



GLOBAL JOURNAL OF MEDICAL RESEARCH: F
DISEASES

Volume 23 Issue 6 Version 1.0 Year 2023

Type: Double Blind Peer Reviewed International Research Journal

Publisher: Global Journals

Online ISSN: 2249-4618 & Print ISSN: 0975-5888

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Methodology: This is a literature review with a search in databases, using 60 scientific articles as a basis and being filtered based on scientific impact and approach.

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GJMR-F Classification: NLM: WG 169.5



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Myocardial Revascularization in Women, An Epidemiological Analysis

Vitória Patrícia Rodrigues da Cunha ^α, Lucca Cardoso Damasceno ^σ, Heloisa Faria Gachet Rabelo ^ρ, Marcella Santana Figueredo Nunes ^ω, Bárbara Maria Oliveira da Silva ^χ, Eduarda Monteiro Machado ^ς, Laianne Barros Martins de Alcântara ^ξ, Ana Laura Passos de Magalhães ^ν, Ana Beatriz de Matos Berg Abrantes ^θ, Rebeca Mendes Peres ^ζ, Fabiana Caroline Coelho Carvalho Firme ^ε, Isabella Menezes Batista ^ε, Gabriela Tomazini Rodrigues Pereira Amorim ^φ, Aline Araújo Nogueira ^α, Arthur Azevedo Barbosa ^ϕ, Laíse Araújo Nogueira ^α, Anna Caroline Modesto Louvem ^δ, Dra. Aline de Amorim Duarte ^μ, Dayane Carolini Rodrigues ^ε, Edson Brunetti Da Silva ^ϕ & Rebecca von Dannecker [∞]

Abstract- Introduction: Due to its high mortality rate, it is necessary to discuss and understand the aspects surrounding atherosclerotic diseases, including the current role of revascularization in a large number of cases. Additionally, it is necessary to discuss the aging process in women and the effects of hormonal changes.

Methodology: This is a literature review with a search in databases, using 60 scientific articles as a basis and being filtered based on scientific impact and approach.

Results: Complex atherosclerotic diseases are more common in female patients, and these conditions often coexist with other conditions like diabetes and hypertension, as well as obesity and sedentary lifestyles. As the most common chronic non-communicable disease in the nation, hospitalizations have a significant influence on public health, which must be understood and discussed. As the most common chronic non-communicable disease in the nation, hospitalizations have a significant influence on public health, which must be understood and discussed.

Final considerations: Since patients who required myocardial revascularization were men, it is crucial to comprehend this shift in the landscape because there are numerous risk factors, primarily related to aging's physiological changes. In order to maintain a higher quality of life and lower death rates associated with atherosclerotic diseases and myocardial revascularization, it is crucial to monitor women's health starting at an adult age and provide counseling for healthy living practices.

Keywords: revascularization of the myocardium; risks; atherosclerotic conditions.

I. INTRODUCTION

Atherosclerotic disease and myocardial revascularization as treatments come into play when studying chronic non-communicable diseases; these topics are frequently brought up in clinical and academic discussions because they are among the illnesses that account for the majority of fatalities in the nation. (GUTIERRE, CARDORE). In addition, it is important to note that the major changes in human life have a significant impact on the development of this pathology, as evidenced by bad eating habits and a sedentary lifestyle (LINS, 2017). Acute myocardial infarction (AMI) and stroke are the

main causes of death in Brazil for women over 50, according to the Ministry of Health (MS). Among these discussions, it is important to note that eating habits have a direct impact on this, as the increase in the consumption of industrialized products and the constant occupation of a routine have led people to choose to eat Fast Food, with foods high in fats being a series of negative actions that, as one ages, one begins to feel the negative effects of these lifelong practices. In addition, neglect of health and ignorance have a significant impact on the increase in serious cases, and ignorance has a significant impact on neglect and lack of care. The factors of habits already mentioned are corroborated by this picture, yet without the necessary follow-up for a search for disease prevention, the numbers of hospitalizations and deaths have increased (GWENDOLIN, 2017). By realizing that estrogen functions as a preventive factor and that age, particularly the reproductive age of women, has a direct impact on the processes of atherosclerotic disease development. However, in the postmenopausal period, this factor does not happen due to the hormonal low, which, combined with other risk factors such as advanced age, hypertension, diabetes, obesity, and lifestyle, leads to a worsening in the morbidity and mortality of patients. In order to develop projects and preventive measures, as well as to adjust the current framework given its significance in epidemiological terms, it is therefore interesting to link these parameters with the epidemiological characteristics. Since there are many patients undergoing coronary artery bypass graft surgery, it is important to comprehend and embrace the patient as a whole before analyzing the factors surrounding the procedure, such as risk factors and aging processes. (TAVARES, 2020)

Myocardial revascularization surgery plays a crucial role in resolving coronary artery disease, in which fat accumulates in the coronary arteries. As it is an extensive surgery and requires good postoperative support, the preoperative study is extensive and covers all risk, morbidity, and mortality factors.



II. METHODS

This is a literature review whose sources were taken from the SciELO and PubMed data platforms. The research period was July 2023, meeting the inclusion criteria of articles from the years 2000 to 2023, in Portuguese and English, online texts, and full texts. As strategies for better evaluation of the texts, the following health descriptors (DeCS) were used: "Myocardial revascularization", "Women" and "Risks". In addition, the public database DATASUS was used on an epidemiological basis.

III. RESULTS AND DISCUSSION

By understanding the importance and impact of risk factors for the need for myocardial revascularization, it is understood that the risk factor that most surrounds the main studies is the gender factor, as seen in the study (CADORE, 2007) at Hospital San Lucas da PUC-RS in 2007. This study identified 11 predictors for death in coronary artery bypass graft surgery, which formed the score: age ≥ 60

years, surgery in women, In the present study, mortality was higher in women (11.9% versus 9% in men), which is an independent risk factor for hospital death.

In another aspect, in females, obesity is twice as evident in patients with atherosclerotic disease (BRUNORI EHFR et al., 2014). An interesting factor relates to the eating and living habits of a large part of the population. By addressing the bias of a sedentary lifestyle, the risks become more evident, as do the main impacts on the patients' lifestyle habits.

It is understood as a risk factor for the need for myocardial revascularization: Risk factors for the development of coronary artery disease (CAD) are systemic arterial hypertension (SAH), smoking, dyslipidemias, obesity, diabetes mellitus (DM), family history, and a sedentary lifestyle; however, in women, some of these factors have a more pronounced effect. In addition, women are subject to specific causes, such as hypertension in the pregnancy cycle, gestational diabetes, and premature birth, which are related to increased cardiovascular risk in the long term.

► MORBIDADE HOSPITALAR DO SUS - POR LOCAL DE INTERNAÇÃO - BRASIL

Internações segundo Região
 Capítulo CID-10: IX. Doenças do aparelho circulatório
 Lista Morb CID-10: Arteroesclerose
 Período: Jan-Mai/2023

Região	Internações
TOTAL	11.349
1 Região Norte	489
2 Região Nordeste	3.034
3 Região Sudeste	5.162
4 Região Sul	1.871
5 Região Centro-Oeste	793

Fonte: Ministério da Saúde - Sistema de Informações Hospitalares do SUS (SIH/SUS)

Notas:

1. Situação da base de dados nacional em 29/04/2016.
2. Dados de janeiro de 2015 até março de 2016 sujeitos a retificação.

Figure 1: Epidemiological table of hospital morbidity by place region

Figure 1 illustrates the impact of atherosclerotic disease by showing that there were 11,349 deaths in 5 months. In addition, it is worth mentioning and emphasizing the focus on the Southeast

Region, given the routine and life dynamics of most residents, as well as their lifestyle habits, which provide more risk factors for the development of atherosclerotic disease.

► MORBIDADE HOSPITALAR DO SUS - POR LOCAL DE INTERNAÇÃO - BRASIL

Internações segundo Região
 Lista Morb CID-10: Arteroesclerose
 Sexo: Fem
 Período: Jan-Mai/2023

Região	Internações
TOTAL	4.949
1 Região Norte	232
2 Região Nordeste	1.417
3 Região Sudeste	2.227
4 Região Sul	740
5 Região Centro-Oeste	333

Fonte: Ministério da Saúde - Sistema de Informações Hospitalares do SUS (SIH/SUS)

Notas:

1. Situação da base de dados nacional em 29/04/2016.
2. Dados de janeiro de 2015 até março de 2016 sujeitos a retificação.

Figure 2: Epidemiological table of hospital morbidity by place of hospitalization for females

Given that this is the chronic, non-communicable disease that kills the most people in the nation, it is crucial to comprehend and debate the effect that hospitalization rates have on public health. Figure 2 indicates that female patients account for a significant proportion of hospitalizations, and it should be understood that this is reflected in the images of myocardial revascularization.

According to the study, "Clinical profile of women undergoing revascularization surgery," patients undergoing coronary artery bypass grafting and valve replacement were predominantly female (33.8%) and elderly (60.89 years), which is a rare finding in the literature given that studies show that males and the elderly make up the majority of patients undergoing coronary artery bypass grafting surgeries (GUTIERRES, 2020).

On the other hand, according to (Choles FE, et al. 2015), diabetic women have more coronary lesions compared to non-diabetic women. There is evidence that women with diabetes mellitus have worse outcomes than men. In addition, diabetic women with atherosclerotic disease undergoing revascularization have a higher risk of restenosis due to pathophysiological changes at the vascular level, a decrease in the protective effect of estrogens after menopause, and the fact that the caliber of their arteries is smaller than that of non-diabetic women and smaller than that of men. In them, revascularization of the anterior descending artery with coronary artery bypass grafting is associated with a higher incidence of adverse outcomes in the short and medium term (MOTA, 2015).

IV. FINAL CONSIDERATIONS

Thus, it is essential to understand this change in perspective since patients who needed myocardial revascularization were men, and this profile is constantly changing since there are several risk factors, mainly due to the physiological changes of aging. Finally, monitoring women's health since adulthood, with guidance for healthy lifestyle habits and specialized monitoring in the climacteric period, is essential to maintaining a better quality of life and reducing mortality rates related to atherosclerotic diseases and myocardial revascularization.

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