ORIGINAL ARTICLE

Cardiovascular Risk Factors, Functionality, and Quality of Life in Climacteric Women

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Abstract

Background: Cardiovascular disease (CVD) comprises a group of cardiac and circulatory diseases. Despite the high incidence in males, women after menopause have an exponential increase in the risk of CVD.

Objective: To identify the leading risk factors for CVD and describe quality of life and functionality in women hospitalized for cardiac causes during the climacteric period.

Materials and methods: Observational descriptive study. Quality of life was assessed through the SF-36 questionnaire, and functionality through the Functional Independence Measurement (FIM) scale. Records were used to identify the main risk factors associated with CVD in climacteric women.

Results: We included 30 patients (mean age, 55 ± 6 years). The mean FIM score was 118 ± 3, and the mean SF-36 score, 20 ± 10. Hypertension and sedentary lifestyle were the most prevalent cardiovascular risk factors in these women.

Conclusion: Hypertension and sedentary lifestyle were the most prevalent cardiovascular risk factors in this sample of climacteric women hospitalized for cardiac causes. Quality of life was strongly affected, with social, emotional, and mental health domains showing the most impact.

Keywords: Climacteric; Quality of life; Cardiovascular disease.

Introduction

Cardiovascular disease (CVD) is a major global public health problem[1] and the leading cause of death in developed countries. Risk factors for CVD can be divided into modifiable and non-modifiable. The modifiable ones include dyslipidemia, smoking, hypertension, diabetes mellitus, physical inactivity, and obesity. The non-modifiable ones are age, sex, and family history.[2]

Among the most prevalent cardiovascular diseases in this population, patients with CVD, are heart failure (HF) and coronary artery disease (CAD).[3-6]

The climacteric is defined as a biological phase of life, not a pathological process, which comprises the changes that occur between the reproductive and non-reproductive periods of a woman's life. This stage of the life cycle, which can be divided into premenopausal, peri-menopausal, and postmenopausal phases, predisposes women to a set of signs and symptoms known as the climacteric syndrome. It is also a risk factor for several conditions, including CVD.[7] This increased risk is related to hormonal, circulatory and blood changes that occur during the climacteric.[8,9]

CVD and its risk factors have a negative impact on quality of life. Reductions in peripheral muscle endurance during hospitalization has a negative impact on functionality, resulting in increased care costs and reduced quality of life. It is essential to avoid and mitigate loss of muscle conditioning

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as early as possible in hospitalized patients, as immobilization or reduced weight support due to hospitalization can result in neuromuscular, cardiovascular, respiratory, and cognitive complications, impacting quality of life and persisting for up to five years after hospital discharge.[8]

The aim of this study was to identify the main risk factors for CVD and to describe quality of life and functionality level in women hospitalized during the climacteric period.

Materials and Methods

This was an observational descriptive study conducted at a cardiology referral hospital in the state of Bahia, Brazil. The study was approved by the Research Ethics Committee of *Faculdade Nobre* with opinion number 2.002.947. All participants provided written informed consent.

Eligibility Criteria

The inclusion criteria were female sex, age >45 years, and hospitalization for cardiac causes (such as acute myocardial infarction, heart failure, or cardiac surgery). The exclusion criteria were any factors that precluded completion of the questionnaires, such as neurological disorders, mental confusion, and preexisting cognitive limitations, as well as refusal to provide informed consent. Participants were recruited by convenience, with no sample size calculation.

Study Protocol

Patients who met the inclusion criteria and agree to participate were evaluated during hospitalization. The Medical Outcomes Study 36 - Item Short-Form Health Survey (SF-36) questionnaire was administered to assess quality of life, and the Functional Independence Measurement (FIM) scale, to assess functionality. In addition, we identified the main risk factors for CVD, such as hypertension, diabetes mellitus, and dyslipidemia, through a review of medical records. Participants were considered physically inactive if they engaged in less than 150 min/week of physical activity, as assessed by the International Physical Activity Questionnaire (IPAQ). Patients were further categorized as nonsmokers or smokers (current or former). Those with a smoking cessation period longer than one year were considered former smokers.

Measurement Instruments

The FIM assesses the individual's degree of performance on a set of 18 basic and instrumental tasks of daily living, involving self-care, sphincter control, transfers, locomotion, communication, and social cognition. The scale includes motor (FIMm), cognitive (FIMc), and total (FIMt) domains. Its total score ranges from 18 to 126; each item can be rated from 1 to 7, with a value of 1 corresponding to total dependence and a value of 7 corresponding to normal performance of tasks in an independent manner.[10]

To assess the quality of life of the patients, the SF-36 questionnaire was applied. Numerous instruments can be used for quality-of-life studies. The SF-36 is a generic, easily administered, and understandable quality of life assessment tool.[11]

The SF-36 consists of 36 items across 8 scales: physical functioning (10 items), role limitations due to physical aspects (4 items), bodily pain (2 items), general health (5 items), energy/fatigue (4 items), social functioning (2 items), role limitations due to emotional aspects (3 items), and emotional well-being (5 items), which assess both negative aspects of health (illness or disease) as well as positive aspects (well-being). The questionnaire was designed to study the quality of life of people with more than one condition or to reflect the impact of a disease on patients' lives in diverse populations, and to narrowly assess certain aspects of quality of life. The questionnaire has a final score of zero to 100 points, where zero corresponds to the worst and 100 to the best perception of quality of life.

Statistical Analysis

A descriptive analysis of the data was performed in SPSS 20.0. Data were expressed as means and standard deviations or absolute and relative frequencies, as appropriate.

Results

During the study period, 30 climacteric women, all admitted to the study hospital for cardiac causes, were enrolled in the sample. The mean age was 55 ± 6 years, and the mean body mass index was 23 ± 3 kg/m^2. Table 1 shows the reasons for admission and CVD risk factors of the participants.

Table 2 presents the participants' functional independence and quality of life, as assessed by the FIM and SF-36. The mean FIM score was 118 ± 3. The highest mean SF-36 scores were found in the physical functioning domain (75 ± 5), while the lowest occurred in the bodily pain domain (20 ± 10).

Table 1 – Clinical data of study participants

Variable	Total patients (n = 30)
Age (years)	55 ± 6
Body mass index (kg/m²)	23 ± 3
Reason for admission	
Cardiac surgery	15 (50%)
Acute myocardial infarction	9 (30%)
Heart failure	6 (20%)
Cardiovascular risk factors	
Diabetes mellitus	13 (43%)
Hypertension	18 (60%)
Dyslipidemia	15 (50%)
Sedentary lifestyle	17 (57%)
Smoking	6 (20%)
Length of stay (days)	5 ± 2

Table 2 – Functional independence and quality of life of participants

Variable	Mean ± standard deviation
Functional Independence Measure	**118 ± 3**
Quality of life	
Physical functioning	75 ± 5
Role limitations, physical	70 ± 8
Bodily pain	20 ± 10
General health	70 ± 5
Energy/fatigue	60 ± 10
Social functioning	30 ± 5
Role limitations, emotional	40 ± 10
Emotional well-being	50 ± 12

Discussion

The present study found that, in a convenience sample of climacteric women admitted to a cardiology referral hospital, hypertension and physical inactivity were the most prevalent risk factors for CVD.

Studies have shown that the prevalence of hypertension increases gradually with age; in women, this process occurs especially in the early postmenopausal phase.[12] Some studies suggest that regular (daily) physical activity has a positive effect on the endothelium and may attenuate vasodilation, preserving nitric oxide bioavailability and resulting in healthier natural aging for women.[13] In our sample, physical inactivity was highly prevalent.

A key component of reducing modifiable risk factors for CVD is to raise awareness of their potential for harm. Nevertheless, most patients interviewed noted that they were already aware of the risk factors, but did not engage in physical activity or weight loss to reduce these factors. Pursuing healthier lifestyles, engaging in physical activity, smoking cessation, periodic control of blood pressure, and nutritional counseling are appropriate for proper weight maintenance and control og blood glucose and cholesterol.

Half of the women surveyed had some type of dyslipidemia. This finding reinforces the importance of identifying and treating dyslipidemia during the climacteric in order to reduce morbidity and mortality rates in women.[14]

Compared to other studies, smoking was the most frequently identified risk factor (one in two women evaluated). This result is consistent with that found by other studies within Brazil, but with a lower prevalence than those reported.[15] Concern about smoking is explained by the fact that nicotine, by autonomic stimulation, promotes acceleration of heart rate and spasm of arterial vessels, contributing to hypertension.

During the climacteric, women go through a process of gradual physiological transition due to decreased estrogen, resulting in postmenopausal changes.[16] In addition to the typical disorders of this period, women undergo other physiological changes that may begin to emerge around age 40 and extend to age 70 in rarer cases. Physical and/or emotional disorders may arise in certain stages of the climacteric—feelings of failure, aging, mood swings, and beauty—and affect quality of life.[17-20]

One study reports that 50% to 70% of climacteric women manifest somatic symptoms and emotional difficulties. In addition, preexisting clinical comorbidities, may explain many of these somatic

and emotional complaints.[21] Another study showed that when women were asked about comorbidities, there was a significant prevalence of self-reported hypertension—about 30% distributed across groups.[22] This corroborates the predominance of hypertension in the present study.

Variations in steroid hormones and opioid peptides during the climacteric period seem to interfere with regulation of the hypothalamic thermoregulatory system; this dysfunction, in turn, may favor onset of the vasomotor symptoms of menopause. Therefore, the more severe this dysfunction, the worse the woman's quality of life and possibility of developing depressive episodes.[23] It is therefore understandable why the participants of the present study scored poorly on the emotional domains of the SF-36, with values considered low when compared to the non-climacteric period.

The presence of any chronic disease was related to a deterioration in quality of life in the emotional well-being and general health domains. It is believed that the onset of illness directly affects quality of life, and the higher the number of chronic diseases, the worse the quality of life.[24] According to the SF-36, physical functioning reached an average score of 75 of the interviewed patients, which indicates these women did not experience a decrease in functional capacity during the climacteric. However, they reported a significant increase in bodily pain this period.

Given these risk factors, it is of great importance to develop programs and strategies aimed at health promotion, symptom relief, prevention, and control of the most frequent cardiovascular diseases, seeking to improve the quality of life of this population.

Among the limitations of the study, we can highlight the lack of sample size calculation and the absence of follow-up monitoring to verify patients' outcomes.

Conclusion

Hypertension and sedentary lifestyle were the most prevalent cardiovascular risk factors in this sample. Quality of life was significantly affected, with social, emotional, and mental health domains showing the most impact.

Author contributions

Conception and design of the research: Chaves JVCS, Cordeiro ALL, Pinto KLS, Sousa KM. Acquisition of data: Chaves JVCS, Pinto KLS, Sousa KM. Analysis and interpretation of the data: Chaves JVCS, Cordeiro ALL. Statistical analysis: Cordeiro ALL. Writing of the manuscript: Cordeiro ALL, Pinto KLS, Sousa KM. Critical revision of the manuscript for intellectual content: Oliveira L.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

Sources of Funding

There were no external funding sources for this study.

Study Association

This study is not associated with any thesis or dissertation work.

Ethics approval and consent to participate

This study was approved by the Ethics Committee of the *Faculdade Nobre* under the protocol number 2.002.947. All the procedures in this study were in accordance with the 1975 Helsinki Declaration, updated in 2013. Informed consent was obtained from all participants included in the study.

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