

37 - CARDIOVASCULAR DISEASES AND CARDIAC CATHETERIZATION: A LITERATURE REVIEW

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shelguedes@hotmail.com**INTRODUCTION**

The cardiovascular diseases are the leading causes of morbidity and mortality in developed countries and in most developing countries and are responsible for high mortality rates. It is observed that in most developed countries, especially in the United States of America (USA), Canada, Australia, Japan, Britain and other Western Europe, their rates are declining, which can probably be attributed to the control of the main factors risk. (LOTUFO, LOLIO, 1993; MORAES; REZENDE, FREITAS, 2000; MANSUR et al, 2001; GUS, FISCHMANN, MEDINA, 2002).

Moreover, in Latin America, circulatory diseases account for one third of all deaths, including Brazil. In the patients over 70 years, the estimated incidence of 70% of coronary artery disease. In transition economies, cardiovascular diseases alone account for the first or second cause of death and involve more people earlier (KALACHE, VERAS, RAMOS, 1987; LOTUFO, 1998; MANSUR et al, 2001; KAISER, 2004).

Studies show that the accumulation of cardiovascular risk factors contribute to the development of atherosclerosis and the occurrence of cardiovascular events, among which are: cigarette smoking, hypertension, family history, diabetes mellitus, obesity and inactivity. Abnormal elevations of cholesterol have been consistently identified with these risk factors in the development of coronary artery disease, as well as having a significant role in the progression of the atherosclerotic disease process. More than 50% of all deaths could be prevented by reducing risk factor (PAHO, 2003; SAAD, 2004).

According to government sources, these diseases require the need for hospitalization, diagnostic and therapeutic procedures, medical and pharmacological treatment continued determining a significant economic impact (RIBEIRO et al, 2005).

Added to this fact, the use of a diagnostic method, such as cardiac catheterization, the correct identification of the atherosclerotic process, may be decisive in preventing severe complications. According to Grossman (1986), this procedure can generate information crucial to define the need for heart surgery, coronary angioplasty or other therapeutic intervention, as well as time, risk and anticipated benefit for a given patient. Catheterization is still the "gold standard" for diagnosis of coronary artery disease, the only one with which to "actually look at the damage.

This method of interventional catheterization is considered an evolution of medicine and can replace surgery in many alterations. This procedure has become established in view of the appropriate results and comparison with the data presented by surgery (Atik, 2002).

According to Brunner and Suddarth (2002), cardiac catheterization is used most commonly to assess the permeability of the vessel and determine the need for heart surgery, coronary angioplasty or other therapeutic intervention, as well as time, risk and anticipated benefit for a given patient. Catheterization is also a diagnostic tool for identifying coronary artery disease.

This is an invasive procedure, performed at a hospital under local anesthesia, with the introduction of a catheter (small flexible tube) in the patient's body. With the catheter positioned in the aorta, are located the two main coronary arteries, there injecting small amounts of contrast. The journey is the contrast within the coronary artery and its branches to the remark of obstacles in its path, which are fatty deposits on vessel walls. This procedure requires about 8 hours or less of bed rest to recovery (BRUNNER, SUDDATH, 2002).

To Atik (2002), the interventional catheterization has the advantages of greater improvement hearing, the demonstrated effectiveness of the procedure and no complications serious enough to have become valid option similar to surgical intervention. Other advantages should be emphasized as the elimination of general anesthesia, deleterious effects to the body as caused by cardiopulmonary bypass, myocardial protection for the poor, the heart anoxia, as well as atrial and pericardial incision responsible for the appearance of arrhythmias, pericarditis, syndromes post-pericardiotomy, which certainly increase the postoperative morbidity.

Worth further strengthen the consequences of technical developments in interventional catheterization have an effect on the logistics and budget programs in the rational use of hospital beds. It is therefore urgent to identify strategy for the practice of the safety with short hospital observation period, providing a higher turnover of beds and a fall in operating costs (CHAVES et al, 1992).

Moreover, the reduced hospital stay in a catheterization laboratory may contribute to increasing gaps in the information provided to patients as well as the perception of health professionals as to the real needs, concerns and insecurities of these patients (Grossman, 1991; Gentz, 2000).

Moreover, the growing use of techniques of interventional catheterization laboratories in hemodynamic although elected as a diagnostic and therapeutic strategy has caused high rates of complications such as hematoma at the puncture site, trauma due to catheterization, injection, vasospasm and acute myocardial infarction and of great importance today (NUNES et al, 1996; SWEARINGEN, HOWARD, 2002). It also means in pain, limitation of physical mobility and self-care deficit, consisting of typical problems to the customer in the post-test (BRUNNER, SUDDARTH, 2002).

Thus, handling the puncture site and removal of arterial sheath after percutaneous coronary interventions have an important point, because they are related to bleeding and vascular complications, leading to increased morbidity and hospital costs (MALAQUIAS et al, 2005).

Another noteworthy finding is that over the years it has been observed that this technique has led to anxiety among patients, since all customers in the pre-catheterization because they are potential candidates for heart surgery usually have seizure for both the complexity and risks of the procedure, as the expectation of the outcome. So, wait for the indication or not of cardiac surgery has constituted a threat, that determines the context of anxiety, typical in such cases may be a triggering factor of clinical episodes as acute myocardial infarction, valvular disease, unstable angina and cardiogenic shock (IGNACIO, 2004, ARCHER et al 2005, LIMA, PEREIRA, CHIANCA, 2006).

Several studies assess the risk factors and etiologies for the development of renal failure (ARF) after cardiac catheterization, depending on the use of contrast media. In this context, nursing is fundamental and irreplaceable role in the pre-

procedure, identifying patients with potential risk of developing ARF in the trans-catheterism, administering the contrast with the correct volume and osmolality and catheterization identified early signs that indicating the decline of renal function, ie, the nurse in the prevention, detection and treatment of ARF (LIMA, 2006).

According Camerini and Cruz (2008), the nurse, as coordinator of the nursing staff that works in the before, during and after cardiac catheterization, must look and identify risk factors for nephrotoxicity, participate in selecting the optimum contrast for each patient, in order to prevent adverse effects, especially the ARF induced by contrast.

With regard to the access route used for cardiac catheterization, we can say that the radial approach is gaining wide acceptance from the early work published by Campeau and Kiemeneij with coronary angiography and angioplasty, respectively. The main argument for such an occurrence is to reduce the incidence of complications related to the site of puncture, early ambulation, short hospital stay and lower costs. The technique requires a selection of candidates from the pulse of good amplitude, through an evaluation of collateral circulation between the radial and ulnar arteries through the palmar arch (CAMPEAU, 1989; TIFT et al, 1996; JASPERS et al, 1995).

Moreover, the radial artery has smaller size and is more subject to the occurrence of spasm of the femoral artery, which is the most common vascular access used. Thus, both the punch and the handling of catheters are more difficult compared to the Judkins technique. Because of these technical difficulties, the transradial approach is associated with a significant learning curve, and the number of cases required to gain proficiency in this technique still remains unclear (BRITO et al, 2001).

In this light, it is noted that the study of this problem is of fundamental importance for society as a whole and to the scientific community, it addresses a public health problem ever increasing, which is generating huge costs, which were reduced could be used for priority areas of health. Given this context and concerned about the high numbers of people affected by cardiovascular disease, we ask: what is the focus of scientific research published in the databases LILACS and MEDLINE? What are the advantages and disadvantages presented by the technique of cardiac catheterization?

Based on the issues raised, we make the following objectives: to identify publications on the Lilacs, Medline and scientific production on cardiovascular disease as well as the advantages and disadvantages of the cardiac catheterization.

METHODS

This is a review of the literature focusing on some aspects of the technique of cardiac catheterization, without timing constraints, using as support for research publications available in the databases of Medline (National Library of Medicine, USA) and Lilacs (Latin American and Caribbean Health Sciences), as well as articles and books referenced in those publications.

The search of review articles noted the parameters: studies that focus on coronary heart disease, the interventional cardiac catheterization. Used in this research, a controlled vocabulary - Descriptors in Health Sciences (DeCS): cardiac catheterization and coronary artery disease. During search, the first, were obtained more than 40,000 articles covering the descriptors mentioned that, after filtering, this number was reduced to 31 publications.

The criteria for inclusion of articles in that survey included: texts available online, on the subject, in Portuguese, English and Spanish in order to count as one item repeated those who appeared in more than one database, and books that cover this theme. Throughout this study, we focus on publications that were aimed at the description of the procedure, its advantages and disadvantages.

RESULTS AND DISCUSSION

Of the 31 publications surveyed, theme more evident was the high cost caused by cardiovascular disease to society in general, present in about 80% of publications. This fact is noteworthy because a large number of risk factors for the onset of cardiovascular disease is controllable, so that the occurrence of this disease is both preventable and thus reduced costs.

Other aspects and joint publications were the benefits and complications of cardiac catheterization, in 12 publications. Among the advantages are worth highlighting the rapid recovery of the patient and the short period of hospitalization (CHAVES et al, 1992; ATIK, 2002). As for the disadvantages, include those arising from the choice of means of access, the use of contrast, the vascular (NUNES et al, 1996; SWEARINGEN, HOWARD, 2002). However, it should be noted that the possible complications of this intervention can be minimized through the development of safe and effective ways of caregiving as well as the systematic practice of care, improving quality of care. In addition, awareness of health professionals to inform patients, instructing them on the benefits achieved in the understanding of both procedural and issues related to treatment adherence after hospital discharge, reduces anxiety and the risk of other probable complications of that emotional stage.

CONCLUSIONS

The results reveal, we seek to meet our goals according to the data collected during this research, as well as the analysis of data obtained during this course.

With regard to the issue most frequently in the publications surveyed, we concluded that the scientific community is increasingly mobilized to try to draw attention to issues related to the high costs of health care resulting from cardiovascular disease, directly and indirectly, to governments, health plans and to society in a way in general.

The technique of cardiac catheterization, research shows that lately it has increased the number of fans with this procedure, because it is considered an evolution of medicine can or should replace the need for surgery other therapeutic intervention, since it has detailed information about the severity of injuries caused by cardiovascular disease. However, like any procedure has advantages and disadvantages, among which the publications surveyed, especially: rapid patient recovery and short hospital stay as the most obvious advantages and disadvantages as, those inherent to the access route, the use of contrast and vascular.

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CARDIOVASCULAR DISEASES AND CARDIAC CATHETERIZATION: A LITERATURE REVIEW

ABSTRACT

INTRODUCTION: The cardiovascular diseases are the leading causes of morbidity and mortality in developed countries and in most developing countries and are responsible for high mortality rates. However, the use of a diagnostic method, such as cardiac catheterization, the correct identification of the atherosclerotic process, may be decisive in the prevention of severe complications. **OBJECTIVES:** To identify publications in the Lilacs, Medline and scientific production on cardiovascular diseases, as well as the advantages and disadvantages of the cardiac catheterization. **MATERIAL AND METHOD:** A literature review of cardiovascular disease, cardiac catheterization, their advantages and disadvantages, raised in the databases of Medline and Lilacs and publications in the area. **RESULTS AND DISCUSSION:** The high cost of cardiovascular disease was discussed in 80% of publications. 12 publications have emphasized the advantages/disadvantages arising from catheterization. **CONCLUSIONS:** Most of the publications that involve the cardiovascular addresses issues concerning the high costs of health care under such conditions; cardiac catheterization even being considered an evolution of medicine has its advantages and disadvantages, among which include: the rapid patient recovery and short hospital stay, complications of the access, the use of contrast and vascular, respectively.

KEYWORDS: cardiac catheterization and coronary artery disease, nursing

LES MALADIES CARDIOVASCULAIRES ET LE CATHÉTÉRISME CARDIAQUE: UNE REVISION DE LA LITTÉRATURE**RÉSUMÉ**

INTRODUCTION: Les maladies de l'appareil circulatoire sont les principales causes de morbidité dans les pays les plus développés et en grande partie des pays en voie de développement étant les responsables des hauts taux de mortalité. Pourtant, l'utilisation d'une méthode diagnostique de cette nature dans l'identification correcte du processus artériosclérotique peut être décisive dans la prévention de complications sévères. **OBJECTIFS:** identifier des publications dans les bases de données Lilacs, Medline et des productions scientifiques sur les maladies cardiovasculaires, ainsi que les avantages et inconvénients du cathétérisme cardiaque. **MATÉRIEL ET MÉTHODE:** révision de littérature sur les maladies cardiovasculaires, le cathétérisme cardiaque, ses avantages et inconvénients, trouvée dans les bases de données Medline et Lilacs et avec des publications importantes dans le domaine. **RÉSULTATS ET DISCUSSIONS:** le coût élevé des maladies cardiovasculaires fut abordé en 80% des publications examinées. 12 publications mirent en relief les avantages et inconvénients découlant du cathétérisme. **CONCLUSIONS:** la plupart des publications concernant les maladies cardiovasculaires abordent des questions sur les dépenses élevées de santé découlant de ces pathologies; même s'il est considéré comme une évolution de la médecine, le cathétérisme cardiaque présente des avantages et des inconvénients comme: récupération rapide des patients et peu de temps d'hospitalisation, complications dues à la voie d'accès, de l'emploi du produit de contraste et les vasculaires, respectivement.

MOTS CLES: Cathétérisme Cardiaque, Et Maladie de L'artère Coronarienne, Soins Infirmiers.

LAS ENFERMEDADES CARDIOVASCULARES Y CATETERISMO CARDÍACO: UNA REVISIÓN DE LA LITERATURA**RESUMEN**

ANTECEDENTES: las enfermedades cardiovasculares son las principales causas de morbilidad y mortalidad en los países desarrollados y en la mayoría de los países en desarrollo y son responsables de altas tasas de mortalidad. Sin embargo, el uso de un método de diagnóstico, como el cateterismo cardíaco, la identificación correcta de la arteriosclerosis, puede ser decisiva en la prevención de complicaciones graves. **Objetivos:** identificar las publicaciones en el Lilacs, Medline, las producciones científicas sobre las enfermedades cardiovasculares, así como las ventajas y desventajas de la cateterización cardíaca. **Material y Método:** una revisión de la literatura de la enfermedad cardiovascular, cateterismo cardíaco, sus ventajas y desventajas, planteadas en las bases de datos Medline, Lilacs y publicaciones en el área. **Resultados y Discusión:** el alto costo de las enfermedades cardiovasculares se debatió en el 80% de las publicaciones. 12 publicaciones han puesto de relieve los inconvenientes que ventajas derivadas de la cateterización. **Conclusiones:** la mayoría de las publicaciones que involucran las cuestiones relativas a direcciones cardiovasculares los altos costos de la atención médica en tales condiciones; cateterismo cardíaco, incluso siendo considerado como una evolución de la medicina tiene sus ventajas y desventajas, entre las que se incluyen: el rápido la recuperación del paciente y de corta estancia hospitalaria, las complicaciones del acceso, el uso de contraste y vascular, respectivamente.

PALABRAS CLAVE: Cateterismo Cardíaco, Enfermedad de la Arteria Coronaria, Enfermería

AS DOENÇAS CARDIOVASCULARES E O CATETERISMO CARDÍACO: UMA REVISÃO DE LITERATURA**RESUMO**

INTRODUÇÃO: as doenças do aparelho circulatório são as principais causas de morbimortalidade nos países mais desenvolvidos e em grande parte dos países em desenvolvimento, sendo as responsáveis por elevadas taxas de mortalidade. Porém, a utilização de um método diagnóstico, como é o caso do cateterismo cardíaco, na identificação correta do processo aterosclerótico, pode ser decisivo na prevenção de complicações severas. **OBJETIVOS:** identificar publicações nas bases de dados Lilacs, Medline e produções científicas sobre doenças cardiovasculares, bem como as vantagens e desvantagens da cateterismo do cardíaco. **MATERIAL E MÉTODO:** revisão de literatura sobre as doenças cardiovasculares, o cateterismo cardíaco, suas vantagens e desvantagens, levantada nas bases de dados do Medline e Lilacs e com publicações relevantes na área. **RESULTADOS E DISCUSSÕES:** o elevado custo das doenças cardiovasculares foi abordado em 80% das publicações pesquisadas. 12 publicações destacaram as vantagens desvantagem decorrentes do cateterismo. **CONCLUSÕES:** a maior parte das publicações que envolvem as doenças cardiovasculares aborda questões relativas aos elevados gastos assistenciais com a saúde decorrentes dessas patologias; o cateterismo cardíaco mesmo sendo considerado uma evolução da medicina apresenta vantagens e desvantagens, dentre as quais incluem-se: a rápida recuperação do paciente e pequeno período de hospitalização, complicações decorrentes da via de acesso, da utilização do contraste e as vasculares, respectivamente.

PALAVRAS CHAVE: Cateterismo Cardíaco e Doença da Artéria Coronariana, Enfermagem

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