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List of the costs of diagnosis and oncological treatment in the elderly patient

ABSTRACT | Objective: to investigate the cost of diagnosing and treating cancer in the elderly of an Oncology Center in Minas Gerais. Method: Data were collected through a secondary source of the Hospital Cancer Registry, from a Philanthropic Hospital in the Interior of Minas Gerais, between 2009 and 2016, with a sample of 3,666 elderly people undergoing cancer treatment. The results were analyzed using simple descriptive statistics. All ethical aspects were safeguarded. Results: Among the main sources of diagnosis of neoplasms, the histology of the tumor stands out, corresponding to 85.50%. As for the cost of diagnosis and treatment, 25.09% and 86.05% of cases, respectively, were covered by the Unified Health System. Conclusion: it is important to note that early diagnosis and treatment increase the chances of cure and that Unified Health System covers most costs, making appropriate interventions for these patients possible.
Keywords: Neoplasms; Aged; Costs; Diagnosis; Therapy.

RESUMEN | Objetivo: investigar el costo del diagnóstico y tratamiento del cáncer en ancianos de un Centro de Oncología en Minas Gerais. Método: Los datos se recolectaron a través de una fuente secundaria del Registro Hospitalario de Cáncer, de un Hospital Filantrópico del Interior de Minas Gerais, entre 2009 y 2016, con una muestra de 3,666 ancianos en tratamiento oncológico. Los resultados se analizaron mediante estadística descriptiva simple. Se salvaguardaron todos los aspectos éticos. Resultados: Entre las principales fuentes de diagnóstico de neoplasias destaca la histología del tumor, correspondiente al 85,50%. En cuanto al costo del diagnóstico y tratamiento, el 25,09% y el 86,05% de los casos, respectivamente, fueron cubiertos por el Sistema Único de Salud. Conclusión: es importante señalar que el diagnóstico y el tratamiento precoces aumentan las posibilidades de curación y que Unified Health System cubre la mayoría de los costos, haciendo posibles las intervenciones adecuadas para estos pacientes.
Palabras claves: Neoplasias; Ancioano; Costes; diagnóstico; Terapia.

RESUMO | Objetivo: investigar o custeio do diagnóstico e tratamento de câncer em idosos de um Centro Oncológico de Minas Gerais. Método: Os dados foram coletados através de fonte secundária do Registro Hospitalar do Câncer, de um Hospital Filantrópico do Interior de Minas Gerais, entre o ano de 2009 a 2016, com uma amostra de 3.666 idosos em tratamento oncológico. A análise dos resultados foi feita por meio de estatística descritiva simples. Todos os aspectos éticos foram resguardados. Resultados: Entre as principais fontes de diagnóstico das neoplasias destaca-se a histologia do tumor, correspondendo a 85,50%. Quanto ao custeio do diagnóstico e tratamento, em 25,09% e 86,05% dos casos, respectivamente, foram custeados pelo Sistema Único de Saúde. Conclusão: é importante ressaltar que o diagnóstico e tratamento precoce aumentam as chances de cura e que o Sistema Único de Saúde cobre a maioria dos custos, tornando possíveis as intervenções apropriadas para estes pacientes.
Palavras-chaves: Câncer; Idoso; Custos; Diagnóstico; Tratamento.

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INTRODUÇÃO

Taking into account the significant increase in the elderly population, especially in developing countries, and the consequent changes in the disease profile, with predominance of chronic-degenerative diseases. [1] These diseases have been considered a public health problem, corresponding to 80% of deaths and elderly people in low and middle income countries. [2]

Among them, we can mention cardiovascular, chronic respiratory diseases and neoplasms, the latter being responsible for one of the main causes of mortality worldwide, especially in the elderly population. [2]

According to the World Health Or-

ganization (WHO), an elderly person is considered to be 60 years old or older for developing countries like Brazil, and 65 years old in developed countries. [3]

The aging of the population, as well as the change in the profile of diseases, increases the incidence of malignant neoplasms. It is estimated that by the year 2030 there will be 26 million new cancer cases diagnosed and this disease will occur mostly in the elderly, a population with a higher risk of mortality due to their vulnerabilities. [4] Due to the growth of the population and its health conditions, there was a motivation for the development of studies for the better quality of life of this population. [5]

Neoplasms are growing more and more in the elderly, and diagnosis is a major challenge, as is the type of treatment. The aging of the population reflects a lot when diagnosing cancer and requires different health care professionals. The increase in this type of disease caused an increase in hospitalization of these elderly people, thus generating an increase in costs. [6]

The treatment of elderly patients with cancer must be performed in a qualified manner, requiring trained professionals to plan the treatment. The costs with these elderly people are high, since the majority do not only have cancer as a pathology, they may have more than one underlying disease, so the planning must be cautious, considering the risk and benefit of the treatment. [4]

Emphasizing that the costs generated with the care of elderly patients with cancer generate finite expenses to meet the needs of this population, from the diagnosis that is often late, the maintenance of the treatment until the cure or terminal phase, as well as the investment in integrated care, when there is no possibility of cure. [7]

In Brazil, the diagnosis and treatment of cancer are covered by the Unified Health System (SUS), encompassing around 75%, and by health plans, 25%. According to the Ministry of Health (MS), the cost of treatment is much more extensive, due to the lack of early diagnosis of these neoplasms. Most costs are related to chemotherapy, followed by surgery and radiation. Immunotherapies and target therapies still have high values and are not used in all countries, precisely because of their high cost. [8]

Unfortunately, most diagnoses are late, estimating that 60% of the cases are already in stage three and four, which generates an increase not only with treatment, but also hospitalization of these elderly people. In these stages, the costs are approximately 60% to 80% higher than stages one and two, emphasizing the importance in the prevention of neoplasms. [9] In this context, the aim of this study was to investigate the cost of diagnosing and treating cancer in elderly patients at an Oncology Center in Southern Minas Gerais.

METHOD

This is a descriptive, exploratory study with a quantitative approach. The research was carried out in a Philanthropic Hospital in the Interior of the State of Minas Gerais, using secondary data from the Hospital Cancer Registry (RHC), which is an information storage system with a registry of patients with a closed diagnosis of cancer, providing data of all patients served by health services, helping to improve the care provided. [10]

The sample consisted of elderly cancer patients registered at the RHC in the period from 2009 to 2016, corresponding to 3.666 registered. The survey was carried out in the year 2018. 2017 data were not added to the study, as they were not available in the system so far. The results were analyzed using simple descriptive statistics. The data obtained were presented using tables and graphs using the Excel program.

The research was sent to the head of the Oncological Center and subsequently authorized. Then the study was submitted to the Ethics and Research Committee of the Educational Institution, according to the opinion 2.615.112 and CAAE number 84183618.1.0000.8158. It is justified that, according to the opinion of the ethics committee, this study is part of a larger project with the title "Characterization of the elderly population with cancer treated at an Oncology Unit in the South of Minas Gerais".

RESULTS

The results of the present study indi-

Table 1. Characterization of the main bases for the diagnosis of cancer in the elderly through the RHC of a philanthropic hospital in the interior of Minas Gerais, from 2009 to 2016.

Bases para diagnóstico	N	%
Clínica	231	6,50%
Pesquisa clínica	36	1,00%
Exames por imagem	58	1,50%
Marcadores tumorais	16	0,50%
Citologia clínica	174	4,74%
Histologia metástase	06	0,16%
Histologia Tumor primário	3141	85,50%
Sem informação	05	0,10%
Total	3666	100%

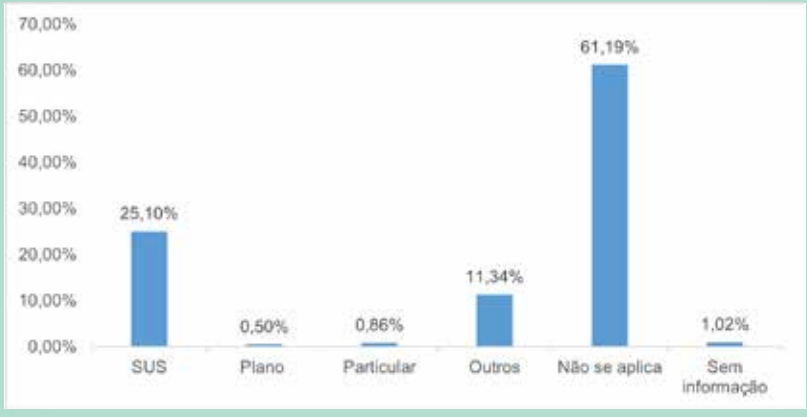
Source: Hospital Cancer Registry, 2018.

cated the characterization of the main bases for cancer diagnosis, with a greater prevalence of primary tumor histology with 85,50%, as shown in Table 1.

As for the cost of the diagnosis made, Graph 1 shows that in more than half of the cases the variable does not apply, 61,19%, followed by diagnoses paid for by the Unified Health System, 25,10%. It is important to note that in RHC it does not specify or describe what the variables would be without information or others.

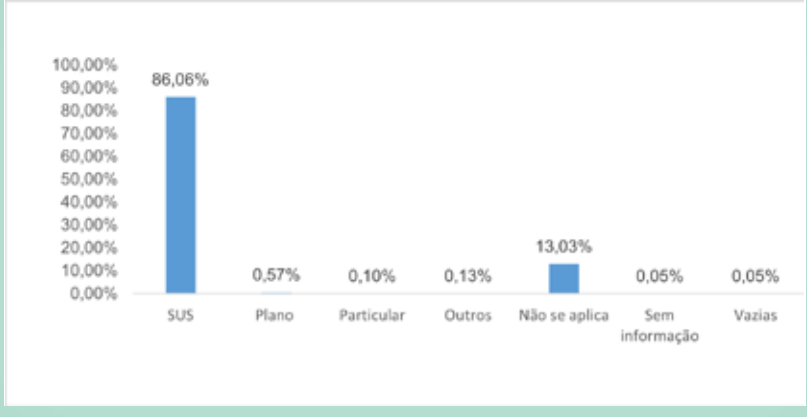
Regarding the cost of treatment performed, in 86,06% of the cases were performed by SUS, followed by the variable not applicable, 13,03%. Graph 2 shows this distribution.

Graph 1. Distribution of the cost of diagnosing the tumor by operators and by the Unified Health System through the RHC of a philanthropic hospital in the interior of Minas Gerais, from 2009 to 2016.



Source: Hospital Cancer Registry, 2018.

Graph 2. Distribution of the cost of tumor treatment by operators and by the Unified Health System through the RHC of a Philanthropic Hospital in the Interior of Minas Gerais, from 2009 to 2016.



Source: Hospital Cancer Registry, 2018.

DISCUSSION

In recent years, Brazil has made efforts to expand cancer care for the population, considerably increasing the number of cancer procedures performed in the country and the number of SUS health institutions dedicated to cancer care. The increase in health facilities over the past 15 years has expanded by approximately 71.3%. This growth was not homogeneous in all regions, varying from 333% to 50%, in the northern and central-western regions, respectively. [11]

SUS regulations, through the 2005 National Oncological Care Policy (Política Nacional de Atenção Oncológica - PNAO), establish comprehensive care for people with cancer, which includes actions ranging from promotion and prevention to diagnosis, treatment, rehabilitation and palliative care. [12-13] Early diagnosis is still the best strategy for planning actions and treating cancer patients. According to the HM [14], for each type of tumor there is a specific exam, with emphasis on the clinical exam, by image and the histology of the tumor.

Corroborating the findings of this study, a survey conducted [15] demonstrated that the histology of the primary tumor is the main basis for cancer diagnosis, which can also help in the planning of therapy.

As for the financing of cancer diagnosis, in this research more than half was related to the variable not applicable, followed by SUS. It is important to note that in RHC it does not specify the meaning of this variable. A study found in the literature reported that the greatest difficulty in financing is to guarantee the universality and comprehensiveness of elderly patients with cancer, mainly due to the social and regional inequalities that exist in Brazil. [9]

In the present study, more than half of the treatments performed on cancer patients are funded by SUS. These results corroborate with other research found in the literature, which demonstrated that the treatments are funded by SUS from medications to hospitalization. [7]

Cancer treatment is considered costly due to the numerous types and

protocols established for each type of neoplasm, as well as expenses with chemotherapy, surgery, hormone therapy, immunotherapies and integrated care for these patients. Institutions must be registered and the transfer happens through service cycles [16], health managers are responsible for administering the funds received. [17] It's emphasized that the RHC does not mention the types of treatments, only the first treatment performed in these elderly people.

In this context, the literature suggests that the costs of treating cancer patients are higher in the first year after diagnosis and in the final stage of the disease, due to this greater number of hospitalizations in the terminal phase. (18) After a year of diagnosis, costs tend to stabilize, decreasing significantly with the stage and extent of the neoplasia, and health services must be prepared to meet the initial demands of these patients. [7]

CONCLUSION

The costs of diagnosing and treating cancer are still considered to be expensive, as it uses several instruments and protocols to perform it in the best possible way. This study made it possible to identify the main bases of cancer diagnosis and its costs. It is important to note that SUS finances both the diagnosis and treatment of elderly patients with cancer at any stage of the disease.

It is important to note that early diagnosis is the best form of cure and that, if necessary, greater investments in prevention programs and actions to fight cancer, thus favoring treatment success and better quality of life for this population. It is hoped that this study can contribute to the advancement and registration of knowledge in this area of great social relevance, with a specific focus on costs, thus constituting a reference for other studies and further studies.

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