EPIDEMIOLOGICAL PROFILE OF CANCER CASES IN THE AGRESTE REGION OF PERNAMBUCO REGISTERED AT THE HOSPITAL DAS CLÍNICAS

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ABSTRACT
Cancer is the disordered proliferation of infiltrating cells, forming aggressive tumors. Factors such as obesity, poor diet, sedentary lifestyle, HPV, smoking, and radiation contribute to the development of the disease. Objective: To investigate and describe the epidemiological profile of cancer cases in the Agreste region of Pernambuco, in addition to analyzing the incidence of cancer in the region, identifying the most frequent types of cancer, and evaluating the distribution by age group and gender. Method: This is a cross-sectional and descriptive epidemiological study of a quantitative nature. Results: There was a higher number of cases of cancer located in the genital system, in brown and elderly patients. Final considerations: The analysis of the epidemiological profile of cancer in the Agreste region of Pernambuco reveals the complexity of the factors that influence its incidence. The data highlight the need for targeted preventive, diagnostic, and therapeutic strategies, filling gaps in regional knowledge and informing more effective health policies.

Keywords: Epidemiological profile. Epidemiology. Hospital records.

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INTRODUCTION

The disordered proliferation of cells, capable of infiltrating adjacent tissues or organs, characterizes the more than 100 diseases collectively known as "cancer", as described by the National Cancer Institute (INCA, 2024). These cells grow rapidly, with aggressive and uncontrollable behavior, resulting in the formation of tumors that can spread throughout the human body (INCA, 2024).

According to the Pan American Health Organization (PAHO), several primary risk factors are associated with the development of cancer, including being overweight or obese, a diet low in fruits and vegetables, sedentary lifestyle, excessive alcohol consumption, HPV infection, hepatitis, and other infections (PAHO, 2024). In addition, exposure to carcinogens, both ionizing and non-ionizing radiation, urban air pollution, smoke from domestic use of solid fuels, and smoking stand out, responsible for 22% of global deaths (PAHO, 2024).

Cancer is one of the leading causes of death on a global scale. In 2020, approximately 19.3 million new cases of cancer were registered worldwide. Among the factors that contribute to the development of the disease are lack of physical activity, obesity, alcohol consumption, hormonal imbalances, aging, family history of cancer, and the early onset of menstruation, among others (AHMAD, et al., 2024).

This article emerges from the need to deepen the knowledge about the epidemiological profile of cancer cases in the Agreste region of Pernambuco, using the records of the Hospital das Clínicas as the primary source. The collection and analysis of these data will allow for obtaining relevant information on the incidence, prevalence, most frequent types of cancer, and most affected age groups, among other crucial aspects for understanding the dynamics of the disease in the region.

In addition, epidemiological investigation is an essential tool to support public health policies and improve prevention, diagnosis, and treatment strategies (AHMAD, et al., 2024). By understanding the local scenario in more detail, it becomes possible to direct resources more effectively, promoting early detection, and access to appropriate treatments and, consequently, contributing to the reduction of the impact of cancer on the population of the Agreste region of Pernambuco.

Thus, this study not only fills a gap in regional epidemiological knowledge but also provides fundamental subsidies for the formulation of more assertive health policies, aiming to improve the quality of life of the population and efficiently face the challenge represented by cancer in the context of the Agreste region of Pernambuco.

Thus, the objectives of this study are: to investigate and describe the epidemiological profile of cancer cases in the Agreste region of Pernambuco, in addition to analyzing the incidence of cancer in the region, identifying the most frequent types of cancer and evaluating the distribution by age group and gender.

METHOD

This is a cross-sectional and descriptive epidemiological study of quantitative character and will take place through cancer cases that were notified by the Hospital das Clínicas of the Federal University of Pernambuco HC/UFPE.

Quantitative research is a type of investigation that seeks to measure events accurately, following a plan previously established and defined by the study, using hypotheses and variables (PROETTI, 2018). In turn, descriptive studies have as their main focus the determination of the distribution of health conditions, which can be analyzed based on the place, time, and characteristics of individuals (LIMA-COSTA, 2003).

The data used were obtained through the Hospital Cancer Registry Sector of HC/UFPE, with a survey of information referring to the years 2016 to 2019, which was provided by the SISRHC database of HC/UFPE. The Hospital Cancer Registry (RHC) is the hospital service responsible for collecting and recording confirmed cases of malignant neoplasm. It is a systematic source of information, to collect data on the diagnosis, treatment, and evolution of cases of malignant neoplasm treated at the hospital.

The study area was composed of the municipalities of the Agreste region of Pernambuco in which the registered cancer cases are distributed. The agreste of Pernambuco is divided into Agreste Central (Agrestina, Alagoinha, Altinho, Barra de Guabiraba, Belo Jardim, Bezerros, Bonito, Brejo da Madre de Deus, Cachoeirinha, Camocim de São Félix, Caruaru, Cupira, Gravatá, Ibirajuba, Jataúba, Lagoa dos Gatos, Panelas, Pesqueira, Poção, Pombos, Riacho das Almas, Sairé, Sanharó, São Bento do Una, São Caitano, São Joaquim do Monte, Tacaimbó), Southern Agreste (Águas Belas, Angelim, Bom Conselho, Brejão, Buíque, Caetés, Calçado, Canhotinho, Capoeiras, Correntes, Garanhuns, Iati, Itaíba, Jucati, Jupi, Jurema, Lagoa do Ouro, Lajedo, Palmeirina, Paranatama, Pedra, Saloá, São João, Terezinha, Tupanatinga, Venturosa.), and Northern Agreste (Bom Jardim, Casinhas, Cumaru, Feira Nova, Frei Miguelinho, João Alfredo, Limoeiro, Machados, Orobó, Passira, Salgadinho, Santa Cruz do Capibaribe, Santa Maria do Cambucá, São Vicente Férrer, Surubim, Taquaritinga do Norte, Toritama, Vertente do Lério, Vertentes) (IBGE, 2024; IBGE, 2000).

The study population was composed of patients treated at the oncology outpatient clinic of the Hospital das Clínicas of the Federal University of Pernambuco (HC/UFPE) from 2016 to 2019 and registered in the Hospital Cancer Registry (RHC).

All cancer patients from the Agreste region of Pernambuco, registered at Hospital das Clínicas between the years 2016 and 2019, will be included. Patients who do not have the name of the municipality of origin registered, as well as municipalities that do not have cases of cancer during the study period, will be excluded.

This study followed the guidelines and criteria established by Resolution 466/12. The data were collected at the Hospital Cancer Registry Sector (RHC) of the HC and stored in specific files, under the responsibility of Dr. Viviane de Araújo Gouveia, at the Federal University of Pernambuco, at the Academic Center of Vitória, and can be kept on her personal computer for a minimum period of 5 years. Data collection began after approval by the Research Ethics Committee (CEP), with opinion number 6,280,044, approved on September 4, 2023.

The data were statistically analyzed and presented in the form of tables and graphs, containing the frequency of the variables in numbers and percentages, where the Microsoft Office Excel 2019 software and Google Spreadsheets will be used.

RESULTS

In the database of the Hospital Cancer Registry of a university hospital in the year 2016 to 2019, the total data collected was 4,910 patients, of which only 773 patients met the inclusion criteria of this research, of which the age group that presented the highest percentages was people aged 61 to 70 years with 23.54% (n=182) (Table 1).

Table 1. Sociodemographic data on cancer cases in the Agreste region of Pernambuco between 2016 and 2019.

Variables	N	%
Age group		
0 – 20	17	2,20%
21 – 30	41	5,30%
31 – 40	93	12,03%
41 – 50	114	14,75%
51 – 60	150	19,40%
61 - 70	182	23,54%
Over 70 years old	175	22,64%
No information	1	0,13%
Race/skin color		
White	240	31,04%
Black	28	3,62%
Yellow	1	0,13%
Brown	444	57,44%
Indigenous	2	0,26%
No information	58	7,51%

Schooling		
No	177	22,90%
Incomplete elementary school	291	37,65%
Complete Elementary School	90	11,65%
Medium level	96	12,42%
Incomplete higher education	5	0,65%
Complete higher education	38	4,91%
No information	76	9,83%
Marital status		
Single	197	25,49%
Married	364	47,09%
Widower	85	10,99%
Legally separated	35	4,53%
Consensual union	57	7,37%
No information	35	4,53%
Occupation		
Farmer	249	32,21%
Traders	21	2,72%
Drivers	18	2,33%
Teachers	20	2,59%
Other Occupations*	151	19,53%
Not applicable	57	7,37%
No information	257	33,25%

Source: Authorship.

Note: *Lawyers, secretaries, administration agents, seamstresses, attendants, accounting and/or office assistants, military firefighters, hairdressers, collectors, cooks, dispatchers, plumbers, pharmacists, nurses, philologists, civil servants, managers, carpenters, mechanics, machine operators, bricklayers, painters, military police, sales supervisors, nursing technicians, civil works technicians, construction workers, workers weaving preparation, service workers, administrative service workers, accounting conservation, protection, metallurgical workers, street vendors, wholesale trade vendors.

Regarding the distribution by race/skin color, the one with the highest percentage was Brown with 57.44% (n=444). In terms of education, it was Incomplete Elementary School with 37.65% (n=291), followed by patients without any literacy with 22.90% (n=177), and those with high school education with 12.42% (n=96). Only 5 patients have incomplete higher education.

Regarding marital status, 47.09% (n=364) of the patients are married, 25.49% (n=197) are single, 10.99% (n=85) are widowed, 7.37 (n=57) are in a stable union, and those who are legally separated and do not have information about marital status have the same number of 4.53% (n=35).

The occupation was classified into 138 categories, with the highest number being without information at 33.2% (n=257), followed by Farmer at 32.21% (n=249), and Traders at 2.72% (n=21).

Regarding the clinical profile of cancer patients registered in the Hospital Cancer Registry sector of the Hospital das Clínicas, 4 variables were categorized (Table 2). Among the 773 patients, 31.82% (n=246) stated that they had never consumed alcohol, 14.49% (n=112) were consumers, 10.74% (n=83) were former consumers, and the others were not evaluated, did not answer or this question does not apply to them.

Table 2. Clinical profile of cancer patients between 2016 and 2019.

Variables	N	%
History of alcohol consumption		
Never	246	31,82%
Former consumer	83	10,74%
Yes	112	14,49%
Not rated	88	11,38%
Not applicable	7	0,91%
No information	237	30,66%
History of tobacco consumption		
Never	275	35,58%
Former consumer	137	17,72%
Yes	92	11,90%
Not rated	76	9,83%
Not applicable	8	1,04%
No information	185	23,93%
Family history of cancer		
Yes	192	24,84%
No	156	20,18%
No information	425	54,98%
Diagnosis and previous treatments		
No diagnosis/No treatment	496	64,16%
No diagnosis/With treatment	148	19,15%
With diagnosis/With treatment	125	16,17%
No information	4	0,52%

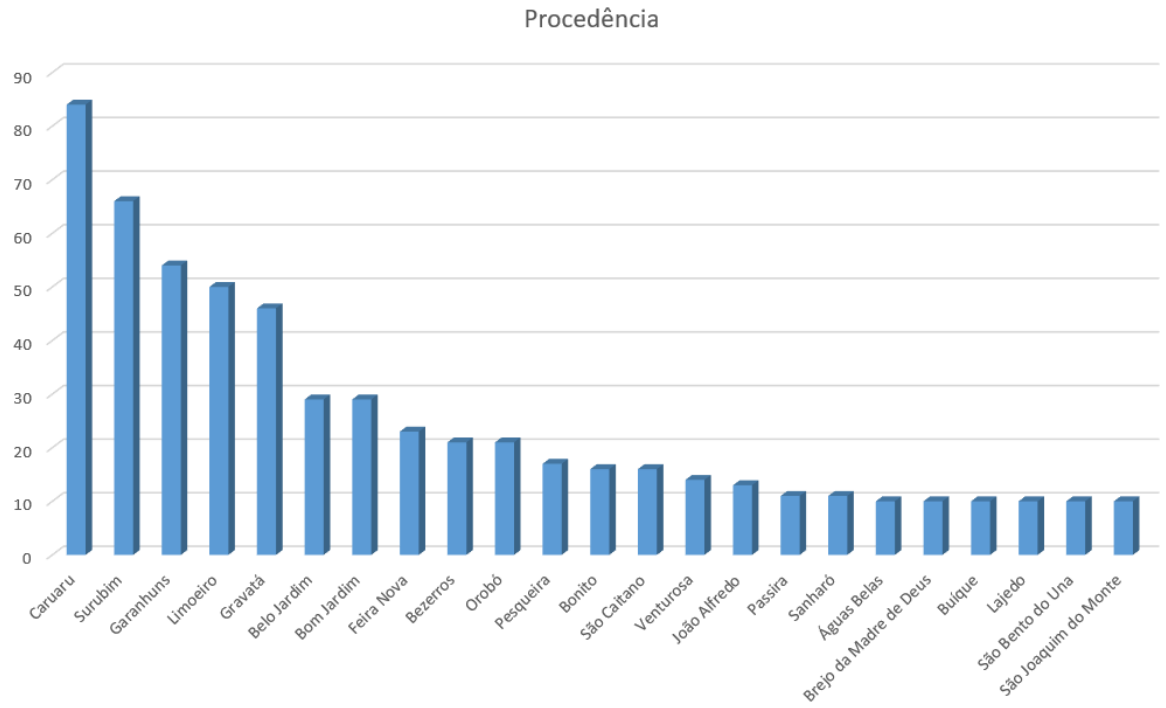
Source: Authorship.

Regarding the history of tobacco consumption, 35.58% (n=275) stated that they had never consumed, 23.93% (n=185) did not answer, 17.72% (n=137) were former consumers, 11.90% (n=92) were consumers, and others were not evaluated or this item does not apply to them. Regarding family history with cancer, 54.98% (n= 425) do not have information about it, 24.84% (n=192) do have family members with a history of cancer and 20.18% (n=156) do not have family members with a history of cancer.

Table 2 also shows that the results of previous diagnoses and treatments showed that 64.16% (n= 496) of the patients had no previous diagnosis and treatment, 19.15% (n=148) had no previous diagnosis but were undergoing treatment, and only 16.17% (n=125) had previous diagnosis and treatment. 4 patients had no information on this item.

Among the data about the origin, Caruaru was the outstanding municipality with 84 cases, followed by Surubim with 66 cases, Garanhuns with 54 cases, Limoeiro with 50 cases, and Gravatá with an incidence of 46 cases in the years 2016 to 2019. (Graph 1)

Graph 1: Origin of cancer patients registered at Hospital das Clínicas between 2016 and 2019.



Source: Authorship.

It was observed that, in the total number of patients, the location of the primary tumor was more prevalent in the region of the genital system with 29.88% of the cases, followed by the integumentary system with 23.93% and the digestive system with 16.9% (Table 3).

Table 3. Location of the primary tumor

Systems	N	%
Genital System	231	29,88%
Integumentary System	185	23,93%
Digestive system	131	16,95%
Endocrine system	91	11,77%
Urinary System	47	6,08%
Sensory System	33	4,27%
Circulatory system	24	3,10%
Respiratory system	22	2,85%
No identification	5	0,65%
Abdomen	2	0,26%
Thorax	2	0,26%

Source: Authorship.

DISCUSSION

In Brazil, there has been a reduction in mortality rates related to occupational factors in the context of laryngeal cancer. However, the rates associated with tobacco and alcohol remain higher than those linked to occupational risks (VIANA et al., 2024). Before we understood the carcinogenic effects of smoking, the main origins of cancer were related to specific occupations (AHMAD et al., 2024). However, there was a considerable lack of

information available to identify the chemicals responsible for these risks. The number of carcinogens identified may be lower than the actual one, due to the lack of a complete assessment of exposures, the lack of solid epidemiological evidence, and the absence of quantitative data on exposure (VIANA et al., 2024; AHMAD et al., 2024).

Brazil ranks sixth in Latin America in terms of mortality rate from childhood cancer, registering 7.33 deaths per 100 100,000 inhabitants. This rate is higher than previous data, which can be attributed to different reference periods and the redistribution of classified deaths (VELAME, 2024). Residents of the North and Northeast regions face difficulties in obtaining access to hospitalization and surgery for cancer treatment, which results in inequality in access to health services. The lack of beds, especially in intensive care units (ICU), in these areas is associated with a higher mortality rate among children and adolescents with cancer (VELAME, 2024).

This study showed that, despite the high mortality rate among children and adolescents, the population with the highest incidence of cases is the age group between 61 and 70 years, due to the direct relationship between oncology and aging, in which there is a significant increase in the incidence of cancer with advancing age (SILVA et al., 2019).

The results showed a higher number of patients with primary tumors located in the region of the genital system, with a higher percentage of cervical cancer (n=82) and prostate cancer (n=74). In countries such as Norway, Finland, Denmark, and Sweden, which established detection systems in the 1960s, there has been a substantial drop in the incidence of this type of cancer over the years, and it is now classified as a rare condition (SILVA et al., 2023).

Although, in this study, thyroid cancer presents alarming results, with 78 of the 91 cases, the endocrine system represents only 11.77% of the research results. It is important to note that some types of cancer have a prevalence related to the patient's gender. Thyroid and breast cancers, for example, mostly affect women (COUTINHO, et al., 2021).

Among the 773 cases of cancer, 23.92% (n=185) correspond to cases of skin cancer, which is prevalent in Brazil and represents 25% of all benign tumors and 33% of malignant tumors documented in the country. Annually, approximately 180 thousand new cases of skin cancer are diagnosed, most of which are non-melanoma, which represents about 70% of cases. The most commonly affected areas include the face and other regions exposed to the sun (BRASIL, 2014; BERNARDS, 2016).

Cancers in the integumentary system have high cure rates when detected early; however, there was a high rate of cases without previous diagnosis or treatment recorded in this study, representing more than 60% of the cases (Brazil, 2014). A study also pointed to a

high rate of abandonment and non-adherence to treatment, characterizing higher mortality rates in Brazil (ABDELMABOUD, 2020).

The main reasons for low adherence to treatment include limited financial resources and economic shortage, lack of medicines in hospitals, and financial inability to purchase them externally. In addition, there is inadequate production by the pharmaceutical industry and the omission of doses, either due to patient refusal, forgetfulness, or interruption of medication by parents for fear of complications (ABDELMABOUD, 2020).

In the last three decades, there has been a significant increase in the incidence of skin cancer, driven by several factors, such as changes in lifestyles that result in excessive exposure to the sun at different times; the aging of the population (PIRES et al., 2017); in addition to personal characteristics, such as skin color (57.44% of the cases in this study are brown), light eyes and hair; the presence of freckles and nevi; personal history or family history of skin cancer; and use of chronic immunosuppression (IMANICHI, 2017).

A high number of farmers was evidenced, with 32.21% (n=249), due to high exposure to the sun during working hours. Of these, 31 patients live in the municipality of Surubim, 19 in Gravatá, 12 in Limoeiro, 12 in Ventura, 10 in Orobó, and only 9 in Caruaru, the municipality that had the highest occurrence of cancer cases in the Agreste region of Pernambuco. In 2020, of the skin cancer cases, 176,940 were diagnosed as non-melanoma, with a projection of 37,380 cases in the Northeast region and 2,290 in the state of Maranhão (LINOS et al., 2016; INCA, 2020).

Even with a current diagnosis, 54.98% (n=425) of the patients do not have information on family history, and only 24.84% (n=192) claim to have a family history of cancer. Regarding the record of alcohol and tobacco consumption history, the results are ambiguous, as some patients affirm that they have never used alcohol, although they are simultaneously tobacco consumers.

This study has important implications for health and nursing practice by emphasizing the understanding of the epidemiological profile of cancer in the Agreste region of Pernambuco as a crucial aspect. The findings provide essential data on the incidence, prevalence, and distribution of cancer in the region, empowering health professionals to better understand the dynamics of the disease and a more effective allocation of resources. In addition, the results support the development of public health policies aimed at the prevention, diagnosis, and treatment of cancer in the area, which may include awareness initiatives, screening programs, and simplified access to appropriate treatments and preventive measures. Understanding the epidemiological profile also allows the implementation of targeted strategies to improve the quality of life of patients, offering

emotional support, education on healthy habits, and facilitating access to specialized health services.

The importance of early detection and access to appropriate treatments is emphasized, aiming to reduce cancer-related morbidity and mortality, while the results of the study serve as a tool to educate and raise awareness among the population about risk factors, preventive measures, and the importance of self-care.

In addition, the study identifies specific population groups at higher risk, such as farmers and individuals with a family history of the disease, pointing to the need for specific interventions aimed at these groups. In summary, the analysis of the epidemiological profile of cancer in the Agreste region of Pernambuco provides valuable insights for health and nursing practice, allowing the implementation of measures focused on prevention, early diagnosis, and effective treatment of the disease, to improve the quality of life of the affected population.

FINAL CONSIDERATIONS

Given the analysis of the epidemiological profile of cancer cases in the Agreste region of Pernambuco, the complexity and scope of the factors that influence the incidence and distribution of the disease in the region are evident. A detailed understanding of the data presented in this study not only provides a clear picture of local cancer dynamics but also highlights the importance of targeted preventive, diagnostic, and therapeutic strategies. The results discussed in this study not only fill a gap in regional epidemiological knowledge but also provide valuable subsidies for the formulation of more assertive and effective health policies. In summary, the detailed analysis of the epidemiological profile of cancer in the Agreste region of Pernambuco represents a significant step towards efficiently facing this public health challenge, aiming to improve the quality of life of the local population and reduce the impact of the disease.

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