PERFIL EPIDEMIOLÓGICO DE PACIENTES COM NEOPLASIA MALIGNA DE MAMA NA REGIÃO NORTE DE MINAS GERAIS

Epidemiological profile of patients with malignant breast neoplasia in the northern region of Minas Gerais

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Abstract: Breast cancer is a public health problem in Brazil and the world and is the most frequent malignant neoplasm in the female gender. **Objective**: The objective of this study was to know the epidemiological profile of breast cancer in the North of Minas Gerais, Brazil, from 2008 to 2017. **Methodology**: This was a cross - sectional, retrospective, quantitative, descriptive study using DATASUS secondary data regarding breast cancer hospitalizations in the northern region of Minas Gerais, from January 2008 to December 2017. Descriptive analyzes were performed using absolute values (n), relative (%), and mean using Excel® 12.0 software. **Results**: Of the hospitalizations for breast cancer in the period and region analyzed, 97.74% were female, 26.51% were in the age group 50-59 years old, 71.65% were brown, representing an average of 239.5 ($\pm$ 78.1) hospitalizations per year and 17.6 ($\pm$ 6.2) deaths per year, of which 26.14% occurred in the age range from 50-59 years. **Conclusion**: The prevalence of hospitalizations for breast cancer was higher among women, brown breed, in the age group from 50 to 59 years. These numbers increased in the period from 2009 to 2015, the absolute number of deaths remained practically constant over the years, and the mortality rate increased progressively with age and was considerably higher in males.

Keywords: Breast Cancer; Morbimortality; Mortality.

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Perfil epidemiológico de pacientes com neoplasia maligna de mama na região norte de minas gerais

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Resumo: O câncer de mama é um problema de saúde pública no Brasil e no mundo, sendo a neoplasia maligna mais frequente no sexo feminino. **Objetivo**: Conhecer o perfil epidemiológico do câncer de mama no Norte de Minas Gerais, no período de 2008 a 2017. **Metodologia**: Trata-se de um estudo transversal, retrospectivo, quantitativo, de caráter descritivo, no qual se utilizaram dados secundários do Departamento de Informática do Sistema Único de Saúde (DATASUS), referentes às internações por câncer de mama na macrorregião de saúde do norte de Minas Gerais, no período de janeiro de 2008 a dezembro de 2017. Foram processadas análises descritivas por meio de valores absolutos (n), relativos (%) e média, através do *software* Excel® 12.0. **Resultados**: Das internações por câncer de mama no período e região analisados, 97,74% eram do sexo feminino, 26,51% na faixa etária de 50 a 59 anos, 71,65% pardas, que representaram uma média de 239,5 (±78,1) internações por ano e de 17,6 (±6,2) óbitos por ano, dos quais 26,14% ocorreram na faixa etária de 50 a 59 anos. **Conclusão**: A prevalência de internações por câncer de mama foi maior entre mulheres, pardas, na faixa etária de 50 a 59 anos. Esses números cresceram no período de 2009 a 2015, o número absoluto de óbitos manteve-se praticamente constante ao longo dos anos, a taxa de mortalidade aumentou progressivamente com a idade e foi consideravelmente mais alta no sexo masculino.

Palavras-chave: Câncer de Mama; Morbimortalidade; Mortalidade.

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INTRODUCTION

Cancer is an important public health problem worldwide, being responsible for more than six million deaths each year, representing approximately 12% of all causes of death in the world. Although the highest incidence rates of cancer are found in developed countries, the ten million new cancer cases annually, five and a half million are diagnosed in developing countries[5].

Breast cancer is a malignant neoplasm more frequently in females, representing 23% of all cases worldwide. Annually, it is verified that more than one million women are diagnosed around the world and above 410,000 will die from this disease. This neoplasm is more frequent in developed countries and the highest incidences are observed in the United Kingdom, Australia, United States of America (USA) and Canada. Although the mortality of patients with breast cancer still present upward trend in several countries for several years, developed countries such as the USA, United Kingdom and Australia have already recorded decrease in mortality, and this decrease attributed to the extended use of mammography and early treatment of the disease. In general, the mean survival of patients with breast cancer is higher than five years in developed countries such as in the USA, Canada, Japan and some countries of western Europe, and lower in developing countries such as Algeria, Brazil and Eastern Europe. Such differences in survival rate can be explained by the more advanced stages of diagnosis in developing countries[13].

It is believed that the mortality rates for breast cancer remain high because the disease is being diagnosed in advanced stages. In an attempt to reduce these rates, it is realized the need of knowing the socioeconomic and demographic profile and the risk factors of women affected by breast tumors, once the peculiarities of religious and cultural beliefs can influence the greater or lesser therapeutic adherence[14].

The study of the epidemiological trend of breast cancer in Brazil highlights its relevance in the context of public health and reinforces the need for ongoing research on the subject, pointing out the importance of socioeconomic, reproductive and environmental issues that may be related to the risk on survival[12].

Breast cancer still represents an important public health problem in Brazil, so it is important to describe the

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epidemiological aspects of the disease, because through the knowledge of the characteristics of this population enables the clinical use of these data by an interdisciplinary team, favoring the development of intervention strategies and measures according to each demographic region[7].

Thus, seeking a better understanding of the epidemiological variables associated with brast malignant neoplasm, the objective of this study is to understand the epidemiological profile of breast cancer in the North of Minas Gerais, in the period from 2008 to 2017.

METHODOLOGY

Aiming to achieve an approach of the epidemiological profile updated about breast cancer in the northern region of Minas Gerais, a retrospective cross-sectional study, quantitative of descriptive character was carried out. Secondary data on hospital morbidity and mortality of the Unified Health System (SUS) by site of care were used, obtained from the Hospital Information System of SUS (SIH/SUS), by means of the data base of the Department of Informatics of Sistema Único de Saúde (DATASUS), regarding hospitalizations due to breast malignant neoplasm in healthcare macroregion north of Minas Gerais in Brazil, in the period from January 2008 to December 2017. The variables evaluated were: number of hospitalizations, sex, age, race, and character of hospitalizations, average length of stay and expenses in accordance with the regime of hospitalization, deaths and mortality rate. Because it is a database of public domain, it was not necessary to submit the project to the committee on ethics in research involving humans(CEP).
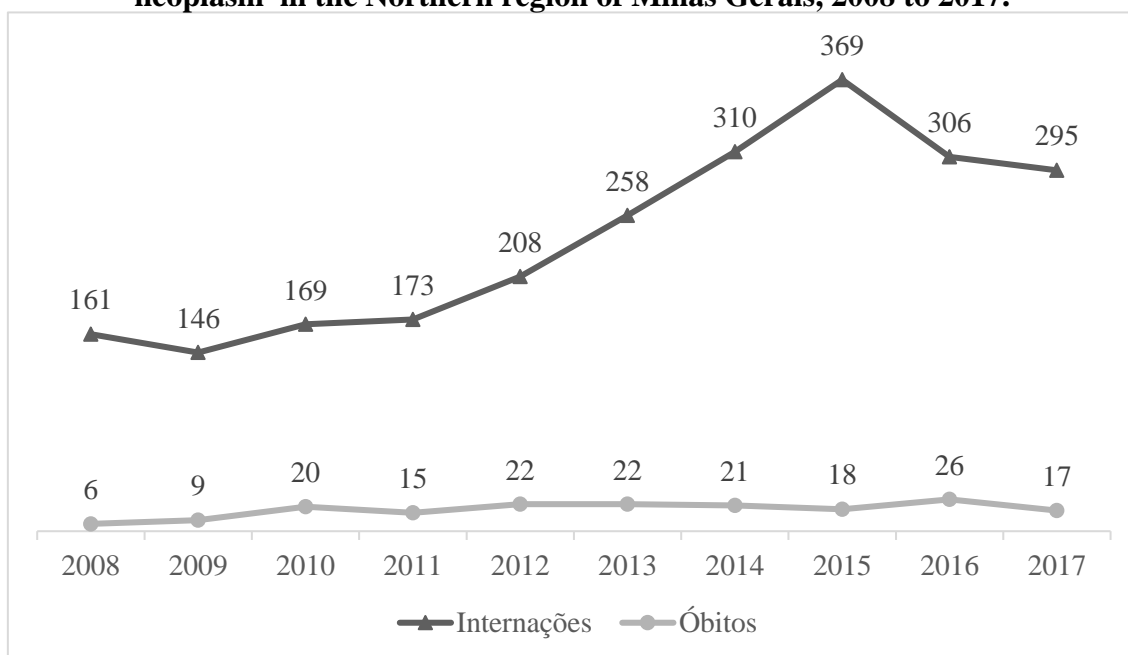
software Excel® 12.0 (Office 2013) was used, for the construction of the database and analysis of the same. Exploratory analyzes were performed (descriptive)of the data from the calculation of absolute simple frequencies and percentages, being that they were reorganised in graphs and tables.

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RESULTS

In the period from 2008 to 2017 a total of 2395 patients with breast cancer were admitted in the north of Minas Gerais macroregion, which represented 3.9% of the cases in the state. The number of hospitalizations ranged from 146 to 369 cases, with an average of 239.5 cases. There was a significant increase in the number of admissions from 2009 to 2015 (127.7%) and a decrease in subsequent years (20%). However, despite significant variations in the number of hospitalizations per year, it is possible to notice that the number of deaths due to breast cancer in the same period and region has remained almost constant, maintaining an average of 17.6 (±6.2) deaths per year. The number of deaths was 176 throughout the period evaluated, representing 7.35% of the total number of admissions (Figure 1).

Figure   1 - Number of hospitalizations and mortality rate due to breast malignant neoplasm in the Northern region of Minas Gerais, 2008 to 2017.

Source: System of Hospital Information of SUS (SIH-SUS).

From the sociodemographic analysis of affected patients, a predominance of the number of cases in females (97.74%) is observed. Furthermore, concerning age, a little more than half (52.27%) occurred among patients aged 40 to 59 years, being that the greatest number of cases

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occurred in the age group from 50 to 59 years (26.51% of the cases), followed by the group from 40 to 49 years (25.76%). Concering race, a predominance of brown color was observed, being responsible for 71.65% of the cases (Table 1).

As to the regime of hospitalizations, it was observed that the largest number occurred in the private system, being responsible for 70.94% of all hospitalizations, having the public regime only 1.71% of the cases. In relation to the character of the hospitalizations, a prevalence of elective character in relation to the urgency is observed, representing 71.65% of the cases. In addition, there is a greater average length of stay in the public system (6.4 days), in relation to the private sector (3.3 days) (Table 1).

Concerning the total expenses with the admissions when it comes to the type of regime, a significant predominance of expenses in the private system was observed (58.55%). However, a significant proportion of hospitalizations (41.05%) did not inform the expenditures regime (Table 1).

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Table 1 - Sociodemographic profile of patients assisted by breast malignant neoplasm in the Northern region of Minas Gerais, 2008 to 2017.

Variables	n	%
Sex		
Female	2341	97.74
Male	54	2.26
Age range		
Under 20 years old	22	0.91
20 to 29 years	42	1.75
30 to 39 years	292	12.19
40 to 49 years	617	25.76
50 to 59 years	635	26.51
60 to 69 years	466	19.46
70 to 79 years	233	9.73
80 years and over	88	3.67
Race		
White	310	12.94
Black	058	2.46
Brown	1716	71.65
Yellow	004	0.17
No information	307	12.82
Regime		
Public	41	1.71
Private	1669	70.94
Ignored	685	28.6
Character		
Urgent	679	28.35
Elective	1716	71.65

Source: System of Hospital Information of SUS (SIH-SUS).

Figure 2 shows the prevalence of hospitalizations for breast malignant neoplasm for every 100 thousand inhabitants, according to the region of the North of Minas. It is possible to observe that the average prevalence among microregions of this area is 76.07 cases per 100,000 inhabitants. Th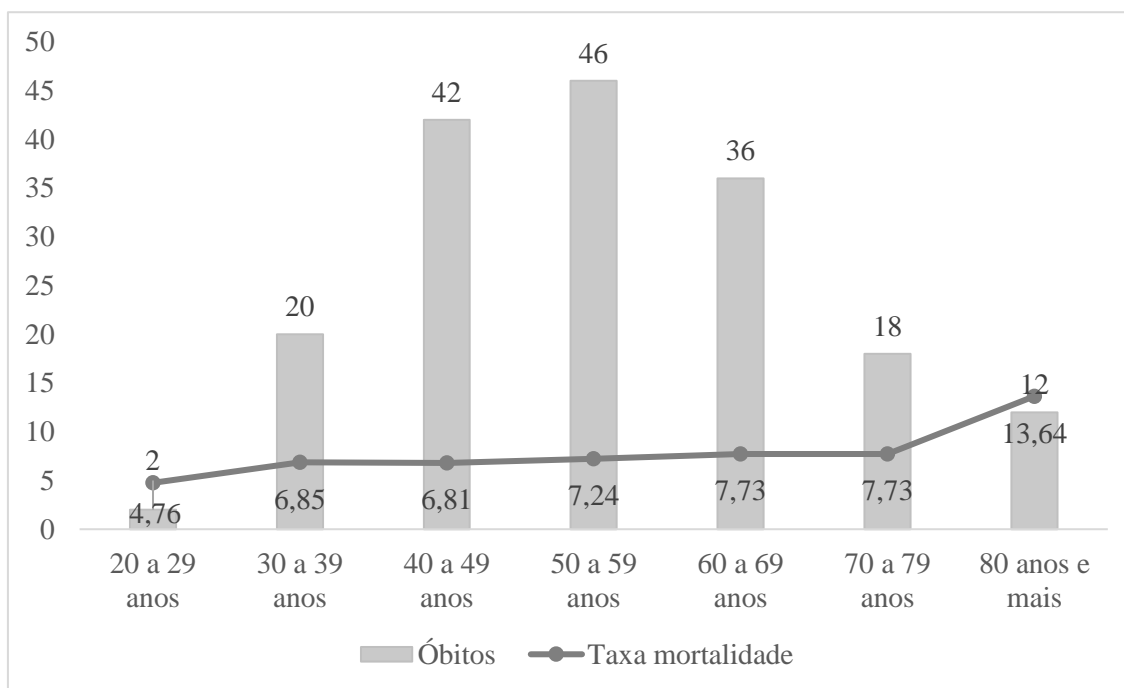e microregion that presents more distant values of this average is Bocaiuva and Montes Claros, which has a prevalence of 518.13 cases for every 100,000 inhabitants.

When analyzing the number of deaths by age range, these began to occur from the age from 20 to 29 years, progressively increasing until it reaches its peak in the most affected age group,

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from 50 to 59 years (26.14%), then back to decrease with increasing age. The second most affected age range was 40 to 49 years (23.86%), which together represent 50% of the total number of deaths. Such distribution follows the same distribution of the number of hospitalizations. However, the mortality rate presents a progressive increase in function of age, with a considerable increase from 80 years, where the rate almost doubles, going from 7.73 to 13.64 (Figure 3).

Figure 3 - Number of deaths and mortality rate due to breast cancer in the northern region of Minas Gerais State, by age, in the period from 2008 to 2017.

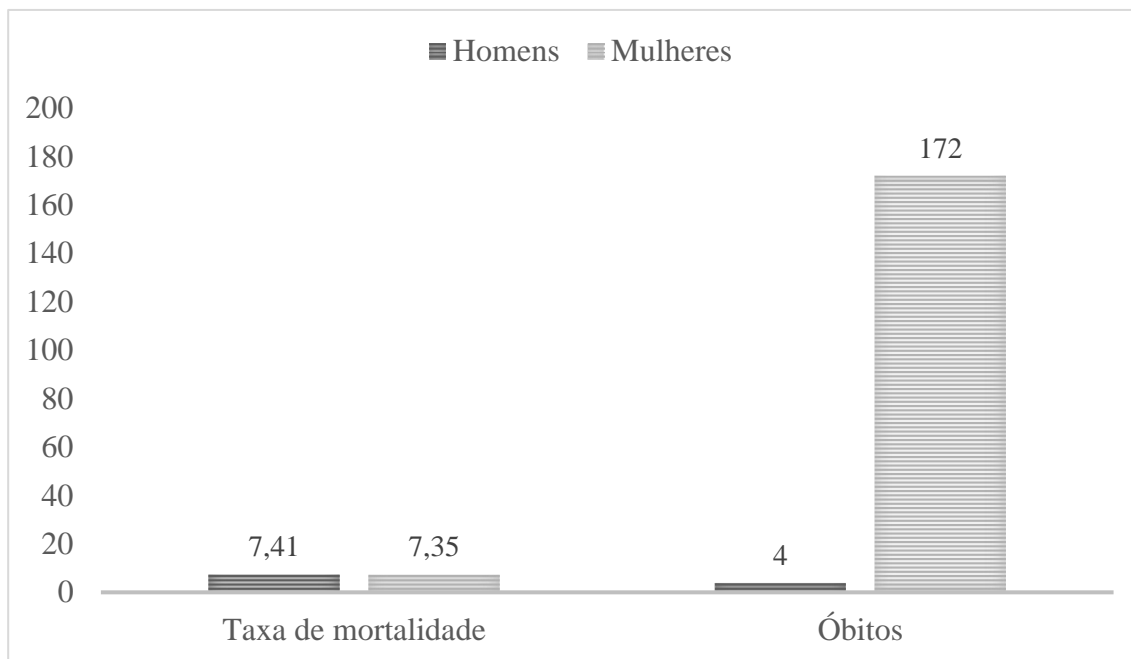**Source:** System of Hospital Information of SUS (SIH-SUS).

As to the number of deaths, this is significantly higher in women, being responsible for 172 deaths, which represents 97.7% of all deaths. However, despite the great discrepancy of deaths between the sexes, upon analyzing the mortality rate, it is realized that men have a higher rate than women, 7.41 and 7.35, respectively (Figure 4). In the age range from 50 to 59 years, the mortality rate among men is twice that among women; and in the

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range from 60 to 79 years, the male mortality rate is almost triple the rate of

female mortality.

Figure 4 - Number of deaths and mortality rate due to breast cancer in the

northern region of Minas Gerais State, by sex, in the period from 2008 to 2017.

Source: System of Hospital Information of SUS (SIH-SUS).

DISCUSSION

In global terms, breast cancer is considered the most frequent malignant tumor among women, with an estimated risk of 56.33 cases per 100 thousand women, according to INCA[6]. It is the second most frequent type of cancer in the world and is in first place among those that affect women[15]. The results of this study showed that in the period from January 2008 to December 2017, in the north of Minas Gerais macroregion, 97.74% of the cases of hospitalization for breast cancer were in women. Studies have stated that both in Brazil and in Minas Gerais, breast cancer was more prevalent in women[2].

The epidemiological data regarding age serve as a subsidy for a prior analysis, i.e., routing for public tracking policies, as well as will enable a more cautious intervention later[15]. In this study, the age range whose hospitalization due to breast cancer was more prevalent was from 50 to 59 years

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(26.51%), followed by the age range from 40 to 49 years (25.76%), together representing over half of the cases (52.27%), similar data were recorded in a previous study[4]. From 40 years of age, the incidence of breast cancer becomes more common[11]. Other studies have indicated the age range from 50 to 69 years as the most prevalent for breast cancer in Brazil and in different regions of the country,[3, 11.]

Regarding race, the majority of hospitalizations for breast cancer in the period and region analyzed by this study was by brown people (71.65%), data that corroborate with the study carried out with women in Minas Gerais state[4]. However, some authors have found the white race as the most affected, followed by the brown race[3]. However, these authors considered about the lack of reliability of data relating to race in Brazil, because it is a country with intense racial miscegenation. Other authors have also questioned the reliability of these data due to lack of conceptual standardization regarding the definitions of categories of race and ethnicity in the scientific community[8]. Thus, the predominance of any pathology, including breast cancer, in a particular type of race, becomes questionable[3].

It is possible to observe that the microregion of Montes Claros and Bocaiuva presents a much higher prevalence for breast cancer in relation to the other microregions of the north of Minas Gerais analyzed by this study. This occurs due to the large structure and complexity of existing health care in this area, especially in the city of Montes Claros, making it a reference center in health within the north of Minas Gerais. This can be proved by the studies on the quality of care in Montes Claros, which confirmed the efficiency of health teams of the city in performing maintenance on the population health included in the municipality[9].

According to the schemes of hospitalizations in the national scenario, the public system is responsible for the care of more than 70% of Brazilians, and the majority of patients are referred by the Unified Health System (SUS). However, in this study a greater predominance of the private regime was verified, being responsible for 70.94% of all hospital admissions. In addition, observing the character of hospitalizations, it is possible to notice a

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predominance of elective character, a fact that was also observed in a study conducted recently with women from Minas Gerais state[4]. The predominance of visits in elective character is related to the fact that the majority of hospitalizations are scheduled for appropriate interventions, such as, for example, implementation of surgical interventions (mastectomies), and chemotherapy treatments.

In Brazil, the prevalence of hospitalization has been increasing every year[1]. The present study identified a 152.8% increase in the number of hospitalizations due to breast cancer in the period from 2009 to 2015, in the region analyzed. This result corroborates other studies that also observed an increase in the total occurrence of hospitalizations for breast cancer during the years[1, 4]. Such findings may represent the reflection of a Brazilian public policy, the implantation of the Information System of the Breast Cancer Control (SISMAMA), by means of Decree No 779 dated from December 31st of 2008, impacting on both access to health services, and in the control of cases.

The number of deaths caused by breast cancer in the region and period analyzed remained virtually constant over the years, differing from the significant variations in the number of hospitalizations per year. When analyzing the number of deaths by age and sex, it was observed that these numbers followed a distribution similar to the number of hospitalizations. Whereas the rate of mortality was higher in males, representing approximately twice the mortality rate of females aged 50 to 59 years and three times in the range from 60 to 79 years. These findings corroborate with other studies that deal with the differences in the structure and breadth of public policies about the health of man and woman in Brazil[3].

The mortality rate still presents a progressive increase with age, growing considerably from 80 years. These results suggest a greater fragility due to age or the possibility of a late diagnosis. However, establishing a program of screening for breast cancer, on a regular basis, enabling the establishment of an early diagnosis and ensure an effective treatment, in quantity and quality to reach the population, is still a challenge for developing countries like Brazil[2, 3].

CONCLUSION

In the period from 2008 to 2017

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in the Macroregion north of Minas Gerais there were a greater number of hospitalizations due to breast malignant neoplasm in women, brown, ranging in age from 50 to 59 years. There was an increase in the number of hospitalizations in the period from 2009 to 2015, while the absolute number of deaths remained virtually constant over the years. In contrast, the mortality rate progressively increased with age and was considerably higher in males.

Thus, there is a clear need for knowledge of the epidemiological profile of hospitalizations and deaths due to malignant breast neoplasm among patients from the northern region of Minas Gerais, in order to strengthen the implementation of public policies geared to the prevention of this neoplasm considering the sociodemographic and clinical aspects, thereby reducing the morbidity and mortality of the disease among the regions of the studied health macroregion.

This a non-sponsored study. There is no conflict of interests.

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