

IMPORTANCE OF NURSING CARE IN CARDIAC CATHETERIZATION¹

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ABSTRACT

Cardiac catheterization is an invasive diagnostic method, used in the early treatment of patients with heart problems. This study aimed to verify the complications occurred and the main nursing care performed before, during and after the cardiac catheterization, plus profiling of patients undergoing the procedure. This is a retrospective study, descriptive and quantitative approach developed in a Charitable Hospital in the city of Ponta Grossa /PR in 2013, through consultations in medical records. Of the 240 patients included in the study, 131 (54.6 %) were male, the predominant age group was between 51-60 years (29.2 %). As for preexisting conditions, it is noted Diabetes Mellitus (76, 31.7 %) and hypertension (206, 85.8 %). Related complications, the most frequent were: ecchymosis (0.8 %), hematoma (0.8 %), and hemorrhage (0.8 %). Related to nursing care high lights that 99.4 % of patients were treated by this team. It is hoped that the results highlighted in this research can contribute to the improvement of patient care that conducts cardiac catheterization, where as hemodynamics services are continually evolving and increasingly used.

Keywords: Hemodynamics. Patient Care. Nursing Care.

INTRODUCTION

The main causes of death of the population, since the end of the first half of the last century, were infectious diseases. Currently, the main reason is a consequence of Chronic Non communicable Diseases (NCDs), which have a multifactorial etiology. Among the diseases classified as NCD, there are cardiovascular diseases (CVD) and Diabetes Mellitus (DM), and the rapid increase of mortality caused by them affects the social and economic development of various countries, including Brazil, in addition to decrease the quality of life of millions of people⁽¹⁻²⁾.

In Brazil, in recent years, the NCD represent significant hospital costs in the Unified Health System (SUS), being responsible for high

frequency of hospitalizations and needs of high-complexity procedures. The CVD are the main causes of death in Brazil, affecting both genders and being responsible for 20% of the total of 962,931 deaths, of individuals older than 30 years, in 2009. In 2010, in the State of Paraná, 32% of deaths were related to diseases of the circulatory system, and in the city of Ponta Grossa/PR, diseases of this nature accounted for 28% of deaths⁽³⁻⁴⁻⁵⁾.

Therefore, the improvement of interventional methods is necessary, with the purpose of reducing cardiovascular problems. With the advancement of technology in health, there was the development of medical treatment through the use of diagnostic methods in different clinical pictures. Hemodynamic procedures are highlighted, which are often fast and accurate, with efficient techniques aimed at

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lower risk for patients⁽⁶⁻⁷⁾.

Cardiac catheterization (CAT) is a method of invasive diagnosis, performed in the hospital, especially in the hemodynamics laboratory, considered almost irreplaceable in the early treatment of patients with heart problems, facilitating the choice of an appropriate and effective therapeutic measure. In the CAT, it displays the state of the coronary arteries, it evaluates the pressures in the heart chambers, the permeability of the coronary arteries and oxygen saturation in the blood, using flexible catheters, which are inserted by the inguinal region, or arm, or also by means of peripheral arteries⁽⁸⁾.

CAT-related complications are the main constraints of the technique. In one study, it was found that the CAT-related complications were of mild, moderate and even severe degree. For the first case, the complications met in the examination room were considered. In moderate degree cases, it was necessary to carry out observation. Finally, in the most severe complications, it took forward to intensive care. The most frequent complications were: vascular, neurological, ischemic, vasovagal and allergies. These events were associated with the presence of diabetes, smoking, ischemic heart disease, injury of the left coronary trunk, age over 70 years old, obesity, kidney disease, lung disease and also in patients who used anticoagulants or those in which the time of exam was higher than normal⁽⁹⁾.

Ahead of the technological and scientific development, hemodynamics units, with fast service and techniques, offer less risk to the patient. Among the professionals working in this sector, there is the nurse, who has technical and scientific knowledge and must exercise proper care, establishing a dialogue to seek information on nursing care with patients and actions in the pre-, trans- and post-examination, that are fundamental to avoid complications after the procedure⁽¹⁰⁾.

Through studies that evidenced the CAT can cause the patient to have some complications after the procedure, and that the improvement of nursing care quality is fundamental to avoid them, this study aimed at verify the complications that occurred and the main

nursing care carried out before, during and after cardiac catheterization, in addition to showing the profile of patients undergoing the procedure.

METHODOLOGY

It is a retrospective research of descriptive nature, quantitative approach, developed in a Philanthropic Hospital of Ponta Grossa/PR, considered a reference in hemodynamics in the municipality and region, with a demand of 750 patients on average per year in the sector.

Data were collected in June and July 2013, through consultation to electronic medical records of patients (Tasy software), submitted to the CAT in the period from January 2011 to December 2012, being surveyed 10 medical records of each month of the period, chosen at random, thus making a sample of 240 records. The institution where the study took place has a demand of 750 patients on average per year in the sector, and the size of the sample represents approximately 30% of the total.

To be part of the research, some inclusion criteria were adopted: patients should be 18 years old, representing both genders and having been diagnosed with heart problems that required the CAT exam. The only definite exclusion criterion was to be hospitalized for heart complications. There were two losses resulting from incorrect data in the hospital records. In order to preserve the anonymity of the patients, they were identified by Arabic numerals, in the sequence in which the collections were made.

The variables were: age, sex, weight, pre-existing disease and the history of underlying disease, history of smoking, use of drugs, the incidence of allergies, as well as to indicate whether the examination was elective or emergency and which was the access way to the CAT. It attempted also to recognize the occurrence of complications after the examination and the main nursing care performed, as compressional and occlusive dressing in the access site for CAT, diuresis control, and control of vital signs.

The data were transferred and tabulated in the Microsoft Excel® Software, and age was classified into seven age groups; BMI was

classified as normal, overweight and obesity; gender as female or male; and the other variables as yes or no. For analysis of the data, we used the SPSS (Statistical Package for the Social Sciences) Software, v. 13.0, by means of simple frequency tables.

Respecting the ethical precepts, this study had approval of the Committee of Ethics in Research (COEP) of the State University of Ponta Grossa (UEPG), under the Opinion number 302,897.

RESULTS AND DISCUSSION

Of the 240 patients included in the study, 131 were male (54.6%), a considerable portion, the largest verified, aged between 51 and 60 years old (29.2%), followed by 61 to 70 years old (25.4%) and 71 to 80 years old (23.3%). Regarding pre-existing diseases, 76 patients (31.7%) had DM and 206 (85.8%) HAS, and only three (1.3%) of them had some kind of kidney problem. With regard to the habits and addictions, 70 participants (29.2%) were smokers. For the body mass index (BMI), 94 (39.2%) were overweight and 32.9% were obese.

Given the above, it is inferred that the analysis of clinical and epidemiological profile of patients undergoing CAT, such as gender, age, pre-existing conditions, habits and addictions, help in improving the quality of care. Describe characteristics of the population is a fundamental task to check the health conditions and support actions of promotion and health protection, in order to improve the quality of life by reducing the incidence of diseases. In addition, authors agree that these information contribute to preventing damages to health and care protocols that facilitate the service provided⁽¹¹⁻¹²⁾.

Regarding the use of drugs, it was found that 60 (25%) patients made use of antiplatelet, 16 (6.7%) of them made use of oral anticoagulants and 12 (5%) of them made use of metformin. It is noteworthy that the drugs that can interfere in the procedure were not used by patients in the procedure day, as the case of metformin. According to one study, the increase in exams and medication use by the elderly, such as antiplatelet, is associated with the incidence of

disease in this age group, which are the DM and CVD. However, the use of many drugs, consumed along, can present pharmacological interactions⁽¹⁷⁻¹⁸⁾.

As regards the indication of the CAT, it was found that of the total of 240 people who conducted the examination, 219 (91.3%) were of an elective character, and the other (8.8%) were of a urgencial boasting. The vast majority of the patients (93.3%) showed no complications before, during or after the CAT; but they existed. By order of frequency, were observed: vagal reactions and cardiopulmonary arrest (CPA) in three (1.3%) patients each, ecchymosis (0.8%), hematoma (0.8%), and bleeding (0.8%), which occurred in two patients each; cardiogenic shock, acute pulmonary edema, atrial fibrillation and syncope in one patient each, and it was found that after the procedure three patients (1.3%) died.

CAT can be performed in an outpatient environment, in patients in outpatient follow-up, but this requires prior preparation and post-exam observation, from 4 to 8 hours, depending on the approach used. Based on research, it is evident that some complications may occur before, during or after the exam, such as: cardiac arrhythmia, cardiorespiratory stops, bleeding, among other⁽¹³⁻¹⁴⁾. To avoid such complications, nursing care actions, including the verification of vital signs and occlusive and compressive dressing, are indispensable to the establishment of safe conditions.

Access ports used in the procedure are shown in Table 1. It stands out as the main routes used: the right femoral artery in 149 (62.1%) patients and radial artery in 78 (32.5%) of them. These results contradict those of other studies⁽¹³⁻¹⁵⁻¹⁶⁾, which show that the choice of access is performed by evaluating the hemodynamicist, which often prefer the radial artery, once the femoral artery procedure can lead to the occurrence of further complications⁽¹³⁻¹⁵⁻¹⁶⁾.

Nursing care with the patients who had CAT in order of frequency, were: checking vital signs (SSVV), before and after the CAT, in 239 patients (99.6%), that is, in only one case, this was not performed. The physical examination was conducted in 203 patients (84.6%). The occlusive dressing, rest orientation and liquid

intake were also carried out for 239 patients, (99.6%). Monitoring of prescribed tests, creatinine test for 231 patients (96.3%), followed by urea, 49 patients (20.4%), and troponin, 58

patients (24.2%). It stresses the importance of completing the creatinine test for the prevention of acute renal failure, due to contrast used in the exam.

Table 1. Access used for catheter insertion in the CAT.

| Access way | Frequency | Percentage |
|-----------------------|-----------|------------|
| Right brachial artery | 6 | 2.5 |
| Right femoral artery | 149 | 62.1 |
| Left femoral artery | 6 | 2.5 |
| Right radial artery | 78 | 32.5 |
| Left radial artery | 1 | 0.4 |
| Total | 240 | 100 |

Source: The Authors, 2013.

It is noteworthy that the absence of electronic medical record of SSVV, dressing, rest and intake of fluid from a patient (0.4%), is due to the fact that he/she took the exam on an urgent basis and died. The care provided during the examination have not been reported in the medical records, but it is known that the nurse should be aware of SSVV, in the electrocardiographic tracing of the CAT, as well as observing signs or symptoms suggestive of complications that may occur during the examination⁽¹⁰⁾.

With the systematization of care, conducting the anamneses and physical examination of the patient are essential to the survey of nursing diagnoses and development of nursing care, and in the case of CAT, mainly directed to the prevention, early detection of complications and rapid interventions, rightly.

Among the professionals working on hemodynamics, the nurse is the one who has technical and scientific competence and must perform his work with quality, for better assistance, creating dialogue with the patient to seek information, i.e., perform data collection, expressing the needs of the patient, to establish the care to be held. Thus, the nursing process enables professionals to work in a planned, based and scientific manner, and meeting the needs of the patient⁽¹⁰⁻¹⁴⁾.

The increase in exams and medication use by the elderly, such as antiplatelet, is associated with the incidence of diseases in this age group, which are the Diabetes Mellitus (DM) and Cardiovascular Diseases. However, the use of

many drugs, consumed along, can present pharmacological interactions⁽¹⁷⁻¹⁸⁾.

Regarding anxiety, it was observed in 98 (40.8%) patients. In the period before the CAT, it is important for nurses to keep communication with the patient and his/her family, and create strategies that allow reducing anxiety of patients providing humanized care⁽¹⁹⁻²⁰⁾.

FINAL CONSIDERATIONS

It concludes that most patients did not have complications before, during or after the CAT. It should be noted that the procedures performed in emergency character presented complications after the CAT. The low rate of complications in relation to the number of patients evaluated suggests the existence of underreporting. The risk factors such as age, Diabetes Mellitus, Hypertension, obesity, contributed to an increase in complications, in addition to being a risk for developing Cardiovascular Diseases, being important to the development of health promotion and prevention. There was underreporting of nursing care provided during the procedure, in the medical records, which affected the results.

However, it is expected that the results of this research can contribute to the improvement of patient care that performs CAT, since the hemodynamics services are continually evolving and increasingly being used. This confirms that the nursing staff, which is part of the multidisciplinary team, also need to accompany this development, collaborating with the service to better patient care.

IMPORTÂNCIA DOS CUIDADOS DE ENFERMAGEM NO CATETERISMO CARDÍACO

RESUMO

O cateterismo cardíaco é um método de diagnóstico invasivo, utilizado no tratamento precoce de pacientes com problemas cardíacos. Objetivou-se nesse estudo verificar as complicações ocorridas e os principais cuidados de enfermagem realizados antes, durante e após o cateterismo cardíaco, além de traçar o perfil dos pacientes submetidos ao procedimento. Trata-se de uma pesquisa retrospectiva, descritiva e com abordagem quantitativa, desenvolvida em um Hospital Filantrópico da cidade de Ponta Grossa/PR, em 2013, por meio de consultas em prontuários. Dos 240 pacientes incluídos no estudo, 131 (54,6%) eram do sexo masculino; a faixa etária predominante estava entre 51 e 60 anos (29,2%). Quanto às doenças preexistentes, salientam-se o diabetes mellitus (76;31,7%) e a hipertensão arterial sistêmica (206;85,8%). Em relação às complicações, as mais frequentes foram: equimose (0,8%), hematoma (0,8%), e hemorragia (0,8%). Sobre os cuidados de enfermagem destaca-se que 99,4% dos pacientes foram assistidos por esta equipe. Espera-se que os resultados apontados por esta pesquisa possam contribuir para a melhoria da assistência ao paciente que realiza cateterismo cardíaco, visto que os serviços de hemodinâmica estão em evolução contínua e são cada vez mais utilizados.

Palavras-chave: Hemodinâmica. Assistência ao paciente. Cuidados de Enfermagem.

LA IMPORTANCIA DE LOS CUIDADOS DE ENFERMERÍA EN EL CATETERISMO CARDÍACO

RESUMEN

El cateterismo cardíaco (CAT) es un método de diagnóstico invasivo, utilizado en el tratamiento precoz de pacientes con problemas del corazón. Este estudio tuvo como objetivo verificar las complicaciones ocurridas y los principales cuidados de enfermería llevados a cabo antes, durante y después del cateterismo cardíaco, además de trazar el perfil de los pacientes sometidos a este procedimiento. Se trata de una investigación retrospectiva, descriptiva y con enfoque cuantitativo, desarrollada en un Hospital Filantrópico de la ciudad de Ponta Grossa-PR-Brasil, en 2013, a través de consultas en los registros médicos. De los 240 pacientes incluídos en el estudio, 131 (54,6%) eran del sexo masculino, la franja de edad predominante fue entre 51 y 60 años (29,2%). Encuanto a las enfermedades preexistentes, se señalan la diabetes mellitus (76, 31,7%) y la hipertensión arterial sistêmica (206, 85,8%). Con respecto a las complicaciones, las más frecuentes fueron: equimosis (0,8%), hematoma (0,8%) y hemorragia (0,8 %). Sobre los cuidados de enfermería se destacan que el 99,4% de los pacientes fueron tratados por este equipo. Se espera que los resultados señalados por esta investigación puedan contribuir para la mejora de la atención al paciente que realiza cateterismo cardíaco, visto que los servicios de hemodinámica están en constante evolución y son cada vez más utilizados.

Palabras clave: Hemodinámica. Atención al paciente. Atención de Enfermería.

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