal information, medical history, symptoms of coronary artery disease for the examination, catheterization and previous angioplasty and therapeutic indication after cardiac catheterization, or whether main coronary artery lesion.

The assessed personal data included age, gender, and marital status, race, county and state of origin. The health history addressed was: hypertension (SAH), diabetes mellitus (DM), smoking history, prior stroke (AVEP), myocardial infarction (IAMP) and dyslipidemia. It was also observed the body mass index (BMI) and the presence of a positive family history for 1st degree relatives.

Regarding the form of manifestation of coronary artery disease on admission, the following forms have been identified: stable angina (SA), unstable angina (UA), acute myocardial infarction without ST-segment elevation (NSTEMI) acute myocardial infarction with ST-segment elevation (STEMI) and congestive heart failure (CHF). For therapeutic indication after cardiac catheterization, we evaluated the following: performing PTCA, RM and conservative medical treatment.

The instrument was pre-tested in ten questionnaires to determine their usefulness and ability to generate valid information. The pre-test analysis showed no need for

modifications to the instrument for data collection, it is opting to include patients whose questionnaires were used at this stage.

The variables were tabulated and analyzed by Microsoft Excel, using as main tool the descriptive statistics. The results were presented in tables and figures with their respective frequencies and numeric variables.

This study is part of the article entitled "Characterization of patients undergoing cardiac catheterization emergency at a hospital in João Pessoa", which followed the criteria of Resolution no. 466 of 2012, of the National Health Council (CNS)/National Research Ethics Commission (CONEP), which regulates research involving human subjects and was approved by the Research Ethics Committee of the College of Medical Sciences of Paraíba, under the CAAE: 11651312.5.0000.5178 and Protocol 036/2012.

RESULTS

By analysis of data from 60 patients undergoing cardiac catheterization urgency it was possible to verify the predominance of males (62%), an average age ranging from 51-65 years old (45%), predominance of white (37%), higher incidence of married individuals (53%), most individuals from João Pessoa (58%) and less than six years of education (76%). However it identified no difference to the completion of catheterization among the literate (28%) and illiterate (27%),Table 1.

Table 1. Demographic profile of 60 patients submitted to cardiac catheterization of urgency from February to May/2013. João Pessoa-PB.

Variables	n	%
Gender	*	*
Male	37	62
Female	23	38
Age (years)	*	*
36-50	11	18
51-65	27	45
66-80	18	30
81-95	4	7
Origin	*	*
Capital	35	58
Metropolitan Region	12	20
Wild	6	10
Bansod	4	7
Outback	3	5
Color	*	*
Black	15	25
White	22	37
Mulata	10	17
Yellow	13	22
Marital Status	*	*
Single	10	17
Married	32	53
Stable Union	1	2
Divorced	9	15
Widower	8	13
Schooling	*	*
Illiterate	16	27
Literate	17	28
Elementary Incomplete	6	10
Elementary Complete	6	10
High School Incomplete	1	2
High School Complete	10	17
Higher Education	4	7

Risk factors associated with coronary heart disease was another issue analyzed in this research making it possible to verify the prevalence of physical inactivity with the

involvement of 93% of the sample, which is followed by dyslipidemia, family history, high blood pressure (hypertension), smoking, which show superior instance of 50% (Figure 1).

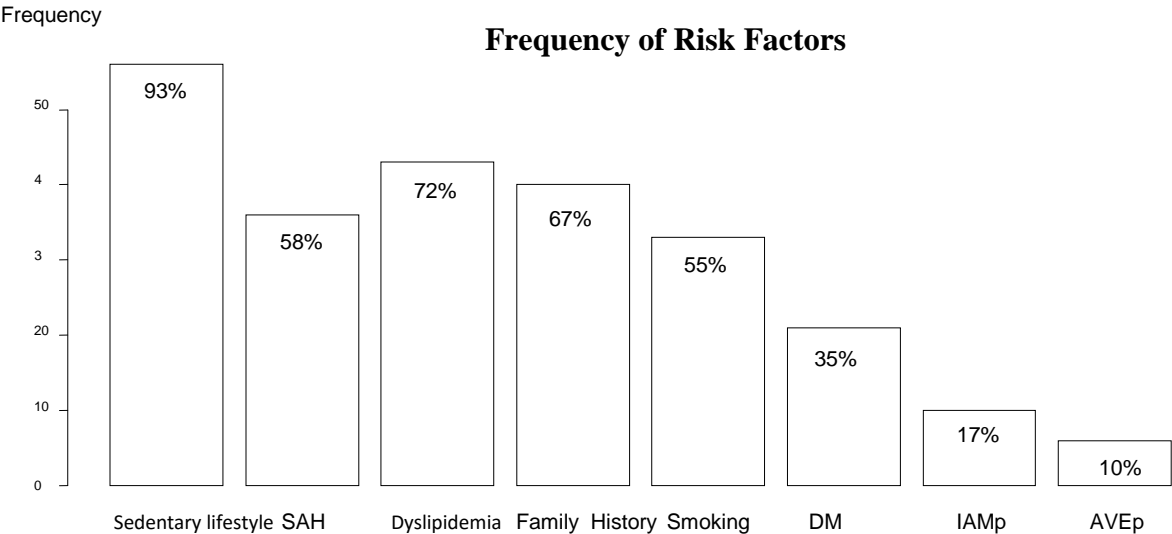


Figure 1. Frequency of Risk Factors in the sample of 60 patients submitted to Cardiac Catheterization of Urgency.

*AVEp- Prior Cerebrovascular Accident; IAMp - Prior myocardial infarction.

The nutritional status of the patient was also evaluated in this study, since it can act as

a risk factor, making it possible to observe the prevalence of overweight (57%) of the marks

obtained by BMI. It is important to note that no case framed in the thinness (Figure 2).

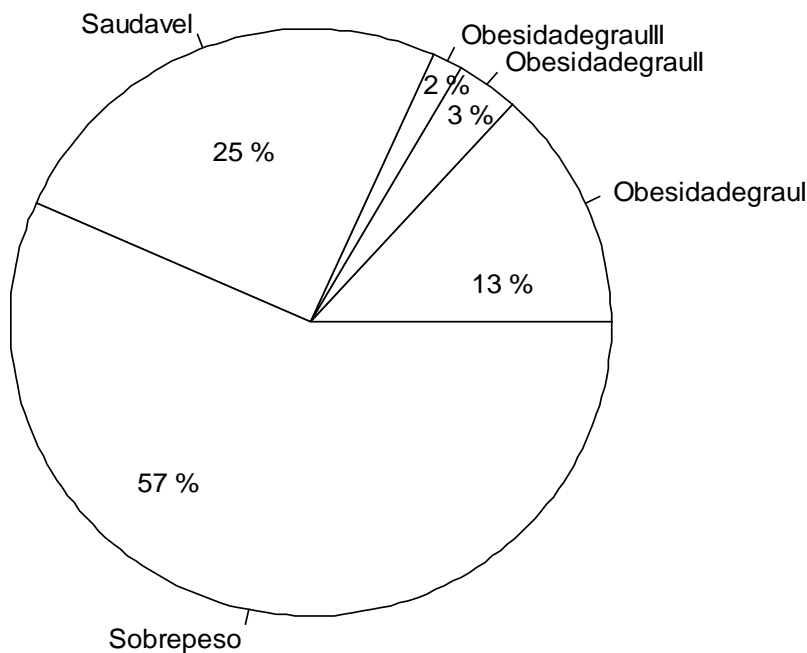


Figure 2. Classification of the sample of 60 patients submitted to cardiac catheterization of Urgency according to BMI.

Regarding the clinical manifestation indication for cardiac catheterization emergency, it was evidenced the prevalence of STEMI, followed by AI, AE and NSTEMI, which showed similar frequencies and put an

end to ICC (Figure 3). It was also observed that seven patients (12%) had undergone cardiac catheterization before and four (7%) had undergone PTCA (Figure 3).

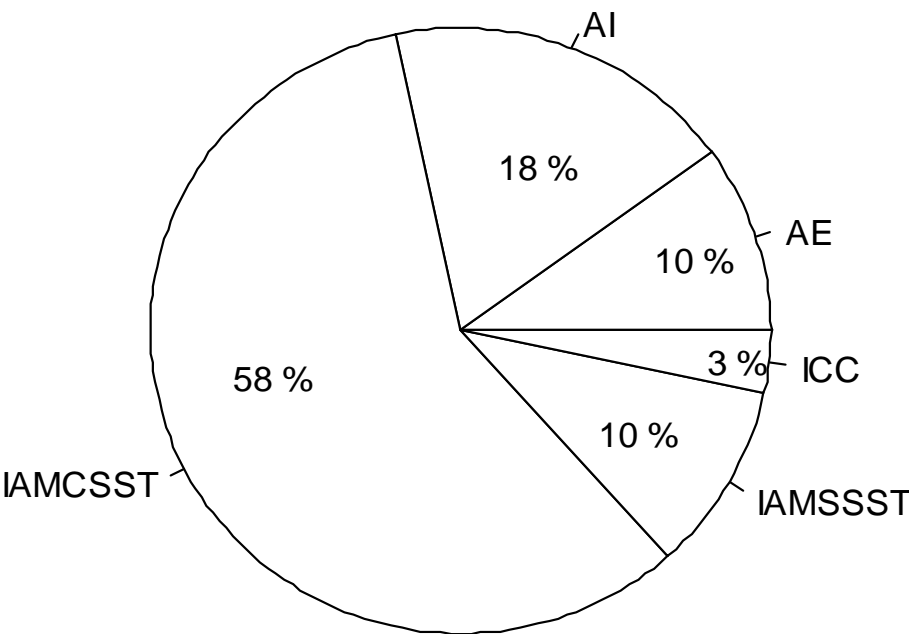


Figure 3. Incidence of coronary arterial pathologies in admission of 60 patients submitted to Cardiac Catheterization of Urgency.
*AE-Stable Angina; Ai-Unstable Angina; IAMCSST-acute myocardial infarction with ST Segment Elevation; IAMSSST-Acute Myocardial Infarction without ST Segment Elevation; CHF-Congestive Heart Failure.

About the evolution of the 60 individuals who perform urgency cardiac catheterization, it was found that 77% evolved to PTCA and stenting, 32% for MRI, 15% for medical treatment and 14% for angioplasty without

stenting with balloon. And, 27% of these subjects had coronary trunk lesion. These lesions showed a higher prevalence in the right coronary artery (69%), Table 2.

Table 2. After catheterization cardiac urgency from February to May/2013. João Pessoa-PB.

Variables		n	%
ACTP with stent		46	77
RM		19	32
Clinical treatment		9	15
ACTP without stent with baloon		8	14
Injury of trunk			
Right coronary		11	69
Left coronary		5	31

* PTCA with stent: Percutaneous Transluminal Coronary Angioplasty with Stent; PTCA without Stenting with baloon Angioplasty Percutaneous Transluminal Coronary Stenting with balloon; RM: myocardial revascularization

DISCUSSION

By analyzing the data it was found that most patients undergoing urgent cardiac catheterization was old, male, Caucasian, resident of the capital of Paraíba, with low level of education, which corroborates other studies^{5,10,11,12}. However, a slight mismatch with respect to the origin of individuals, compared with some of these studies^{10,12}. In this case, it was shown that the prevalence of individuals was coming from the surrounding towns. Importantly, in João Pessoa focuses 90% of hemodynamic services in the state and is a reference to surrounding towns, so it is natural that users seek treatment in the capital.

Regarding risk factors, this research demonstrated in the study population, the following prevalences: physical inactivity (93%), dyslipidemia (72%), family history (67%), hypertension (58%) and overweight (57%), which resemble other studies^{11,12}. The smoking (55%) and MD (35%) approached with recent study performed¹³ (52,5%) and (45,4%), respectively. Concerning IAMP (17%), this research has demonstrated a lower incidence when compared to similar⁷ study (37,2%). Already AVEP revealed higher incidence when compared to other studies⁵ (4,8%).

Importantly, the prevalent risk factors described in this study, with the exception of hereditary factor, the rest can be modified with healthy lifestyle accession. However, it has been reaffirmed every year, presenting the relevance in keeping the focus on primary prevention of these comorbidities¹.

In this study, physical inactivity showed a higher incidence when compared to other conducted seven (42,8%). But the study¹² recently conducted (82,79%) came up with the result of this research. Dyslipidemia also revealed major proportion in this study,

different from other similar (52,4%) and 5 (54,6%).¹³

Family history of coronary disease was reported by 67% of subjects, similar to those reported in similar studies (67,9%) and 5 (57,69%).¹² High blood pressure was of 58% lower than that found in other studies (73%) and 11 (76,92%).

In relation to BMI, which had a prevalence of overweight of 57% in the sample, a reported superiority of correlation in previous research is possible (29%)¹¹ and (27,9%)⁵. It is clear the highest prevalence found in the present study compared to others, because of the direct relationship between overweight and sedentary lifestyle, which presented more prevalent, resulting in higher risks for the development and progression of dyslipidemia.

The most frequent clinical manifestation was for STEMI (58%) of individuals, thus demonstrating that individuals sought medical care in a severe progression of coronary disease. A prevalence study conducted in Porto Alegre, which aimed to characterize the carrier profile of patients with acute coronary syndrome, revealed that 50,7% were affected by NSTEMI, differing thus the present study¹⁴.

The data for the previous angiographic procedures, showed that the sample, 12% of subjects had undergone cardiac catheterization, of these, 7% also held prior PTCA, fewer than found in a comparative study (25%)¹¹.

Analysis on the treatment of 60 individuals who composed this study showed that 77% of urgency cardiac catheterizations progressed to PTCA, considering that only 7% of these had undergone previous PTCA revealed that about 93% underwent primary PTCA. Corroborating the previous study^{15,16}, with data from the National Center of Cardiovascular Interventions (CENIC), which aimed to assess the percentage by PTCA region in individuals affected by STEMI, from 2006 to 2010,

showing that the Northeast had about 70% to 80% in the observed period, differing from the South, we had a progressive evolution, going from 67,3% in 2006 to 93.6% in 2010.

For evidence of post-heart catheterization coronary trunk injury, it was found the prevalence of right coronary artery (69%). We found no data in the literature comparing the prevalence of coronary lesions, but study by Matte et al. (2011) showed that of 20.004 patients with STEMI and undergoing PTCA had a trunk injury finding of the left coronary artery of 1,1% in the Northeast, differing in this study. It is noteworthy that 3 (5%) of these subjects had coronary trunk lesion on the right and on the left, 9 (15%) underwent PTCA and RM to be multivessel and 4 (7%) died.

The care after surgery must be done with adequate control of blood pressure (preventing periods of hypertension and hypotension), tracking possible emboligenic and evaluation sources and careful manipulation of the aorta to reduce the incidence of diseases such as stroke after CABG. Even with all the advances of the surgery, its success is also dependent on actions that involve especially the postoperative period, even in the operating room and later in the intensive care unit and medical clinic.¹³

CONCLUSION

Life habits that affect the development of acute coronary syndrome were detected in this study. We observed a high prevalence of risk factors in the sample submitted to cardiac catheterization urgency, treated at a hospital in João Pessoa, among which, physical inactivity (93%), dyslipidemia (72%), family history (67%), hypertension (58%) and overweight (57%), highlighting the modifiable risk factors.

Concerning limitations of the study, there is the small sample size, due to the short period of realization. However, the study shows relevant for bringing data to be adopted by multidisciplinary teams in effective control of the identified risk factors in order to reduce the incidence of acute myocardial infarction and its consequent morbidity and mortality, since it is known that the way more effectively to reduce them is through health education, with the development of promotion, prevention and treatment of risk factors.

The professional skilled health plays a key role, being able to develop starkly attention to health able to identify, reduce and treat

morbidity, comorbidity and mortality from acute coronary syndrome.

With that, it is necessary that the multidisciplinary team is present, contributing, in unity, to health education, with primary actions, development of brochures, advertisements in mass media and programs that aim to identify, clarify doubts about the disease, treatment and self-care measures. Thus, through good health care in the postoperative period, they can bring it to the goal of reducing readmission rates, morbidity and mortality and high health care costs.

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