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The incidence of cancer at the IESS Hospital in the city of Ambato, Ecuador: a cross-sectional descriptive study

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Abstract

Cancer is one of the leading causes of death worldwide, and its incidence has been increasing in recent years. In this context, this study aims to determine cancer incidence at the IESS Hospital in Ambato, Ecuador, during 2017, through a descriptive cross-sectional approach. The study methodology consisted of reviewing the medical records of patients diagnosed with cancer in the hospital during the mentioned period. The data were statistically analyzed to determine the frequency of cancer cases and describe the affected patients' characteristics. The study results indicate that 114 cases of neoplasms were recorded during the study period, with more cases in women in a ratio of 1.5/1 for men. Breast cancer was the most common type of cancer diagnosed in the hospital. Other common types of cancer include prostate, stomach, and cervical cancer. Additionally, it was found that cancer was more frequent in patients over 60 and in female patients.

Keywords: Cancer, Dysplasia, Medical Record.

La incidencia del cáncer en el Hospital del IESS de la ciudad de Ambato, Ecuador: un estudio descriptivo transversal

Resumen

El cáncer es una de las principales causas de muerte en todo el mundo y su incidencia ha ido en aumento en los últimos años. En este contexto, el presente estudio tiene como objetivo determinar la incidencia del cáncer en el Hospital del IESS de la ciudad de Ambato, Ecuador, durante el año 2017, a través de un enfoque descriptivo transversal. La metodología del estudio consistió en la revisión de los registros médicos de pacientes diagnosticados con cáncer en el hospital durante el período mencionado. Los datos se analizaron estadísticamente para determinar la frecuencia de casos de cáncer y para describir las características de los pacientes afectados. Los resultados del estudio indican que se registraron un total de 114 casos de neoplasias durante el período de estudio, obteniéndose más en mujeres en una proporción de 1,5/1 en relación con los hombres. El cáncer de mama fue el tipo más común de cáncer diagnosticado en el hospital. Otros tipos de cáncer comunes incluyen el cáncer de próstata, el cáncer de estómago y el cáncer de cuello uterino. Además,

se encontró que el cáncer fue más frecuente en pacientes mayores de 60 años y en pacientes de sexo femenino.

Palabras clave: Cáncer, Displasia, Registro Médico.

A incidência do câncer no Hospital do IESS da cidade de Ambato, Equador: um estudo descritivo transversal

Resumo

O câncer é uma das principais causas de morte em todo o mundo e sua incidência tem aumentado nos últimos anos. Neste contexto, o presente estudo tem como objetivo determinar a incidência do câncer no Hospital IESS da cidade de Ambato, Equador, durante o ano de 2017, através de uma abordagem descritiva transversal. A metodologia do estudo consistiu na revisão dos registros médicos de pacientes diagnosticados com câncer no hospital durante o período mencionado. Os dados foram analisados estatisticamente para determinar a frequência de casos de câncer e descrever as características dos pacientes afetados. Os resultados do estudo indicam que foram registrados um total de 114 casos de neoplasias durante o período de estudo, sendo mais comuns em mulheres em uma proporção de 1,5/1 em relação aos homens. O câncer de mama foi o tipo mais comum de câncer diagnosticado no hospital. Outros tipos comuns de câncer incluem câncer de próstata, câncer de estômago e câncer de colo do útero. Além disso, foi constatado que o câncer foi mais frequente em pacientes com mais de 60 anos e em pacientes do sexo feminino.

Palavras-chave: Câncer, Displasia, Registro Médico.

1. Introduction

Cancer is a disease that affects millions of people worldwide, and its incidence and mortality are on the rise [1]. According to a report by the International Agency for Research on Cancer (IARC) of the World Health Organization (WHO), in 2020, it produced 1.4 million deaths, and in 2040 it will increase to 6 million [2]. This increase is partly due to the aging of the population and the adoption of unhealthy lifestyle habits, such as smoking, excessive alcohol consumption, unhealthy diet, and lack of exercise. Developing countries are the most affected by this trend, as they often lack the necessary training, prevention, and equipment to cope with the increasing number of cancer cases [3].

In South America, cancer cases are also on the rise, with an 88% increase forecast over the next 20 years. Countries in the region face similar challenges to developing countries, such as a lack of resources and a higher incidence of unhealthy lifestyle habits. Colombia and Ecuador are expected to be the most affected countries, with a 132% and 131% increase in cancer mortality, respectively. South American countries also face challenges regarding resources and funding for research and development of more effective cancer treatments. A lack of investment in research and development can impede the identification of new therapies and technologies that can help prevent, diagnose and treat cancer more effectively [4].

At the local level, the National Tumor Registry (RNT) has become an essential tool for understanding cancer incidence and presentation in Ecuador. In addition, the National Institute of Statistics and Census (INEC) provides information on the growing importance of cancer in the country as a cause of mortality. Despite these efforts, a more significant commitment to cancer prevention and early detection is needed to address the growing burden of this disease [5]. Another challenge in the fight against cancer in Ecuador is the accessibility and affordability of cancer treatments. The costs of treatments and medications can be prohibitive for many

people in the country, limiting access to cancer care and treatment [6]. Policies and programs are needed to ensure that all Ecuadorians have access to cancer care and treatment, regardless of their ability to pay [7].

This article consists of four sections, including the introduction in section 1. The methodology is presented in section 2, and the results in section 3.

2. Methodology

2.1. Type and design of research

This was a non-experimental study because the variables were not manipulated, but the information was collected through observation. Likewise, it was exploratory because it was the first time it was carried out in this place. We sought general and preliminary information on cancer incidence in the IESS Ambato hospital. In addition, it was descriptive because the incidence of cancer was analyzed about different variables, such as types of cancer, age, gender, days of hospitalization, the evolution of patients, presumptive and confirmatory diagnosis, histopathology, and mortality. It was cross-sectional because the information was collected at a specific time, i.e., during 2017, and patients were not followed up.

2.2. Participants

Patients who were treated at the IESS Hospital in Ambato in 2017 and who presented some neoplasia.

2.3. Inclusion and Exclusion Criteria

The inclusion criteria are (i) patients with a confirmed diagnosis of cancer, according to hospital medical records; (ii) Patients who have received treatment for cancer at the hospital; (iii) Patients who have been referred to the hospital for cancer treatment; (iv) Patients who have been diagnosed with cancer at the hospital from routine screening or check-ups; (v) Patients who have been diagnosed with any type of cancer, including solid and hematological cancers; (vi) Patients who have been diagnosed with cancer at any stage of the disease. And among the exclusion criteria: (i) Patients with other severe medical conditions.

2.4. Data collection techniques and instruments

For the research, the collection and analysis of statistical information provided by the statistics department of the institution were performed. In addition, the classification, prioritization, and identification of information related to ICD 10 of malignant and benign neoplasms in 2017. Also, descriptive and inferential statistics for the 114 cases structured under the following analysis criteria: (i) Incidence of cancer (by the ten main types of neoplasms); (ii) Types of cancer by age; (iii) Types of cancer by gender; (iv) Days of hospitalization; (v) Evolution of patients; (vi) Presumptive versus confirmatory diagnosis; (vii) Histopathological; (viii) Mortality by gender and age.

3. Results

This study analyzed cancer incidence in the Ambato General Hospital of the IESS in 2017. A total of 184 cases of neoplasms, both benign and malignant, were found, and the ten most prevalent were identified. The results showed that the neoplasm with the highest trend in this health unit was a benign ovarian tumor, followed by a malignant prostate tumor, encephalon, and stomach tumor. Benign breast tumors, endometrial gland hyperplasia, and malignant tumor of the thyroid gland, rectum, breast, and cervix were also observed. Notably, many benign tumors are coded with ICD-10 cancer or malignant neoplasm for a more specific assessment.

The tendency to develop cancer within the ten main types of neoplasms, and of the 114 prevalent cases, more were obtained in women in a ratio of 1.5/1 to men, as shown in Table 1. The age group with the highest incidence of malignant or benign neoplasm is adults and the elderly, with 38% each. The types of neoplasms that prevail in adults are benign ovarian tumors, endometrial hyperplasia, and malignant tumor of the thyroid gland. In older adults, malignant prostate, stomach, and rectum tumors prevail. On the other hand, in young adults, there is a 20% prevalence of benign ovarian tumors, benign breast tumors, and malignant brain tumors.

Table 1. Incidence of cancer in the General Hospital of IESS Ambato, according to sex. [8].

N°	Type of cancer	Female Sex (F)	Male Sex (M)	% F	% M	Total
1	Benign ovarian tumor	20	0	17,54	0,00	20
2	Malignant prostate tumor	0	17	0,00	14,91	17
3	Malignant brain tumor	5	10	4,39	8,77	15
4	Malignant tumor of the stomach	5	7	4,39	6,14	12
5	Benign breast tumor	7	4	6,14	3,51	11
6	Endometrial gland hyperplasia	10	0	8,77	0,00	10
7	Malignant tumor of the thyroid gland	4	6	3,51	5,26	10
8	Malignant tumor of the rectum	5	2	4,39	1,75	7
9	Malignant breast tumor	7	0	6,14	0,00	7
10	Malignant tumor of the cervix	5	0	4,39	0,00	5
	TOTAL	**68**	**46**	**59,65**	**40,35**	**114**

Regarding the duration of treatment, patients remain in the hospital for an average of 61 to 75 days, representing 36% of the total, followed by 31 to 45 days, corresponding 27%, and 46 to 60 days, representing 25%. After this, patients are kept under permanent check-ups or are transferred according to the level of complexity. Of the 114 cases of hospitalized patients with cancer detected in the Ambato general hospital of the IESS during 2017, 14 died, representing 8% of the total.

When analyzing the statistics of the deceased according to age groups, the group of older adults has 71% in the function of 10 deceased persons, followed by adult and young adults at 14%. Regarding gender, 78% of the total number of men died, 14.3% in adults, and 64.3% in older adults, with prostate, brain, and stomach cancer is the most prevalent. In women, death was 21%, with 14.3% in young adults and 7% in older adults, with brain, stomach, and cervical cancer being the most prevalent.

According to Table 2, 80% of patients with suspected cancer underwent biopsies that confirmed the initial diagnosis, while the remaining 20% had no diagnostic test results. A critical analysis explains why cases of benign tumors are coded as benign neoplasms in ICD-10. Based on the anamnesis and the symptomatology presented by the patient, the physician who performed the evaluation considered them neoplasms to achieve the corresponding pathological analysis. Furthermore, in some cases, they are regarded as precursors of cancer. Of the 41 cases that presented benign breast tumors, benign ovarian tumors, and endometrial gland hyperplasia, 14 had a definitive diagnosis of malignant tumor after the corresponding examinations. Of these 14, 6 corresponded to the initial 41 cases, which led to the death of one of the patients. Four cases did not receive a definitive diagnosis of cancer.

Table 2. Cancer type vs. histopathological [8].

N°	Type of cancer	Biopsy	
		Yes	No
1	Benign ovarian tumor	15	5
2	Malignant prostate tumor	10	6
3	Malignant brain tumor	10	5
4	Malignant tumor of the stomach	12	0
5	Benign breast tumor	8	3
6	Endometrial gland hyperplasia	8	2
7	Malignant tumor of the thyroid gland	9	1
8	Malignant tumor of the rectum	7	0
9	Malignant breast tumor	7	0
10	Malignant tumor of the cervix	6	0
	TOTAL	**92→80%**	**22→20%**

Overall, the results indicate that early detection and diagnosis are critical in preventing and treating cancer. Appropriate diagnostic tools, such as biopsy, are crucial in confirming an initial diagnosis of cancer and avoiding delays in treatment. Furthermore, identifying benign neoplasms as precursors to cancer highlights the importance of careful evaluation and close follow-up of these patients. In summary, these results underscore the importance of continued vigilance and care in cancer detection and treatment.

4. Discusion

Cancer continues to be one of the main public health problems worldwide, and the data presented in the text support this claim. According to SOLCA and the General Hospital of IESS Ambato reports, certain types of cancer, such as thyroid, breast, and skin cancer, have recently remained high in Tungurahua. In addition, the incidence of prostate and cervical cancer, although not as high as other types of cancer, continues to be of concern [9].

It is important to note that the incidence and mortality from some types of cancer are steadily increasing worldwide, especially in low- and middle-income countries. The Global Initiative for Cancer Registry Development (GICR) was created in response to the inequalities in data on this pathology in low- and middle-income countries. The fact that Ecuador belongs to the Latin American Node allows cancer control actions to be adopted and implemented in the region.

In the specific case of the General Hospital of IESS Ambato, data reveal that the prevalence of ovarian, prostate, brain, stomach, breast, and thyroid cancer is high. In addition, cancer incidence is higher in women and older adults. These results are consistent with worldwide data showing that cancer is more common in older people and that women have a higher incidence of cancer in some organs.

Regarding the practical implications of these results, health authorities must implement cancer prevention and control programs, especially in higher-risk groups. In addition, public awareness campaigns on cancer risk factors and the importance of early detection are required. It is important to emphasize that early cancer detection is fundamental to increasing survival rates and reducing mortality from this disease.

5. Conclusion

Cancer is a complex disease that affects millions of people worldwide. The different causes of cancer, such as smoking, chemical exposure, and genetic predisposition, have been explored, and the importance of prevention and early detection has been highlighted. The present research provided a detailed overview of cancer, its causes, symptoms, and currently available treatments. The different types of cancer, their possible causes, and the diagnostic methods used to detect the disease were highlighted. In addition, the importance of prevention and early diagnosis of cancer to increase the chances of survival was emphasized.

Likewise, the different treatment options available to treat cancer, such as surgery, radiotherapy, and chemotherapy, were identified. Accurate cancer statistics, including mortality and survival rates, have been presented, and it has been determined that cancer incidence has increased worldwide. In addition, it has been noted that cancer prevalence varies by geographic region, gender, and age.

It is essential to highlight the need for a multidisciplinary approach to address cancer disease. We conclude the high value of collaboration between clinicians, researchers, patients, and civil society organizations to improve cancer patients' quality of life and advance research and treatment of the disease. A comprehensive literature review was conducted in the present investigation; however, the results presented are not in-depth, and there are limitations. Future work will address issues related to equity in medical care and access to advanced cancer diagnosis and treatment technology.

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Conflicts of Interest
The authors declare no conflict of interest.

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