Epidemiological and sociodemographic characterization of women and men with cancer in a State in the Brazilian Amazon

Carlos Alberto Paraguassu-Chaves[1], Allan Kardec Duailibe Barros Filho[2], Carlos de Andrade Macieira[3] Fabrício Moraes de Almeida[4], Lenita Rodrigues Moreira Dantas[5], João Viana Fonseca Neto[6] Alcione Miranda dos Santos[7]

[1]PhD in Health Sciences - University of Brasília - UnB, Brazil; PhD in Science - University of Havana (Cuba); Post-Doctor in Health Sciences - UnB and Degli Studi D'Aquila University - IT. Professor at the Federal University of Maranhão, Brazil. E-mail: carlos.paraguassu@gmail.com

[2]PhD in Information Engineering. Universidade de Nagoya – Japan; Post-Doctor. The Institute of Physics and Chemistry (RIKEN), Japan. Professor at the Federal University of Maranhão, Brazil.

[3]Specialist in Internal Medicine and Nephrology - Federal University of Rio de Janeiro, Brazil. Nephrologist at the University Hospital of the Federal University of Maranhão – HUUFMA, Brazil.

[4]PhD in Physics (UFC), with post-doctorate in Scientific Regional Development (DCR/CNPq). Researcher of the Doctoral and Master Program in Regional Development and Environment (PGDRA/UNIR). Leader of line 2 - Technological and Systemic Development, and Researcher of GEITEC ― Federal University of Rondônia, Brazil.

[5]Graduated and Specialist in Geography. Graduated in Law. Researcher at the Higher Institute of Health Sciences and Environment of the Amazon – AICSA, Brazil.

[6]PhD in Electrica Engineering. Federal University of Paraíba, Brazil. Professor at the Federal University of Maranhão, Brazil.

[7]PhD in Production Engineering - Federal University of Rio de Janeiro. Professor at the Federal University of Maranhão, Brazil.

Abstract

Objective: Objective: Analyzes the epidemiological and sociodemographic characterization of women and men with cancer in the State of Rondônia, Western Amazon (Brazil), diagnosed over a period of 2 (two) years. Materials and Methods: It is a documentary, cross-sectional and descriptive study, with the systematization of primary data, according to the methodological model recommended by Paraguassú-Chaves et al [25].   We used an instrument developpe by Paraguassu-Chaves et al   [26], semi-structured, divided into two blocks: (a) Block I – sociodemographic profile and (b) Block II – epidemiological profile. The Ethics Committee on Human Research at the reference hospital was asked to waive the Informed Consent Form. The research project is in accordance with Resolution 196/96 of the National Health Council of Brazil.   Results: Of the 3.333 new cases of cancer, 53.4% were female and 46.5% male. The 10 (ten) most common types of cancer among men and women in Rondônia over a 2-year period were non-melanoma skin (C44), breast (C50), prostate (C61), cervix (C53), stomach (C16), thyroid gland (C73), bronchi and lungs (C33-C34), colon (C18), reticuloendothelial hematopoietic system (C42) and rectal

cancer (C20). An age range of 50 to 69 years was predominant in both sexes and patients with low educational level. The highest frequency was for married patients. There was a predominance of brown skin, patients born in the State of Rondônia (22.6%) and agricultural workers. The Unified Health System - SUS was responsible for the entry for treatment of 99.5% of patients.   Most patients underwent "other isolated therapeutic procedures" and with the disease in advanced stages. Conclusions: The estimate of new cancer cases in Rondônia follows an increasing trend. The scenarios selected from the variables of the sociodemographic and epidemiological indicators of the research require the public health authorities of Rondônia, urgent redirection of actions and strategies for the prevention, control, assistance and treatment of cancer in women and men in Rondônia.

Keywords— Cancer. Epidemiological and sociodemographic characterization. Rondônia. Western Amazonia.

I. INTRODUCTION

The estimate for each year of the 2020-2022 triennium indicates that 625 thousand new cases of cancer will occur in Brazil. Non-melanoma skin cancer will be the most incident (177 thousand), followed by breast and prostate cancer (66 thousand each), colon and rectum (41 thousand), lung (30 thousand) and stomach (21 thousand) [1]. The most common types of cancer in men, with the exception of non-melanoma skin cancer, are prostate (29.2%), colon and rectum (9.1%), lung (7.9%), stomach (5.9%) and oral cavity (5.0%). In women, except for non-melanoma skin cancer, the main ones are cancers of the breast (29.7%), colon and rectum (9.2%), cervix (7.4%), bronchus and lung (5.6%) and thyroid (5.4%).

The age-adjusted incidence rates, with the exception of non-melanoma skin cancer, both in men (215.86 / 100 thousand) and in women (145.00 / 100 thousand) are considered to be intermediate and are close to those found in countries under development [1]. Prostate cancer and female breast cancer have the highest adjusted rates for all regions of Brazil and their magnitude is about twice that of the second most common, except in the Northern Region of Brazil, where the adjusted rates of cancer of breast and cervix are very close [2].

The number of new cases of non-melanoma skin cancer expected, for each year of the 2020-2022 period, will be 83.770 men and 93.160 in women, corresponding to an estimated risk of 80.12 new cases per 100 thousand men and 86.65 new cases a every 100.000 women. Non-melanoma skin cancer in men in the North Region (Brazilian Amazon) ranks second, with an estimated risk of 21.28 / 100 thousand. In women, non-melanoma skin cancer is more prevalent in all Brazilian regions, with an estimated risk of 39.24 / 100 thousand in the North Region [1]. Ferlay et al [3] estimated new cases of non-melanoma skin cancer compared to other types of cancer, while Stewart, Wild [4] found the highest incidence rates and made an analogy with several risk factors. Perhaps the most representative studies in terms of numbers are those presented by the American Cancer Society [5], [6], [7], [8]. In Brazil, the most consistent study is that of the National Cancer Institute - INCA [9].

Female breast cancer (except non-melanoma skin tumors) occupies the first most frequent position in all Brazilian regions, with an estimated risk of 21.34 per 100 thousand in the Northern Region.

Stewart, Wild [4] observed a prevalence of breast cancer and prediction of survivors, while Ferlay et al. (3) observed a variation in incidence in different regions of the world. Other reference works are from the American Cancer Society [5] and INCA [10].

Prostate cancer (except for non-melanoma skin tumors) ranks first in the country in all Brazilian regions, with an estimated risk of 29.39 / 100 thousand in the Northern Region. Howlader et al [11], had already observed that prostate cancer is a highly prevalent disease. Stewart, Wild [4] studied the behavior and position of prostate cancer among malignant neoplasms that affect men worldwide, and Ferlay et al [3], [12] estimated the number of new cases of cancer of the prostate in the world.

Cervical cancer (except for non-melanoma skin tumors) is the second most incident in the North (21.20 / 100 thousand). Ferlay et al [3] and Ferlay et al [13], [14], [15], [16] describe the variation in the frequency of cervical cancer in areas with different levels of human development, while the American Cancer Society [5] analyzes its impact on developing countries, the implementation of effective prevention and control programs, tracking and statistics.

Stomach cancer in men (except for non-melanoma skin tumors) is the second most frequent in the Northern Region (11.75 / 100 thousand), while in women, it is the fifth most frequent in the Northern Region (6.03 / 100 thousand) [1]. Ferlay et al [3] studied the prevalence of stomach cancer in the world and Stewart, Wild [4] observed the differences between genders. The studies by Ferlay et al [12] and Forman et al [17] identified incidence rates between men and women.

Thyroid cancer (except non-melanoma skin tumors) in men ranks third most frequently in the North Region (0.50 / 100 thousand) and for women they occupy the ninth most frequent position [1]. An estimated 17.760 new cases of lung cancer in men and 12.440 in women. These figures include an estimated risk of 16.99 new cases per 100.000 men and 11.56 per 100.000 women [1]. Estimates of new cases worldwide and the incidence rate by sex were revealed by Ferlay et al [3] and geographical differences and patterns of diversity were pointed out by Forman et al [17] and La Vecchia et al [18]. Lung cancer (except for non-melanoma skin tumors) in men ranks third most frequently in the North Region (9.24 / 100 thousand) and in women it ranks fourth most frequently in the North Region (6.47 / 100 thousand) [1]. The American Cancer Society [19] and Canadian Cancer Society [20], [21] describe the main cause of lung cancer, as well as the incidence of new cases, making a worldwide estimate of new cases of the disease. These studies are corroborated by Ferlay et al [3] and the World Health Organization [22], which also establish the pattern of occurrence of this type of neoplasia.

Cancer of the colon and rectum (except non-melanoma skin tumors) in men is the fourth most incident in the North Region (5.27 / 100 thousand) and in women, it is the third most incident (6.48 / 100 thousand). Colon and rectal cancer has epidemiological relevance worldwide [3]. Its incidence pattern differs between genders [3]. A wide geographical variation of colon cancer and rectal cancer has been observed and monitored worldwide [23], [3].

Leukemia (except non-melanoma skin tumors) in men is the fifth most common in the Northern Region (4.45 / 100 thousand) and the sixth most frequent in women (3.55 / 100 thousand). Stewart, Wild [4] studied the variation in leukemia incidence rates by countries, while Ferlay et al [3] estimated new cases in men and women. Non-Hodgkin's lymphoma (except non-melanoma skin tumors) in men is the tenth

most frequent (2.23 / 100 thousand) and, in women, is the eleventh in the North (1.95 / 100 thousand). Ferlay et al [3] estimated and compared NHL between men and women worldwide.

In the North region, where the state of Rondônia is geographically located, cervical and stomach cancer has an important impact, although it also exhibits prostate and female breast cancer as the main types of cancer in this population. The Northern Region is the only one in the country where breast and cervical cancer rates are equivalent among women [2].

In Brazil, the distribution of different types of cancer suggests an ongoing epidemiological transition. According to Paraguassú-Chaves and others "Rondônia's Epidemiological Profile" [24], one explanation for the significant increase in the incidence of cancer lies in the greater exposure of people to cancer risk factors. The redefinition of living standards, standardization of working conditions, nutrition and consumption triggered by the global industrialization process, has important repercussions on the epidemiological profile of populations.

Until a few decades ago, little or nothing was known about the epidemiology of cancer in the State of Rondônia, in the Western Amazon (Northern Region of Brazil). The official cancer information in Rondônia started with the implantation of the High Complexity Unit - UNACON, in 2007, at Hospital de Base Dr. Ary Pinheiro, in the city of Porto Velho, headquarters of the State of Rondônia. UNACON aims to catalog the data to support the Hospital Cancer Information System - SISRHC / INCA, as systematic sources of information, based on medical records regarding the registration and use of admitted cases, assessing quantity, quality of survival and, indirectly, the quality of assistance provided at the institution. This information being primary sources not only for epidemiological research on determinants of cancer, but also for planning prevention, diagnosis and treatment of the disease [25], [26], [27].

Research by Paraguassu-Chaves et al [25] "Epidemiological profile of cancer in Rondônia: Brazilian Amazon", records as a historical landmark in the systematization and analysis of cancer data in Rondônia. In recent years, cancer has been incorporated into the fear of the population of the Brazilian Amazon. Most of the population is unaware of neoplasms, which has led people to live with fear of the disease and fear of death [26].

In Rondônia, research by Paraguassu-Chaves and others [24] "Epidemiological profile of Rondônia", Paraguassú-Chaves and others [25] "Epidemiological profile of cancer in Rondônia: Brazilian Amazon", Paraguassu-Chaves and others [26] "Epidemiology of cancer in Rondônia", Paraguassu-Chaves [27] "Diagnosis of cancer in women in Rondônia: Study of Medical Geography" and Paraguassú-Chaves et al [28] "Analysis of the histological frequency and pediatric cancer in Rondônia, Western Amazonia (Brazil)", have contributed to the direction of new research on cancer, sociodemodemographic profile, clinical profile, epidemiological profile and territorial and spatial cancer production and distribution in Rondônia, Western Amazon.

The National Cancer Institute of Brazil (INCA) recognizes that the prevention and control of cancer in our country, of continental dimensions and strong regional differences, because it houses a population of behaviors, beliefs and attitudes in a very diverse way, currently represents great challenges public health. The description of the distribution of the most incident types of cancer, over time, has been one of the main strategies for the establishment of guidelines in public policies and, mainly, for the planning of cancer prevention and control actions [26].

The estimate of cancer in Rondônia follows a linear trend in progress. In 2013, 1.816 patients were diagnosed, in 2014 there was a small regression to 1.731 patients and in 2015, 1.602 patients. However, those numbers increased to 2.980 patients in 2018 and projected to 3.090 patients in 2020.

In the search to know a little more about the behavior of cancer in Rondônia, we defined the objective of this study, analyze an epidemiological and sociodemographic characterization of women and men with cancer in the State of Rondônia, Western Amazon (Brazil), diagnosed during a period of 2 (two) years.

II. MATERIALS AND METHODS

2.1 Study Type

This is a documentary, transversal and descriptive study, with the systematization of primary data according to the methodological model recommended by Paraguassu-Chaves *et al* [25]. It was used as an official source, the primary data organized by the Hospital Epidemiology Nucleus - NHE of the Hospital de Base Dr. Ary Pinheiro and the Hospital de Câncer de Barretos - Porto Velho Unit, based on the diagnoses performed, for a period of 2 (two) years .

2.2 Model of Semi-structured Instrument Paraguassu-Chaves

We used an instrument developpe by Paraguassu-Chaves *et al* [26], semi-structured, divided into two blocks: (a) Block I – sociodemographic profile and (b) Block II – epidemiological profile. The sociodemographic profile is composed of the following variables: sex, age, education, marital status, ethnicity / skin color, place of birth and occupation of the patient. The epidemiological profile according to the model adopted in the research is composed of the following variables: proportional distribution of the 10 (ten) most common types of cancer in women and men, by location of the primary tumor; location of the primary tumor of all types of cancer diagnosed; origino f the patient's referral; patient entry clinic; clinic responsible for the first care of the patient; entry clinic according to previous diagnosis and treatment; cancer distribution according to previous diagnosis and treatment; 1st treatment received by the patient; diagnosis and stage of the disease; basis for diagnosis, number of primary tumors and topography of occurrence of first metastasis; reason for not performing the treatment; median between enrollment and diagnosis, diagnosis and treatment and between enrollment and treatment.

2.3 Sampling Number

The research was carried out with the database of 3.333 female and male patients diagnosed with cancer in Rondônia, corresponding to the period of 2 years.

2.4 Inclusion and exclusion criteria

All protocols with cancer diagnoses that were admitted to the Dr. Ary Pinherio and Barretos / Rondônia Base Hospitals were included. Data without information or those that do not apply (discarded) due to inconsistent data or incomplete protocols were excluded.

2.5 Ethical Aspects

The Human Research Ethics Committee of the reference hospital was asked to waive the Informed Consent Form, because the study did not require patient intervention or collection of biological material and there was no possibility of constraints for the patient and his family, in compliance with Resolution 196/96 of the National Health Council of Brazil.

III. RESULTS

3.1 Block 1: Sociodemographic Profile of Patients

Cancer distribution according to patient's gender.

During the study period, corresponding to 2 years, 3.333 new cases of cancer were diagnosed in Rondônia. The female sex with 1.781 new cases (53.4%) "versus" 1.552 new cases (46.5%) in males represents the highest proportion of new cancer cases in the State of Rondônia. According to data from the Epidemiology Center, it can be noted that there is a small inversion of values compared to the national and international bibliography. (Table 1).

Cancer distribution according to the patient's age group.

The intermediate values reported in the range of 20 to 34 years of age in relation to the adult phase, present a relative frequency of 7.9%, 10.7% in women and 4.7% in men. The age group with the highest incidence of females and males occurs between 50 and 69 years (46.5%). The female sex has a higher relative frequency of 47.1% of new cases in the age group of 45 to 69 years old and in males, with 54.5% in the age group of 55 to 74 years old. It can also be noted that the female sex shows a decrease in new cases after 65 years.

Cancer distribution according to the patient's level of education.

Patients with incomplete and complete elementary education represent 54.2% of the reported cases of cancer, when added to the illiterate (17.1%), the relative frequency rises to 71.3%. Patients with an average level of education have a frequency of 11.9% and graduates 5.3%.

Distribution of cancer according to or marital status.

Married patients have a greater number of new cases (1.804), corresponding to 54.1%, single with 487 new cases (14.6%) and finally widowers with 159 new cases (10.6%). Patients without information about their marital status correspond to 12.3%.

Cancer distribution according to the patient's ethnicity / skin color.

The brown patient is predominant in the state of Rondônia and also has higher frequencies, making a total of 73.3% of all types of cancer, followed by the white patient with 18.5% and black with 2,9%. The indigenous population is present with 0.7%, yellow with 0.6% and with no information representing 4.0%.

Patients born in the State of Rondônia are predominant and contributed with 753 new cases (22.6%), followed by patients born in the State of Minas Gerais with 386 new cases (11.6%), in the State of Paraná with 380 new ones cases (11,4%), State of Amazonas with 247 new cases (7.4%), State of Espírito Santo with 246 cases, São Paulo with 183 cases and Acre with 173 cases. The other States of Brazil contributed with 26.1% and foreign patients with 0.9%.

Cancer distribution according to patient occupation.

Of 3.333 new cancer cases diagnosed, 715 cases without information were excluded and 1.184 cases "not applicable" were discarded, totaling 1.899 cases. Of the 1.434 cases with information on patient occupation, workers in agricultural activities predominate, with 662 cases (43.4%). (Table 1).

Table 1: Sociodemographic characterization of men and women with cancer in Rondônia.

Genre				Fa*		Fr %	
Female				1.781		53.4	
Male				1.552		46.6	
Total				**3.333**		**100**	
Age Range	**Female**		**Male**		**Total**		
Age	**Fa***	**Fr %**	**Fa***	**Fr %**	**Fa***	**Fr %**	
00 – 04	7	0.4	14	0.9	21	0.6	
05 – 09	1	0.06	7	0.4	8	0.2	
10 – 14	6	0.3	11	0.7	17	0.5	
15 – 19	14	0.8	11	0.7	25	0.7	
20 – 24	39	2.2	17	1.1	56	1.7	
25 – 29	68	3.8	23	1.5	91	2.7	
30 – 34	83	4.7	33	2.1	116	3.5	
35 – 39	142	8.0	44	2.8	186	5.6	
40 – 44	168	9.4	57	3.7	225	6.7	
45 – 49	204	11.4	101	6.5	305	9.1	
50 – 54	203	11.4	149	9.6	352	10.6	
55 – 59	228	12.8	168	10.8	396	11.9	
60 – 64	205	11.5	238	15.3	443	13.3	
65 – 69	127	7.1	231	14.9	358	10.7	
70 – 74	123	6.9	201	13.5	324	9.7	
75 – 79	91	5.1	145	9.3	236	7.1	
80 e +	68	3.8	102	6.6	170	5.1	
Total	**1781**	**100**	**1552**	**100**	**3333**	**100**	
Education				**Fa***		**Fr %**	
Illiterate				570		17.1	
Incomplete Elementary School				1.286		38.6	
Complete primary education				521		15.6	
High school				398		11.9	
University graduate				178		5.3	
No information				380		11.4	
Total				**3.333**		**100**	
Marital Status				**Fa***		**Fr %**	

Married	1.804	54.1
Not married	487	14.6
Consensual Union	119	3.6
Separated / Divorced	159	4.8
Widower	354	10.6
No information	409	12.3
Total	**3.333**	**100**

Ethnicity / Skin Color	**Fr %**
Brown	73.3
White	18.5
Black	2.9
Indigenous	0.7
Yellow	0.6
No information	4.0
Total	**100**

Place of Birth (State)	**Fa***	**Fr %**
Rondônia	753	22.6
Minas Gerais	386	11.6
Paraná	380	11.4
Amazonas	247	7.4
Espírito Santo	246	7.4
São Paulo	183	5.5
Acre	173	5.2
Other States of the country	871	26.1
Foreign	30	0.9
No information	64	1.9
Total	**3.333**	**100**

Occupation	**Fa***	**Fr %**
Farmer	622	43.37
Healthcare professionals, operator, industry worker	124	8.64
Elementary and high school teachers	64	4.46
Driver	62	4.32
Construction workers	60	4.18
Service workers (home, hotels, domestic, cope, baba, caretaker)	43	2.99
Nursing and similar technicians	22	1,53
Other occupations	437	30.47
Total	**1.434**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

3.2 Block 2: Epidemiological Profile of Patients

Proportional distribution of the 10 most common types of cancer in women and men.

From the proportional distribution of the most frequent cancers in women in the period of 2 years reported in the Base Hospitals Dr. Ary Pinheiro and Barretos / RO, breast cancer stands out as the highest incidence in the State of Rondônia with 32.2% of new cases, followed by for cervical cancer (21.5%) and non-melanoma skin cancer (17.3%). The ten most common types of cancer in women were in decreasing order: breast, cervix, non-melanoma skin, thyroid gland, stomach, colon, bronchi and lungs, ovary, reticuloendothelial hematopoietic system and cancer in the body of the uterus. (Table 2).

In men, prostate cancer has the highest frequency (30.9%), followed by non-melanoma skin cancer (22.9%) and stomach cancer (11.7%). The proportional distribution of 10 (ten) most common types of cancer in men were: prostate, non-melanoma skin, stomach, bronchi and lungs, colon, reticuloendothelial hematopoietic system, esophagus, brain, rectum and bladder. (Table 2).

The most common types of cancer among men and women were: non-melanoma skin - C44 (21.2%) of new cases, breast - C50 (19.1%), prostate - C61 (14.7%), cervix - C53 (12.7%), stomach - C16 (8.7%), thyroid gland - C73 (5.6%), bronchi and lungs - C33-C34 (5.2%), colon - C18 (5%), reticuloendothelial hematopoietic system - C42 (4.5%) and rectum C20 (3.3%) of new cases. (Table 2).

Table 2: Proportional distribution of the 10 (ten) most frequent types of cancer in Rondônia.

Localization of Primary Tumor in Women	Fa*	Fr%	Localization of Primary Tumor in Men	Fa*	Fr%	Primary tumor location in women and men	Fa*	Fr%
Breast	466	32.2	Prostate	359	30.9	Non-melanoma skin	518	21.2
Cervix	311	21.5	Non-melanoma skin	267	22.9	Breast	466	19.1
Non-melanoma skin	251	17.3	Stomach	136	11.7	Prostate	359	14.7
Thyroid Gland	111	7.7	Bronchus and Lung	78	6.7	Cervix	311	12.7
Stomach	77	5.3	Colon	68	5.8	Stomach	213	8.7
Colon	53	3.7	Reticuloendothelial Hematopoietic System	68	5.8	Thyroid Gland	133	5.6

Bronchus and Lung	50	3.4	Esophagus	51	4.4	Bronchus and Lung	128	5.2
Ovary	48	3.3	Brain	49	4.2	Colon	121	5.0
Reticuloendolteli al Hematopoietic System	42	2.9	Rectum	45	3.9	Reticuloe ndothelial Hematop oietic System	110	4.5
Body of the uterus	39	2.69	Bladder	42	3.6	Rectum	81	3.3
Total	**1.448**	**100**	**Total**	**1.163**	**100**	**Total**	**2.440**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer cases by location of the primary tumor.

Non-melanoma skin cancer (C44) stands out with the highest incidence of all types of cancer in the State of Rondônia, with 15.5% of cases. Of these, 14.1% in women and 17.2% in men. The second highest incidence is breast cancer (C50), with 14.4% of all cancers. In women they represent a frequency of 26.2%. Prostate cancer (C61) with 10.8% of all cancers is the third most incident. It represents 23.1% of cancers in men and is the 3rd in the proportional order of cancer cases by location of the primary tumor, followed by cervical cancer (C53) with 9.3% of cancers and 17.5% of cancers in women. In the sequence, stomach cancer (C16) appears with 6.4% of all cancers, responsible for 4.3% of cases in women and 8.8% of cases in men and thyroid cancer (C73) with 4.0% of cancers, 6.2% in women and 1.4% in men. The sequence and decreasing order among the 10 most common types of cancer are bronchi and lungs (C33-C34), with 3.8% of cancers, 2.8% in women and 5% in men, colon cancer (3.6%) of all cancers, 3% in women and 4.4% in men, cancer of the hematopoietic retinuloendothelial system (2.3%) of all cancers, 2.3% in women and 4.4% in men and rectal cancer (2%), 2% in women and 2.9% in men. (Table 3). There is no evidence that the distribution of cancer by location of the primary tumor notified in Rondônia is very distant from the projections of neoplasms distributed in Brazil.

Table 3: Proportional distribution of cases of all types of cancer by location of the primary tumor.

Primary tumor location of all types of câncer	**CID-O**	**Female**		**Male**		**Total**	
		Fa*	**Fr%**	**Fa***	**Fr%**	**Fa***	**Fr%**
Lip	C00	1	0.05	6	0.38	7	0.21
Base of tongue	C01	0	0.0	6	0.38	6	0.18
Other Unspecified Parts and Parts of tongue	C02	7	0.39	20	1.28	27	0.81

Mouth Floor	C04	1	0.05	3	0.19	4	0.12
Palate	C05	3	0.16	4	0.25	7	0.21
Other and unspecified parts of Bica	C06	1	0.05	6	0.38	7	0.21
Parotid Paland Gland	C07	1	0.05	2	0.12	3	0.09
Other Major Salivary Glands	C08	0	0.0	3	0.19	3	0.09
Amygdala	C09	0	0.0	1	0.06	1	0.03
Oropharynx	C10	10	1.28	24	1.54	34	1.02
Nasopharynx	C11	0	0.0	4	0.25	4	0.12
Hypopharynx	C13	1	0.05	7	0.45	8	0.24
Other and Badly Defined Locations of the Lip, Oral Cavity and Pharynx	C14	1	0.05	1	0.06	2	0.06
Esophagus	C15	11	0.6	51	3.3	62	1.9
Stomach	C16	77	4.3	136	8.8	213	6.4
Small intestine	C17	7	0.39	2	0.12	9	0.27
Colon	C18	53	3.0	68	4.4	121	**3.6**
Rectosigmoid Junction	C19	5	0.28	4	0.25	9	0.27
Rectal	C20	36	2.0	45	2.9	81	2.4
Anus and Anal Canal	C21	17	0.95	9	0.57	26	0.78
Liver and Intrahepatic Bile Ducts	C22	31	1.7	35	2.2	66	2.0
Gallbladder	C23	1	0.05	4	0.25	5	0.15
Other Parts and Unspecified Parts of Bile Ducts	C24	4	0.22	3	0.19	7	0.21
Pancreas	C25	12	0.67	19	1.22	31	0.93
Outros Órgãos Digestivos e Localizações Mal Definidas do Aparelho Digestivo	C26	2	0.11	1	0.06	3	0.09
Face Breasts	C31	2	0.11	3	0.19	5	0.15
Larynx	C32	3	0.16	34	2.2	37	1.1
Bronchi and Lungs	C34	50	2.8	78	5.0	128	3.8
Thymus	C37	0	0.0	1	0.06	1	0.03
Heart, Mediastinum and Pleura	C38	11	0.61	2	0.12	13	0.39
Other Locations and Ill-Defined Locations of the Respiratory System and Intrathoracic Organs	C39	0	0.0	1	0.06	1	0.03

Bones, Joints and Joint Cartilage of the limbs	C40	11	0.61	9	0.57	20	0.60
Malignant Neoplasm of Bones and Joint Cartilages from Other Unspecified Locations	C41	8	0.44	6	0.38	14	0.42
Hematopoietic and Reticuloendothelial System	C42	42	2.3	68	4.4	110	3.3
Skin	C44	251	14.1	267	17.2	518	15.5
Retroperitoneum and Peritoneum	C48	6	0.33	5	0.32	11	0.33
Connective, Subcutaneous and Other Soft Tissues	C49	18	1.01	15	0.96	33	0.99
Breast	C50	466	26.2	14	0.9	480	14.4
Vulva	C51	4	0.22	0	0.0	4	0.12
Vagina	C52	6	0.33	0	0.0	6	0.18
Cervix	C53	311	17.5	0	0.0	311	9.3
Body of the uterus	C54	39	2.2	0	0.0	39	1.2
Uterus	C55	1	0.05	0	0.0	1	0.03
Ovary	C56	48	2.7	0	0.0	48	1.4
Other Female and Unspecified Genital Organs	C57	2	0.11	0	0.0	2	0.06
Placenta	C58	11	0.61	0	0.0	11	0.33
Penis	C60	0	0.0	16	1.03	16	0.48
Prostate	C61	0	0.0	359	23.1	359	10.8
Testicle	C62	0	0.0	14	0.90	14	0.42
Kidney	C64	18	1.0	33	2.1	51	1.5
Renal Pelvis	C65	0	0.0	1	0.06	1	0.03
Ureter	C66	0	0.0	1	0.06	1	0.03
Bladder	C67	16	0.9	42	2.7	58	1.7
Other Urinary and Unspecified Organs	C68	0	0.0	1	0.06	1	0.03
Eye and Attachments	C69	3	0.16	2	0.12	5	0.15
Meninges	C70	6	0.33	5	0.32	11	0.33
Brain	C71	29	1.6	49	3.1	78	2.3
Spinal Cord, Cranial Nerves and Other Parts of the Central Nervous System	C72	0	0.0	1	0.06	1	0.03
Thyroid gland	C73	111	6.2	22	1.4	133	4.0
Adrenal Gland	C74	0	0.0	2	0.12	2	0.06

Other Endocrine Glands and Related Structures	C75	8	0.44	6	0.38	14	0.42
Other Locations and Badly Defined Locations	C76	6	0.33	9	0.57	15	0.45
Lymph Nodes	C77	10	0.56	19	1.22	29	0.87
Unknown Primary Location	C80	2	0.11	0	0.0	2	0.06
Total		**1.781**	**100**	**1.552**	**100**	**3.333**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer by source of referral.

Out of a universe of 3.333 diagnosed cases, 3.316 were notified by the Unified Health System - SUS, corresponding to 99.5% of the patients admitted to the Hospital de Base Dr. Ary Pinheiro and / or Barretos / RO. In total, only less than 0.2% of all cancer cases registered at HBAP / Barretos / RO were not reported by SUS. (Table 4).

Table 4: Proportional Distribution of Cancer by Origin of the Referral.

Origem do Encaminhamento	Fa*	Fr %
SUS	3.316	99.5
Not SUS	6	0.2
On its own	0	0.0
Not applicable	1	0.03
No information	10	0.3
Total	**3.333**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer according to entry clinic and clinic responsible for the 1st service.

For the 2 years of studies of cancer distribution according to the entry clinic at the base hospitals Dr. Ary Pinheiro and Barretos in Rondônia follows the pattern of the annual frequency distribution. Clinical oncology with 2.726 patients represents 81.8% of all cancer patients. (Table 5).

Clinical oncology with 937 cases (responsible for 28% of all cases), mastology with 451 cases (13.5% of all cases), urology with 399 cases (12% of all cases), gynecology with 398 cases (11.9% of all cases), gastroenterology with 395 cases (11.9% of all cases) are, respectively, the main clinics responsible for the first service at Hospital de Base Dr. Ary Pinheiro and Barretos / RO. (Table 5).

Table 5: Proportional distribution of cancer according to entry clinic and clinic responsible for the 1st service.

Entrance Clinic	Fa*	Fr%	1st Service Clinic	Fa*	Fr%
Clinical Oncology	2.726	81.8	Clinical Oncology	937	28.1
Gynecology	110	3.3	Mastology	451	13.5
Gastroenterology	104	3.1	Urology	399	12.0
Mastology	92	2.8	Gynecology	398	11.9
Neurology	61	1.8	Gastroenterology	395	11.9
Other Clinics	231	6.9	Head and neck	291	8.7
Screening	9	0.3	Other Clinics	445	13.4
No information	0	0.0	No information	17	0.5
Total	**3.333**	**100**	**Total**	**3.333**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer by entry clinic, according to previous diagnosis and treatment.

The oncology clinic provided 2.725 initial care services. Of the patients seen at the oncology clinic, 496 (18.2%) patients were diagnosed and obtained treatment. However, 1.881 patients (69%) of the patients were diagnosed without receiving treatment and 342 (12.6%) were not diagnosed and also received no treatment. (Table 6).

Table 6: Distribution of cancer by entry clinic, according to previous diagnosis and treatment.

Entrance Clinic	With Diag / With Trat	With Diag / Without Trat	Without Diag/ Without Treat	No Infor
Clinical Oncology	496	1.881	342	6
Gynecology	14	74	22	0
Neurology	7	40	14	0
Clinical Hematology	14	14	20	0
Mastology	10	57	25	0
Urology	5	36	7	0
Gastroenterology	10	53	41	0
Head and neck	4	28	13	0
Other Clinics	16	51	3	2
Total 3.333	**576**	**2.234**	**515**	**8**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer, according to previous diagnosis and treatment.

        2.234 (67.3%) patients were diagnosed, but received no treatment. This is followed by 575 cases (17.1%) of patients with diagnosis and treatment and 515 (15.4%) of patients without diagnosis and without treatment. (Table 7).

Table 7: Proportional distribution of cancer, according to or previous diagnosis and treatment.

Diagnosis and Previous Treatment	Fa*	Fr%
With Diagnosis / Without Treatment	2.234	67.3
With Diagnosis / With Treatment	575	17.1
Without Diagnosis / Without Treatment	515	15.4
No information	9	0.2
Total	**3.333**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer according to the first treatment.

        Other isolated therapeutic procedures showed a higher frequency with 807 cases (44.4%) of the total sample universe of 1.816 cases. Then 490 cases (27%) of patients who did not receive any procedure. Surgery with 277 cases (15.2%) and chemotherapy 109 cases (6.0%) are also representative for the first treatment of cancer patients. (Table 8).

Table 8: Distribution of cancer according to first treatment received.

First Treatment	Fa*	Fr%
Other Isolated Therapeutic Procedures	807	44.4
No Procedure	490	27.0
Surgery	277	15.2
Chemotherapy	109	6.0
Other isolated therapeutic procedures + surgery	44	2.4
Surgery + Chemotherapy	19	1.0
Radiotherapy	16	0.9
Other Isolated Therapeutic Procedures + Chemotherapy	13	0.7
Other combinations of procedures **	39	2.2

No information	4	0.2
Total	**1.818**	**100**

** Chemotherapy + Radiotherapy; Chemotherapy + Surgery; Radiotherapy + Chemotherapy; Others.

Fa* Absolute frequency　　**Fr%** Relative frequency

Proportional distribution of cancer by clinical stage, according to previous diagnosis and treatment.

Table 9 represents the proportional distribution of cancer by clinical stage, according to previous diagnosis and treatment. Of the total of 3.333 cancer patients notified, 2.724 (81.7%) are patients without information about the disease. Excluding the sub-stratification of patients without information and without knowledge of the stage of the disease, there was a predominance of patients (55.8%) with diagnosis and treatment in stages I, stage II, stage III and stage IV. Undiagnosed and untreated patients represent 13% of all patients in the 4 stages of the disease. In the three diagnostic categories, there was a predominance in stages III and IV. It should be noted that the sum of the stages (I, II, III, IV) excluding patients without information, corresponds to 88% of the analyzed universe. (Table 9).

Table 9: Proportional distribution of cancer by clinical stage, second or previous diagnosis and treatment.

Diagnosis	Stage I	Stage II	Stage III	Stage IV	Non-Internship	Without / Infor
With Diag / Without Trat	20	30	36	43	187	1.918
With Diag / With Trat	11	18	21	22	80	423
Without Diag / Without Treat	6	8	6	10	111	374
No information	0	0	0	0	0	9
Total	**37**	**56**	**63**	**75**	**378**	**2.724**

Fa* Absolute frequency　　**Fr%** Relative frequency

Proportional distribution of cancer, by examination performed for diagnosis, number of primary tumors and topography of the occurrence of the first metastasis.

According to table 10, of the total of 3.333 patients, 92% had their diagnosis confirmed by histological examination of the primary tumor. A single primary tumor was identified in 99.96% of the exams. From the topographies of occurrence of the 1st metastasis, there was a predominance of liver cancer and intrahepatic biliary tract with 13 occurrences (25%), bronchi and lungs with 12 occurrences (23.1%), bones, joints and joint cartilage of the limbs with 12 occurrences (23.1%) and meninges with 4 occurrences (11.5%). (Table 10).

Table 10: Proportional distribution of cancer, by examination performed for diagnosis, number of primary tumors and topography of the occurrence of the first metastasis.

Most important basis of diagnosis	Fa*	Fr%
Clinic	3	0.1
Clinical research	8	0.2
Examination by Image	161	4.8
Tumor Markers	53	1.6
Cytology	34	1.0
Primary Tumor Histology	3.065	92.0
No information	9	0.3
Total	**3.333**	**100**
Primary Tumor Numbers	**Fa***	**Fr %**
Single Primary Tumor	3.332	99.96
Multiple Primary Tumor	1	0.04
Total	**3.333**	**100**
Topography of the occurrence of the 1st metastasis	**Fa***	**Fr*%**
Liver and Intrahepatic Bile Ducts	13	25.0
Bronchi and Lungs	12	23.1
Heart, Mediastinum and Pleura	2	3.9
Bones, Joints and Joint Cartilage of Limbs	12	23.1
Malignant Neoplasm of Bones and Articular Cartilages from Other Unspecified Locations	1	1.9
Ovary	1	1.9
Kidney	1	1.9
Meninges	6	11.5
Brain	2	3.9
Thyroid gland	1	1.9
Other locations and ill-defined locations	1	1.9
Total	**52**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Proportional distribution of cancer due to not undergoing treatment.

Of the total of 3.333 cases, 101 did not undergo the 1st (first) treatment. Of these, 9 (8.4%) undergo treatment for the State, 3 cases (3%) simply abandoned treatment, 2 cases (2%) due to advanced disease stage, lack of clinical conditions or other associated diseases and 84 patients (83.1%) did not treat the disease for any other reason.

Regarding the disease state at the end of the 1st (first) treatment, it is observed that 2.457 (73.7%) of the patients had disease progression, 430 (12.9%) cases with stable disease and 224 (6.7 %) died. (Table 11).

Table 11: Proportional Distribution of Cancer Cases Whose Initial Treatment, According to the Reason for Not Performing the First Treatment and Disease Status at the End of the First Treatment.

Cancer whose initial treatment cannot be performed according to reason for not treating	Fa*	Fr%
Treatment Performed Outside	9	8.9
Advanced Illness, Lack of Clinical Conditions or Other Associated Diseases	2	2.0
Treatment Abandonment	3	3.0
Refusal of Treatment	1	1.0
Other reasons	84	83.1
No information	2	2.0
Total	**101**	**100**
Cancer status at the end of the 1st treatment	**Fa***	**Fr%**
Complete Remission	30	0.9
Partial Remission	72	2.2
Stable Disease	430	12.9
Disease in progress	2.457	73.7
Oncological Therapeutic Support	1	0.03
Death	224	6.7
Not applicable	90	2.7
No information	29	0.9
Total	**3.333**	**100**

Fa* Absolute frequency   **Fr%** Relative frequency

Time interval according to the average, median, fashion, quartile, minimum and maximum.

One of the factors in assessing the quality of care of a reference institution in cancer treatment is the time interval between the three most important moments in caring for a patient: admission date, diagnosis date and treatment start date. The average time since registration / diagnosis is 19.5 days, the period of diagnosis / treatment can reach 79 days and the maximum duration of 2.444 days. The median between enrollment and diagnosis is 10 days and between diagnosis treatment reaches 40.5 days. In the

third quartile, the time between enrollment and diagnosis is 28 days and between diagnosis and treatment it reaches 82.5 days. (Table 12).

Table 12: Time interval (in days) elapsed, according to the average, median, mode, quartile, minimum and maximum, between: 1st consultation-1st diagnosis, 1st diagnosis-beginning of treatment, 1st consultation-beginning of treatment.

Indicator	Registration / Diagnosis	Diagnosis / Treatment	Registration / Treatment
Maximum	209.5	2444	129.5
Average	19.5	79	5.5
Median	10	40.5	2
Minimum	0	0	0
Mode	1	0	0
First Quartile	3.5	13.5	0
Third Quartile	28	82.5	4

Time interval between 1st consultation and 1st diagnosis; 1st diagnosis - start of treatment; 1st consultation and start of treatment.

The entry clinics with medians between registration and diagnosis with the longest time elapsed are general surgery with 38 days, plastic surgery with 31.2 days and chest surgery with 27.5 days and clinics with the most significant median between diagnosis and treatment, are in decreasing order: allergy / immunology (114) days, dermatology (106) days, plastic surgery (59.5) days, clinical oncology (49.5) days, clinical oncology (49.5) days, clinical oncology (49.5) days, clinical oncology (49.5) days, head and neck (43.5) days, thoracic surgery (37.5) days, mastology (36.2)) days, general surgery (31.7) days, gastroenterology (27.5) days, and gastrosurgery (24.5) days. (Table 13).

Table 13: Time interval (in days) elapsed, according to the median, between: 1st consultation-1st diagnosis; 1st diagnosis - start of treatment; 1st consultation and start of treatment, according to the clinic responsible for the 1st treatment.

Entrance Clinic	Median Registration / Diagnosis	Median Diagnosis / Treatment	Median Registration / Treatment
Allergy / Immunology	0	114	2
Head and neck	11	43.5	2
General surgery	38	31.7	20.2

Plastic surgery	31.2	59.5	17
Thoracic surgery	27.5	37.5	5.5
Dermatology	0	106	0
Gastrosurgery	18.5	24.5	3.5
Gastroenterology	6.5	27.5	2
Ginecologia	5.5	41	1
Clinical Hematology	4.5	2.5	4
Neurosurgery	7	15.2	2.7
Neurology	5.2	23	3
Clinical Oncology	14.7	49.5	1
Oncology Pediatrics	4.2	2.7	3.2
Orthopedics	3	0	3
Pneumology	8	10.2	7.2
Urology	11.5	61	1
Mastology	18.7	36.2	2
Not applicable	0	344	0
No information	4	19	4

IV DISCUSSION

The incidence and prevalence of cancer as a public health problem in Brazil and the State of Rondônia motivated the search to know the profile of women and men diagnosed with cancer treated at the Reference Hospital for Cancer Treatment in Rondôni. For that, we use a methodology that allows the documentary, transversal and retrospective search of systematized primary data, in order to allow the analysis of the epidemiological and sociodemographic aspects of the studied population, comprising the diagnosis of 2 (two) years.

The state of Rondônia is located in the Western Amazon (Northern Region of Brazil), with 1.777.225 inhabitants and comprises 52 municipalities [29]. The demand for patients at the referral cancer hospital in Rondônia is motivated by the assistance provided by this health unit specialized in cancer treatment - the largest cancer hospital in the Amazon, by the free services, the attention of the Unified Health System and also by the inability of the municipalities of origin of the patients and other states to offer similar care.

4.1 Sociodemographic Profile of Patients

This research revealed that 3.333 new cases of cancer diagnosed in the 2 years of study, women present 53.4% of the cases. Paraguassú-Chaves et al [22] recorded 53.8% relative incidence in women at the same study site.

The profile of the patients revealed a predominance in the age group between 45 to 69 years old (47.1%) in women and in the age group between 55 and 74 years old (54.5%) in men. In the study by Paraguassu-Chaves et al [25] there was a predominance of cancer in women 45 to 49 years old (11.7%), 50 to 54 years old (13.6%) and 55 to 59 years old (12.7), while in men the age group of onset between 55 and 59 years (14.6%), 60 to 64 years (14%), 65 to 69 years (12.2%), 70 to 74 years (12%) and extends to 75 to 79 years (11.3%).

It does not refer to the level of education, it is possible to observe, in general, low education, reaching 54.2% of the cases in illiterate patients, with incomplete elementary school and complete elementary school. Of 1.816 cancer cases analyzed, according to education level, 1,067 protocols were discarded due to lack of information. In another study, of the 749 cancer cases with correct completion of the protocol, 42% of the patients had incomplete elementary school, 18.9% completed elementary school and 21.3% are illiterate. It is concluded that most of the population with cancer has a low level of education [25].

Most patients were married (54.1%), with a predominance of patients with brown skin color (73.3%). According to the IBGE [30], in Rondônia the population with brown skin predominates (55.8%), accompanied by the population of white (35%), black (6.8%), yellow (1.4%) and indigenous (0.9%). Paraguassu-Chaves et al. [25] when studying the distribution of cancer according to skin color, found a predominance of brown skin color (46.9%), followed by white skin color with 21.6% and, in smaller proportions of cancer in patients with black (3.3%), yellow (0.6%) and indigenous (0.5%) skin color. Most patients are married and justified by the predominant age group of adults [31]. The brown color is predominant in the state of Rondônia and the one with the highest incidence of cancer, making up 64.4% of all registered neoplasms, followed by white with 19.5% and black with 3.0%. The indigenous population is present with 0.6% and yellow with 0.5% [25].

Patients born in Rondônia contributed 22.6% of the cases, where it can be seen that the majority of cases are in people born in other states in the country. Cancer was predominant in workers in the agricultural and agricultural activities (43.4%) of the cases. More than 40% of the inhabitants who live in Rondônia were born in other states of Brazil [31], [32]. The population of Rondônia is one of the most diversified in Brazil, composed of migrants from all regions of the country [31], [32], [33], [34]. Most of the migrants who live in Rondônia come from the Southeast and South regions of Brazil. In addition, there are migrants from the Northeast and Midwest regions [32]. The state of Rondônia also has the third largest foreign population in the North region [32].

The predominance of cancer in patients working in agriculture and farming activities is directly related to the economic activity of Rondônia. The economy of the state of Rondônia has as its main activities agriculture, livestock, food industry and plant and mineral extraction [35].

Sociodemographic aspects and their indicators allow us to know the characteristics of a specific population and its evolution over time in the territory. In the health sector, this information supports the decision-making process, since it helps in the knowledge about health conditions, mortality and morbidity, risk factors, population; gender ratio; population growth; fertility rate; crude birth rate, by age in children under one year; life expectancy at birth; aging index, demographic conditions among others [36], [37].

4.2 Epidemiological Profile of Patients

In this stage of the research, the distribution of cancer by primary tumor location is analyzed, according to sex. Among the 10 most common types of cancer in Rondônia, non-melanoma skin cancer (21.2%) and breast cancer (19.1%), stand out as the highest frequencies, followed by prostate cancer (14.7%), cervix (12.7%), stomach (8.7%), thyroid gland (5.6%), bronchi and lungs (5.2%), colon (5%), hematopoietic system reticuloendothelial (4.5%) and rectum (3.3%).

According to INCA [1], as for the year 2020 the incidence rates of 100 thousand inhabitants and the number of new cancer cases in Rondônia, according to sex and tumor location, reaches 1.530 new cancer cases in men and 1.560 in women.

The 10 highest frequencies in men are non-melanoma skin cancer (380), new cases, prostate (310), bronchi and lungs (110), stomach (80), colon and rectum (60), oral cavity (50), esophagus (40), central nervous system (40), leukemias (40) and larynx (30) new cases. In women, the most frequent estimates are non-melanoma skin cancer (600) new cases, breast (220), cervix (130), bronchi and lungs (70), colon and rectum (70), stomach (40), ovary (30), central nervous system (30), leukemias (30) and thyroid gland (20) new cases [1].

Study by Paraguassu-Chaves et al [25] found 10 most frequent neoplasms in women in the following order: breast cancer with 32.9% of cases, cervix (23.5%), stomach (5.9%), thyroid gland (4.5%), colon (4.5%), ovary (4.4%), rectum (4.2%) and cancer of the liver and hepatic bile ducts (3.2%). And, in males, the 10 most common neoplasms were: prostate cancer (33%), non-melanoma skin (22%), stomach (12%), bladder (5.2%), bronchi and lungs (5.2%), colon (4.8%), rectum (4.8%), esophagus (4.5%), liver and intrahepatic bile ducts (4.1%).

According to Bray et al [38] and Ferlay et al [14] of all diagnosed malignancies worldwide, non-melanoma skin cancer is the most common type in both sexes. According to INCA [1], they are more common in people with fair skin over 40, with exceptions in people already with skin diseases. However, this age profile has been changing with a constant exposure of young people to sunlight. Non-melanoma skin cancer is the most common tumor among men and women in Brazil [9]. Despite being the most frequent cancer, non-melanoma skin cancer is difficult to estimate, since not all cancer records are collected [1]. Despite the low lethality, however, its high incidence, may be the explanation for the occurrence of deaths from non-melanoma cancer, almost identical to melanoma skin cancer [10]. Non-melanoma skin cancer is curable in most cases. The main risk factor for melanoma and non-melanoma skin cancer is excessive exposure to ultraviolet (UV) solar radiation. Other factors, such as skin color, eyes and light hair; family or personal history of skin cancer; the immune system weakened by the disease or in transplant patients due to the use of immunosuppressants (azathioprine and cyclosporine), may increase the risk of

skin cancer [5], [9]. In addition, it is also important to highlight environmental and occupational factors. In Rondônia, skin cancer may be related to the main economic activities [25], [26], which involve the management of pesticides, agriculture, construction, health, fishing, plant and mineral extraction, among others [9].

Breast cancer (except non-melanoma skin cancer) is the most common tumor among women [1]. It is also the leading cause of cancer death among women. According to Stewart, Wild [4], although it has a higher death rate than other cancer (12.9 / 100 thousand), breast cancer has relatively low lethality, given that the mortality rate is less than a third of the incidence rate. According to INCA [1], the incidence trend has increased in most regions of the world. However, in highly advanced countries, the incidence has reached the least stability in the last decade with a downward trend.

Even in these countries, mortality rates have been on a downward trend since the late 1980s and early 1990s, reflecting a combination of improvements in early detection, through population screening and more efficient therapeutic interventions [4].

According to the American Cancer Society [5], INCA [10] and Stewart, Wild [4] multiple factors are involved in the etiology of breast cancer: age of first menstruation less than 12 years; menopause after 55 years; women who never got pregnant or never had children (nullity); first pregnancy after 30 years; use of some contraceptives and hormone replacement therapy (HRT) in menopause, especially for prolonged periods; exposure to ionizing radiation; consumption of alcoholic beverages; hypercaloric diets; sedentary lifestyle; and genetic predisposition (by mutations in certain genes transmitted in family genetic inheritance – mainly by two high-risk genes, BRCA1 and BRCA2). In low and middle income countries, breast cancer diagnosis occurs at more advanced stages of the disease. Morbidity increases when related to treatment, compromises quality of life and reduces patient survival [39].

Prostate cancer is a highly prevalent disease. It occupies the second position among malignant neoplasms that affect men, worldwide, behind lung cancer only [4]. In Brazil, it is the cancer with the highest incidence among men (except non-melanoma skin cancer) [40], [41], [42]. According to Ferlay et al [3], [12] the overall incidence rate can vary by more than 25 times. This can be attributed, according to [3], [12] in part, to screening strategies, carrying out a prostate specific antigen test (PSA) and subsequent biopsy, since it allows the identification of small tumors, latent or in early stages of growth.

In the study by Nakandi et al [43], higher mortality rates were observed in low-income countries when compared to high-income countries. And, according to Howlader et al [11], since it is a neoplasm with a good prognosis, the probability of five-year survival is over 80%, varying according to clinical, genetic, socioeconomic and environmental factors. Regarding the risk factors for prostate cancer, advanced age comprises a well-established risk factor, since incidence and mortality increase after 50 years of age. There are other important factors are attributed to prostate cancer. Chan, Stampfer, Giovannucci [44] and Sterwart, Wild [4] consider family history in the first degree (father, siblings or children) showing a positive association to increase the risk of developing this neoplasm.   Howlader et al [11], Nakandi et al [43] consider that skin color / ethnicity is relevant in the etiology of this type of cancer.

Cervical cancer is one of the most common cancers in the female population and is caused by persistent infection with some types of human papillomavirus (HPV) virus [1]. Genital infection with this virus is very common and does not cause disease most of the time. However, in some cases, cellular

changes occur that can progress to cancer. These changes are easily discovered in the preventive exam (also known as a Pap smear) and are curable in almost all cases [1]. There are several factors involved in the etiology of cervical cancer, but persistent HPV infections are the main causes. Among its 13 oncogenic types, HPV16 and HPV18 are the most common related to the occurrence of diseases. The onset of sexual activity at an early age increases exposure to the risk of HPV infection, in addition to immunosuppression, multiparity (having many children), smoking and prolonged use of oral contraceptives (estrogen) are factors associated with cervical cancer [4].

The worldwide estimate indicates that cervical cancer was the fourth most common worldwide, with an estimated 3.2% of new cases of all cancers. According to Ferlay et al [3], globally, most cases (70%) occur in areas with lower levels of human development. Almost nine out of ten cervical cancer deaths occur in less developed regions, where the risk of dying from cervical cancer before age 75 is three times greater. Despite its epidemiological importance, cervical cancer has a high cure potential when diagnosed in the early stages [9].

Of all cancers that occur in the world, stomach cancer ranks fifth [3]. Differences between genders are observed, being twice as frequent in men than in women. Corresponds to 8.5% of the total cancer in men, using a position in the ranking of the most common tumors when compared to the female sex (4.8%) [4]. Geographically, it is more frequent in countries with low or medium HDI [12], [17]. In relation to mortality, for both sexes, it becomes the third cause worldwide, with 8.8% of the total deaths. In Brazil, in 2015 alone, there were 9,132 deaths from stomach cancer in men and 5.132 in women [45]. Helicobacter Pylori infection comprises a cause more strongly associated with the risk of developing stomach cancer [46], [47], [4].

Other environmental factors include nutritional habits, such as diets rich in smoked foods or preserved in salt, obesity, alcohol and tobacco consumption. On the other hand, an intake of fruits and vegetables, cereals and seafood has been reported as a protective factor [4], [48]. Hereditary factors contribute to a lesser extent to the burden of this type of cancer, such as previous family history, around 2%. Just as the incidence can be affected by the development of the Region, the level of education seems to be associated with the risk; therefore, more advanced levels of education can be a protective factor [49], [50].

According to INCA [1] the most common histological types for thyroid cancer are differentiated carcinomas. Among them are papillary, follicular and Hürthle cells. Bray et al [38], Ferlay et al [14] and INCA [2] add that there are still poorly differentiated and undifferentiated carcinomas. According to Bray and collaborators [38] and Ferlay and collaborators [14] in 2018, there were 567 million new cases of thyroid cancer, or the equivalent of 3% of all estimated cancers that occupy the ninth position in the world. For these authors, predominantly, the cases are female with 11.5 new cases per 100 thousand, in which the incidence is higher than male sex with 3.4 new cases per 100 thousand) and in countries with high HDI.

In Brazil, in 2017, there were 279 deaths from thyroid cancer in men, this value corresponds to the risk of 0.28 / 100 thousand. In women, 526 deaths occurred, with a risk of 0.51 / 100 thousand [39]. For the American Cancer Society [7], INCA [1], Stewart, Wild [4], history of irradiation in the neck, low-dose radiation therapy (mainly in childhood), family history of thyroid cancer and low iodine diet are the

main risk factors for the development of the disease. According to Thun et al [51] other risk factors for the development of diseases are: obesity, smoking, hormonal exposure and environmental pollution.

In the world, lung cancer is among the main incidences, occupying the first position among men and the third position among women. According to INCA [1], the estimated total of new cases for this disease, in 2018, worldwide, represented 1.37 million new cases in men and 725 thousand new cases in women, corresponding to an estimated risk of 35.5/100 thousand men and 19.2 / 100 thousand women. In Brazil, in 2017, there were 16,137 deaths from lung cancer in men and 11,792 deaths in women, values that represent an estimated risk of 15.98 / 100 thousand men and 11.39 / 100 thousand women [1], [2]. Smoking and passive tobacco exposure are the main risk factors for the development of lung cancer. Eighty-five percent of diagnosed cases are associated with tobacco use [1].

According to the INCA [1], the most recent world estimate indicates that, in men, 1 million new cases of colon and rectal cancer occurred. It is the third most incident tumor among all cancers, with an estimated risk of 26.6 / 100 thousand. In women, there were 800 thousand new cases, ranking as the second most frequent tumor with an incidence rate of 21.8 / 100 thousand. Also according to the INCA [39] in terms of mortality, in Brazil, in 2017, there were 9.207 deaths from cervical and rectal cancer (9.12 / 100 thousand) in men and 9.660 (9.33 / 100 thousand) in women.

According to the American Cancer Society [7] and INCA [1], the main factors related to the increased risk of developing cervical and rectal cancer are: age 50 years or older, obesity, physical inactivity, prolonged smoking, high consumption of red or processed meat, low calcium intake, excessive alcohol consumption and poor diet in fruits and fibers. There are factors of hereditary origin that increase the risk, including family history of colorectal cancer and / or adenomatous polyps, some genetic conditions such as familial adenomatous polyposis and hereditary colorectal cancer without polyposis, history of chronic inflammatory bowel disease (ulcerative colitis or Crohn's disease) and type 2 diabetes; and factors such as occupational exposure to ionizing radiation.

Leukemia is a disease that affects blood cells and the main factor is the number of diseased cells in the bone marrow that replace normal blood cells. Leukemia occurs most frequently in adults over 55, but it is also the most common cancer in children under 15 [1]. There are more than 12 types of leukemia, the main four being: acute myeloid leukemia (MLA), chronic myeloid leukemia (CML), acute lymphocytic leukemia (ALL) and chronic lymphocytic leukemia (LLC). For Bray et al [38] and Ferlay et al. [14] a worldwide estimate shows that there were 249.000 new cases of leukemia, the tenth most incident tumor among all cancers, with an estimated risk of 6.5 / 100.000 men. In women, 187 thousand new cases were estimated, with an incidence rate of 5.0 / 100 thousand, occupying the twelfth position. According to INCA [39] in relation to mortality, in 2017, 4.795 deaths from leukemia occurred in Brazil with a mortality rate of 4.75 / 100 thousand men and 4.401 deaths with a crude rate of 4.25 / 100 thousand in women. According to INCA [1] the risk factors for leukemia are not yet well defined, but there is a suspicion of an association between risk factors with a greater chance of developing some types of disease, among them: smoking (AML); ionizing radiation (X-rays and gamma); chemotherapy – some classes of drugs used to treat cancer and autoimmune diseases (AML and ALL); occupational exposure to formaldehyde in industries (chemical, textile, among others); rubber production (leukemias); Down syndrome and other inherited diseases (AML);

myelodysplastic syndrome and other blood disorders (AML); family history; and, finally, exposure to pesticides, solvents and infection by hepatitis B and C viruses (leukemias) [1].

Non-Hodgkin's lymphoma is a type of cancer that originates in the lymphatic system. There are more than 20 different types of this cancer. Overall, the risk of illness increases as you get older [1]. Worldwide estimates show that approximately 510.000 new cases of non-Hodgkin's lymphoma have occurred, or the equivalent of 3% of the estimated total new cases. Of these, 285 thousand new cases occurred in men with an estimated risk of 7.4 per 100 thousand and, in women, there were 225 thousand new cases with an estimated risk of 5.9 per 100 thousand. In men, it ranks eighth among all estimated cancers and, in women, it ranks tenth. In terms of mortality, in Brazil, in 2017, there were 2,498 deaths from non-Hodgkin's lymphoma in men, with a risk of 2.47 / 100 thousand and, in women, 2.016 deaths, with a risk of 1.95 / 100 thousand [1]. For the American Cancer Society [7], among the main risk factors are people with an immunocompromised system, as a result of inherited genetic diseases or carriers of the human immunodeficiency virus infection (from english, human immunodeficiency vírus - HIV); patients using immunosuppressive drugs, with Epstein-Barr virus and Human T-Cell Lymphotropic Virus Type 1 (HTLV1), people with Helicobacter pylori bacteria, as well as some chemical substances (pesticides, ionizing and ultraviolet pollution).

In the present study, 99.5% of the patients admitted to the Hospital de Base Dr. Ary Pinheiro and / or Barretos / RO were notified by the Unified Health System - SUS. The National Cancer Prevention and Control Policy guarantees comprehensive care to any cancer patient, through the High Complexity Assistance Units in Oncology (UNACON) and the High Complexity Assistance Centers in Oncology (CACON) based on laws and specific Ordinance. In the State of Rondônia, the notifications made by RHC / NHE / HB at the Dr. Ary Pinheiro and Barretos Rondônia Base Hospitals cover almost 100% of the Unified Health System Program. 98.5% of cancer patients in Rondônia were diagnosed and admitted by the Unified Health System - SUS [25].

Clinical oncology represents 81.8% of all cancer patient entries and was responsible for 28% for the first visit and 67.2% of patients were diagnosed and received no treatments. Among the first procedures received by patients, "Other isolated therapeutic procedures" stands out, with a frequency of 44.4%. A negative highlight is that 27% of patients who did not receive any therapeutic treatment procedure. In the research by Paraguassu-Chaves et al [25], the oncology clinic recorded a higher relative value of patient entry with 89.5% of the sample universe and 52.2% of patients were diagnosed and did not receive treatment. Unlike the results of current research, Paraguassu-Chaves et al. [25] identified a gastroenterology clinic (22.5%), urology (17.5%), mastology (15.6%), dermatology (13.9%) and gynecology (13.8%) as responsible clinics By the entry of cancer patients.

We found in Rondônia 55.8% of patients diagnosed with the disease and without treatment in stages I, stage II, stage III and stage IV. Undiagnosed and untreated patients represent 13% of all patients in the four stages of the disease. Ninety-two percent of the patients had their diagnosis confirmed by histological examination of the primary tumor and in 99.96% a single primary tumor was found. From the topographies of occurrence of the 1st metastasis, there was a predominance of liver cancer and intrahepatic biliary tract with (25%, bronchi and lungs with (23.1%) and bones, joints and articular cartilages with members of 23.1% of the cases. Paraguassu-Chaves et al [25], [26] corroborate these results. Of the patients

who stopped treating the disease, 83.1% used some kind of excuse for not treating it. And those under treatment, the state of the disease at the end of the 1st treatment represents 73.7% of the disease in progress. Paraguassu-Chaves et al. [25], [26] em pesquisas no mesmo local e com pacientes com câncer em Rondônia, encontraram resultados muito próximos desses. In the same way that they confirm the findings related to the median between the 1st consultation and the 1st diagnosis; the 1st diagnosis and the start of treatment; the 1st consultation and start of treatment, according to the clinic responsible for the patient's first care.

V. CONCLUSIONS

In 2 (two) years, 3.333 new cases of cancer were diagnosed in Rondônia. Of these, 1.781 (53.4%) were female and 1.552 (46.5%) were male.

The age group with the highest incidence of women and men occurs between 50 and 69 years (46.5%). The level of education predominated at the incomplete and complete elementary level and illiterate with 71.3%. Higher frequency of married patients 54.1%, predominance of brown skin, born in the state of Rondônia (22.6%) and predominance of workers in agricultural activities.

The most common types of cancer in men and women were non-melanoma skin cancer (C44), breast (C50), prostate (C61), cervix (C53), stomach (C16), thyroid gland (C73), bronchi and lungs (C33-C34), reticuloendothelial hematopoietic system (C18), colon (C42) and cancer of the rectum (C20).

In women, breast cancer (32.2%), cervix (21.5%) and non-melanoma skin (17.3%) stand out as the highest incidences. In men, prostate cancer (30.9%), non-melanoma skin cancer (22.9%) and stomach (11.7%) are the most prevalent.   These results follow relatively the cancer estimates in Brazil.

Through the Unified Health System - SUS, 99.5% of patients were admitted, showing the importance of the public health system for cancer treatment in Rondônia. The oncology clinic also stands out, as it is responsible for 81.8% of all entries for cancer patients and also responsible for 28% of the first patient care.

67.3% of patients were diagnosed and failed to undergo treatment. Of the patients undergoing treatment, 44.4% received other isolated therapeutic procedures, 27% did not receive any therapeutic procedure, 15.2% underwent surgery and 6% underwent chemotherapy. A similar situation was found by Paraguassu-Chaves et al   [25], [26].

In the three diagnostic categories, there was a predominance in stages III and IV of the disease. The absolute majority of patients (92%) had their diagnosis confirmed by histological examination of the primary tumor. The single primary tumor was found in 99.9% of the patients, and from the topographies of occurrence of the 1st metastasis, there was a predominance in liver cancer and intrahepatic biliary tract (25%), bronchi and lungs (23.1%), bones, joints and joint cartilage of the limbs (23.1%) and meninges (11.5%). One hundred and one patients did not treat the disease for any reason. After the first treatment, 73.7% of patients had the disease in progress, with 6.7% of deaths. These results are similar to those found in previous research in Rondônia. The time interval (in days) elapsed, between the 1st consultation and the 1st diagnosis; the 1st diagnosis and the start of treatment; the 1st consultation and start of treatment, according to the clinic responsible for the first service, varies according to the medical clinic and depends

on the type of cancer. In general, the median time between the beginning and the end of the first consultation process and the start of treatment is in line with those found previously.

Estimates of cancer in Rondônia follow an increasing trend. The scenarios constructed from the variables of the sociodemographic and epidemiological indicators of the research demand from the public health authorities of Rondônia, an urgent redirection of the actions and strategies of prevention, control, assistance and treatment of cancer.

We believe that the systematization of these data is essential for the planning, execution and actions of promotion, prevention, control and treatment of cancer in Rondônia, as well as for the establishment of public health policies, in particular, cancer as a public health problem in Rondônia State.

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