ANALYSIS OF MORTALITY FROM BREAST CANCER IN THE STATE OF MINAS GERAIS: AN ANALYSIS OF THE HOSPITAL INFORMATION SYSTEM OF THE UNIFIED HEALTH SYSTEM IN THE PERIOD FROM 2008 TO 2016

Análise de internações e mortalidade por neoplasia de mama em Minas Gerais: análise de dados do sistema de informações hospitalares do sistema único de saúde no período de 2008 a 2016

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Abstract: Objective: To analyze the information of the Hospital Information System of the Unified Health System about the number of hospitalizations and deaths for breast cancer in women in Minas Gerais, in the period from 2008 to 2016, regarding epidemiological variables (age, color, and character of service and number of hospitalizations). Methods: retrospective study, research, cross, descriptive and quantitative character. The universe of research data of the Hospital Information System of the Unified Health System concerning the rate of hospitalizations for breast cancer in Minas Gerais, in the period from January 2008 to December 2016. Results: during this period were 52,180 hospitalizations were registered having an increase in the period studied. As for the character of care, it was found prevalence of elective care (50.6%). The predominance of the private service scheme (85.6%), with the largest number of deaths in the age group from 50 to 59 years. As for the color/race, 43.8% declared themselves mixed race. Conclusion: in Minas Gerais, the number of hospitalizations and deaths for breast cancer has increased significantly each year, being more common in the age group from 40 to 59 years, with worse prognosis after 80 years, being the largest private sector body responsible for hospitalizations and expenditures of these patients, and they occur predominantly in the central region of the State.

Keywords: Breast cancer; Epidemiological profile; Morbidity and mortality; Public health.
Resumo: Objetivo: analisar as informações do Sistema de Informações Hospitalares do Sistema Único de Saúde sobre o número de internações e óbitos por neoplasia de mama em mulheres em Minas Gerais, no período de 2008 a 2016, referentes às variáveis epidemiológicas (idade, cor, regime e caráter de atendimento e número de internações). Metodologia: estudo de investigação, retrospectivo, transversal, de caráter descritivo e quantitativo. O universo da pesquisa são os dados do Sistema de Informações Hospitalares do Sistema Único de Saúde referente à taxa de internações e o número de óbitos por câncer de mama em Minas Gerais, no período de janeiro de 2008 a dezembro de 2016. Resultados: Registraram-se nesse período 52.180 casos de internações com aumento crescente no período estudado. Quanto ao caráter de atendimento, verificou-se prevalência de atendimentos eletivos (50,6%). O predomínio do regime de atendimento foi o privado (85,6%), com maior número de óbitos no grupo etário de 50 a 59 anos. Quanto à cor/raça autorreferida, 43,8% declararam-se pardas. Conclusão: em Minas Gerais, o número de internações e óbitos por câncer de mama tem aumentado expressivamente a cada ano, sendo mais frequente na faixa etária dos 40 aos 59 anos, com pior prognóstico após os 80 anos, sendo o setor privado o maior órgão responsável pelas internações e gastos desses pacientes, e estas ocorrem predominantemente na região central do Estado.

Palavras-chave: Câncer de mama; Perfil epidemiológico; Morbimortalidade; Saúde pública.
INTRODUCTION

The breast cancer presents high prevalence and mortality throughout the world, representing a serious public health problem. Regarding the incidence, the National Institute of Cancer (INCA), estimated 57,120 new cases of this neoplasm to the year 2014.1

According to the Ministry of Health, it is the neoplasm that kills the most and affects the female population. It remains as the second type of cancer most often in the world and the first among women. In Brazil, due to the difficult access to early diagnosis, the mortality due to breast cancer remains high and growing, since the detection of the disease is performed in an advanced stage.2

In addition to age, previous history or family history of breast cancer or ovarian cancer, biopsies of the breast and the presence of mutation in the genes and several other risk factors have been raised. However, there are specific practical measures of primary prevention of breast cancer for the population.3 Observational studies have suggested that the prevention of smoking, alcoholism, obesity, sedentary lifestyle and encouragement to breastfeeding reduces the risk of breast cancer.1

It is assumed that the increase in incidence is due to a greater improvement in the diagnosis of cancer, and changes in the reproductive history and lifestyle of women around the world.4 It is noticed that risk factors such as the aging of the population, the anticipation of menarche, reduction in the number of pregnancies and in the duration of breastfeeding, use of contraceptives and hormone replacement therapy, increased sedentary lifestyle and obesity, changing eating habits and increased alcohol consumption by women.1,5

In women with an ever smaller number of children and at later time n life, it is noted that a term pregnancy decreases by 25% the risk of breast cancer, and multiparous women have half the risk of nulliparous women. Also, patients who got pregnant before 20 years of age is 35% less risk than the patients who gave birth after 35 years.5 In addition, it is justified to analyze the mortality due to breast cancer, since the knowledge can inform and strengthen actions of prevention and diagnosis.

Therefore, this paper aimed to analyze the information of the Hospital Information System of the Unified Health System (SIH/SUS) about the number of hospitalizations and deaths for breast cancer in women in Minas Gerais, in the period from 2008 to 2016, regarding epidemiological variables (age, color, and character of service and number of hospitalizations).

METHODOLOGIES

This is a retrospective, cross-sectional, descriptive, quantitative-like study. It had as universe research data from the Hospital Information System of the Unified Health System (SIH/SUS) Regarding hospitalizations due to malignant neoplasm of breast cancer in women from Minas Gerais, in the period from January 2008 to December 2016, accessed via the electronic portal http://tabnet.datasus.gov.br/, between the months of January and March of 2017. The variables evaluated were: number of hospitalizations, age, color/race; deaths, expenses, mortality rate, scheme and character of the attendances. Excel software 12.0 (Office 2007) was used for management and analysis of data. 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.

RESULTS

The analysis of SIH/SUS, in the period from January 2008 to December 2016, in Minas Gerais state-MG, allowed us to identify the occurrence of 52,180 cases of hospitalizations for malignant neoplasm of breast cancer in women. There was an increasing and significant number of cases between the evaluated period (2008 to 2016) ranging from 4,139 to 7,789 which is equivalent to an increase of 88.18% (Figure 1).

Figure 1 - Number of hospitalizations due to the breast malignant neoplasia in women from Minas Gerais, 2008 to 2016.

Analyzing the demographic data, it was found a predominance of admissions aged 50 to 59 years 14,435 (27.6%) and 40 to 49 years 12,743 (24.4%). As to the self-reported color/race, 22,853 (43.8%) claimed to be of color/race brown and 17,630 (33.78%) white.

As regards the character of care, whether elective or urgent, it was found prevalence of visits 26,416 elective cases (50.6%). The urgency services added 25,764 cases (49.3%). As for the service regime -private or public, 85.6% occurred in private institutions 44,680 and only 14.3% of the total, being 7,500 cases in public institutions. The other results are exhibited in table 1.

Table 1 - Sociodemographic and clinical data of hospitalized patients due to breast malignant neoplasia, Minas Gerais, 2008 a 2016.

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Age range</td>
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<tr>
<td>0 to 9</td>
<td>10</td>
<td>0.02</td>
</tr>
<tr>
<td>10 to 19</td>
<td>406</td>
<td>0.78</td>
</tr>
<tr>
<td>20 to 29</td>
<td>1288</td>
<td>2.47</td>
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</table>
In the representation of hospitalizations for breast malignant neoplasm by macroregion of Minas Gerais, there was a predominance in central macro-region of the state with 20,882 hospitalizations (40%), and due to this, leads us to the idea that this region holds the reference centers in oncology. The southeast region appears in second place with 11,832 (22.6%). The other regions had lower rates, possibly because they are represented by smaller municipalities. The mortality rate of the disease is greater in the macroregions with a smaller number of cases of hospitalizations, as Jequitinhonha (50) and Mid-Southern (12) (Figure 2).

Figure 2 - Number of Hospitalizations and mortality rate due to malignant neoplasm of breast cancer according to the macroregions of Minas Gerais, 2008 to 2016.
Regarding the notifications of deaths of patients with this neoplasm, 52,180 cases of hospitalization, 3,827 died which represents 7.3%, cases, with an average of 425 in the period assessed (Figure 3).

The rate of average mortality of this disease was 7.36% cases for each thousand hospitalizations, ranging from 6.58% to 8.38% (Figure 3).

Comparing the number of deaths with the mortality rate per year, it was found that the number was greater in the year 2016 and 2015 (n = 575/15.02%; n = 481/12.56%) respectively, however, the highest mortality rate occurred in the year of 2011 (8.38%) and 2012 (7.95%) (Figure 3).

According to age range, it becomes clear that the number of deaths is higher in groups from 50 to 59 years (n = 1077/28.14%) and 60 to 69 (n = 801/20.9%), however, the mortality rate is more expressive in the age of 19 years (14.29%), and in those over 80 years (12.66%) (Figure 4).

According to the expenses relating to hospitalizations due to breast malignant neoplasm, it is noticed a total expenditure of R$ 77,838,004.7, being 87.6% of the the same invested in private institutions, which corresponds to R$ 68,213,768.56, which is the reflection of the greater number of admissions in these institutions.

As to the average length of stay of patients according to the service regime, it was found that this is higher in public regime (4.3 days), in relation to the private regime (3.6 days). However, the average spending is higher in the private system (R$ 1,526,72), in relation to the public (R$ 1,283.23).
DISCUSSION

In the period from January 2008 to December 2016 there were 52,180 cases of hospitalizations for breast malignant neoplasia in women in the state of Minas Gerais. There was an increasing and significant number of cases between the evaluated period (2008 to 2016) ranging from 4,139 to 7,789 which is equivalent to an increase of 88.1%.

The most affected age group was between 50 to 59 years (27.6%) similar to the result found in a study carried out at a university hospital. In this study, the number of deaths was higher in groups from 50 to 59 years, a result similar to another study evaluating mortality from breast cancer in a medium-sized city.

As the mortality rate, this was more expressive in the age lower than 19 years (14.2), and in those over 80 years (12.6). Brazil is a country of great geographical variations, with different rates of mortality from breast cancer in each region, with higher prevalence in the Southeast region (64.7%).

Women are the most affected by this neoplasm, and the brown race is in the first place, unlike other studies that showed an increased frequency in white women. The largest number of white women with breast cancer can be associated to the fact that 50% of the population over 20 years of age is composed of white women. Brazil is a country of great demographic area and with racial diversity that can justify the differences in clinical outcomes associated with breast cancer and it may influence morbidity demonstrating the relevance to research this variable.

In this study, the number of deaths was higher in groups from 50 to 59 years, a result similar to another study evaluating mortality from breast cancer in a medium-sized city.
According to hospitalization regime, in this research, it was realized that the private system had a greater predilection, probably due to the greater access to forms of diagnosis and treatment. Research conducted in São Paulo revealed that the treatment in private institutions, the start time of the adjuvant chemotherapy and radiotherapy were lower when compared to the public.14

The expenses related to the admissions for this neoplasm in this study was high, being 87.64% of this invested in private institutions, reflecting the increased number of admissions in these institutions. The assistance in the area of Oncology is among the most expensive in the medical area, as a result of high value of diagnostic tests and anticancer drugs.15,16

CONCLUSION

With this study it is concluded that the number of hospitalizations and deaths due to malignant breast neoplasia has increased substantially each year in the state of Minas Gerais, being more common in the age ranges from 40 to 59 years. However, the mortality rate is higher after 80 years due to a worse prognosis, as determined by the secondary complications in this age group. The private sector is the largest organ responsible for hospitalizations and costs of these patients, and these occur predominantly in the central region of the state of Minas Gerais.

Thus, it is clear the need of knowledge of the profile of hospitalizations and deaths by breast malignant neoplasia among women from Minas Gerais, in order to strengthen the implementation of public policies aimed at the prevention of this neoplasia considering aspects of demographic, epidemiological, racial and cultural distribution, thereby reducing the morbidity and mortality due to the disease in the state.

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