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CANCER IN MEN: A STUDY WITH PATIENTS SEEN AT A HOSPITAL IN THE CITY OF PORTO VELHO, 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; [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.

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**Corresponding author:* *Carlos Alberto Paraguassu-Chaves*

ABSTRACT

Objective**:** to analyze the sociodemographic and clinical profile of men with cancer treated at a hospital in the city of Porto Velho, Rondônia, Western Amazon (Brazil), in a period equivalent to 1 (one) year. ***Materials and Methods:*** It is a documentary, quantitative, transversal and descriptive study, based on the raw data produced and sectorized, according to the methodological model recommended by Paraguassú-Chaves et al [6]. A semi-structured instrument developed by Paraguassú-Chaves [7] was used, divided into two blocks with a series of variables: (a) Block I - sociodemographic profile of men with cancer and (b) Block II - clinical profile of men with cancer. ***Results***: Block I - Age is one of the most important risk factors for cancer in men, with a predominance of brown skin color, low level of education, married people, smokers and those who use alcohol. The predominant work activity is agriculture, people born in Rondônia, Paraná, Minas Gerais and São Paulo are the majority and only 4 municipalities in Rondônia are responsible for 58.4% of all cancers. Block II - Prostate cancer is more common with 33.9% relative frequency, followed by non-melanone skin cancer, with 22.2% and stomach cancer, with 11.4%. Colon cancer (5.3%), bronchi and lungs (4.9%), kidney (4.9%), bladder (4.5%), esophagus (4.5%), liver (4.3%) and rectal (4.1%) fill in a list of the 10 types of cancer with the highest relative frequency. Among the types of treatment and therapeutic procedures, "Other isolated therapeutic procedures" prevailed, with 47.8% of the 1st treatment received. 34.6% of men with cancer have a family history of cancer and 9% of men diagnosed with cancer in Rondônia died of the disease. ***Conclusions*****:** The estimates and scenarios of cancer in Brazil do not differ much from those found in this study. The results presented are close to the data of most studies carried out by Paraguassú-Chaves et al [5], [6], [7], [11] and [19] in Rondônia. The Cancer Registry Information System regarding the collection, registration, information and monitoring of patients diagnosed with cancer, despite the efforts of the teams of hospital professionals, is still very deficient. At least what is expected is that this work will serve as a reference for planning, executing and evaluating actions to promote, prevent, control and treat cancer within the scope of public health policies.

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INTRODUÇÃO

Cancer is the main public health problem in the world [1]. Cancer incidence and mortality are increasing worldwide, partly due to aging, population growth, as well as changes in the distribution and prevalence of cancer risk factors, especially those associated with socioeconomic development. These global demographic and epidemiological transitions signal an increasing impact of cancer cases in the coming decades [2],

[3]. The most recent world estimate, year 2018, points out that 18 million new cases of cancer occurred worldwide (17 million not counting cases of non-melanoma skin cancer) and 9.6 million deaths (9.5 million excluding cancers of non-melanoma skin) [1]. Lung cancer is the most prevalent in the world (2.1 million) followed by breast cancer (2.1 million), colon and rectum (1.8 million) and prostate (1.3 million). The incidence in men (9.5 million) represents 53% of new cases, slightly higher than in women, with 8.6 million (47%) of new cases. The most common types of cancer in men were lung cancer (14.5%), prostate cancer (13.5%), colon and rectum (10.9%), stomach (7.2%) and liver (6.3%) [4]. The adjusted incidence rate, without considering non-melanoma skin cancer, was 15% higher in men (204.7 per 100 thousand), varying between different regions of the world. In countries with the highest Human Development Index (HDI), incidence rates were two to three times higher than in countries with medium or low HDI. In men, lung and prostate cancers had the highest rates, regardless of the HDI. Shortly thereafter, colon and rectal cancer is presented for countries with high HDI and lip / oral cavity cancers in medium and low HDI countries, especially due to the high impact of this type of cancer in India [4]. According to INCA [1] for Brazil, the estimate for each year of the 2020-2022 triennium points out that there will be 625 thousand new cases of cancer (450 thousand, excluding cases of non-melanoma skin cancer). 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). The most common types of cancer in men, with the exception of non-melanoma skin cancer, will be prostate (29.2%), colon and rectum (9.1%), lung (7.9%), stomach (5.9%) and oral cavity (5%).

According to INCA [1] the age-adjusted incidence rate, with the exception of non-melanoma skin cancer, in men (215.86 / 100 thousand) is considered intermediate and compatible with those presented for developing countries. Prostate cancer has the highest adjusted rates for all geographic regions of Brazil. Estimates for the year 2020 of incidence rates per 100 inhabitants and the number of new cases of cancer in men (except for non-melanoma skin cancer), according to the primary location of the malignant neoplasm in the Northern Region of Brazil, where the State Rondônia is located geographically, it points in decreasing order to the following types of cancer: prostate 2.770 new cases (28.7), stomach 1.110 new cases (11.5), trachea, bronchus and lung 870 new cases (9.0%), colon and rectum 490 new cases (5.1), leukemia 410 cases new (4.2), oral cavity 340 new cases (3.5), central nervous system 300 new cases (3.1), esophagus 250 new cases (2.6), larynx 240 new cases (2.5) and non-Hodgkin's lymphoma 210 new cases (2.2) [1].

In Rondônia, the estimates for the year 2020 of incidence rates per 100 thousand inhabitants and the number of new cases of cancer in men (except for non-melanoma skin cancer), according to the primary location of the malignancy, obey the following descending order: prostate 310 new cases (32.40), trachea, bronchus and lung 110 new cases (11.85), stomach 80 new cases (8.90), colon and rectum 60 new cases (6.36), oral cavity 50 new cases (5.71), leukemia 40 new cases (4.61), esophagus 40 new cases (4.52), central nervous system 40 new cases (4.26), larynx 30 new cases (3.28), Bladder 30 new cases (2.86) and non-Hodgkin's lymphoma 20 new cases (2.46) [1].

Epidemiological and clinical studies on cancer in Rondônia and the Brazilian Amazon are still scarce. Few references are known to this set of disease that presents itself in a public health problem scenario for the population living in this Region of Brazil. The work by Paraguassu-Chaves et al [5] "Epidemiological profile of Rondônia", Paraguassu-Chaves et al [6] "Epidemiological profile of cancer in Rondônia: Brazilian Amazon", Paraguassu-Chaves *et al.,* [7] "Epidemiology of cancer in Rondônia", Paraguassu-Chaves [8] "Cancer in women in Rondônia: study of medical geography", Paraguassú-Chaves et al [9] "Histological frequency analysis and pediatric cancer in Rondônia, Western Amazon (Brazil)", Paraguassu-Chaves et al [10] "Analysis of the frequency of pediatric cancer in the Western Amazon (Brazil): the case of Rondônia" and Paraguassu-Chaves *et al.,* [11] “Socio demographic and clinical profile of women from Rondônia, Western Amazon (Brazil), diagnosed with the main types of cancer”, are the results of the efforts of a group of researchers under the coordination of Paraguassu-Chaves, dedicated to knowledge and dissemination of the situation of the cancer in the western Brazilian Amazon.

In the Amazon scenario, resources and efforts must be directed to guide cancer prevention and control strategies at all levels (health promotion, early detection, patient care, surveillance of cancer and its risk factors, training of resources communication and social mobilization, research and management of the Unified Health System - SUS). According to Guerra, Moura, Mendonça [12] and INCA [13], quality information on incidence, mortality and survival of population groups will allow a better understanding of their determinants, contributing to the formulation of causal hypotheses and evaluation of the technology applied to prevention and disease treatment. For research carried out in Rondônia, the Hospital Cancer Registry (RHC) represents a tool of extreme magnitude for the knowledge and monitoring of cancer morbidity and mortality and which can provide the hospital staff and management with information on the frequency and possible trends of the most varied types of cancer diagnosed and / or treated at the health unit and estimated survival of patients.

In Rondônia, a Unit of Assistance to High Complexity - UNACON was implanted in the Hospital de Base Dr. Ary Pinheiro, in Porto Velho, with the objective of investigating and cataloging the data to support the Hospital Cancer Registry Information System - SISRHC / INCA, as systematic sources of information from the medical record regarding the registration and monitoring of admitted cases, assessing the extent, quality of survival and, indirectly, the quality of care provided at the institution. In recent years, health situation analysis procedures have been systematically incorporated into the routine of health organizations, allowing the improvement of decision-making practices [14], [15], [16]. Consequently, the practice of health research, a fundamental aspect in the improvement of health systems and policies, is a determining factor in the development of the Brazilian nation. Health, and health research, are urgent needs of our developing Brazil, and in particular of the Amazon region. Given this context and in an effort to learn a little more about the behavior of cancer in Rondônia, the objective of this study was to analyze the sociodemographic and clinical profile of men with cancer treated at a hospital in the city of Porto Velho, Rondônia, Amazonia Western (Brazil), in a period equivalent to 1 (one) year.

MATERIALS AND METHODS

Study Type: It is a documentary, quantitative, transversal and descriptive study, based on the raw data produced and sectorized, according to the methodological model recommended by Paraguassú-Chaves et al. [6]. The official data were organized by the Núcleo Hospitalar de Epidemiologia - NHE of the largest public reference hospital in the state of Rondônia.

Model of Semi-structured Instrument Paraguassú-Chaves [7]: A semi-structured instrument developed by Paraguassu-Chaves [7] was adopted, divided into two blocks: (a) Block I – Sociodemographic profile of men with cancer in Rondônia, with the following variables: distribution of the 10 main neoplasms by age; distribution of thr 10 main neoplasms by ethnicity / color; distribution of the 10 main neoplasms by educational level; distribution of the 10 main neoplasms by marital status; distribution of the main neoplasms due to smoking; distribution of the 10 main neoplasms due to alcoholism; distribution of the 10 main neoplasms by occupation; distribution of the 10 main neoplasms by origino f birth and distribution of the 10 main neoplasms by municipality of origin in the State of Rondônia. (b) Block II – Clinical profile of men with cancer in Rondônia, with the following variables: proportional distribution of the 10 most common neoplasms in men; distribution of the 10 main neoplasms by type of treatment; distribution of the 10 main neoplasms by family history of cancer; and distribution of the 10 main neoplasms due to death / cancer.

Sampling Number: The research was carried out with the sample database of 490 men diagnosed with cancer in Rondônia, corresponding to a period of 1 (one) year.

Inclusion and exclusion criteria: The sample number corresponds to practically 100% of the protocols available. Only some data without information or with inconsistent filling were excluded.

***Ethical Aspects*:** The research is in accordance with Resolution No. 196 of the National Health Council of Brazil (CNS). As this is a research with a database, the Human Research Ethics Committee was asked to waive the Informed Consent Term, considering that 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.

RESULTS

The study has a sample universe of 490 male patients, seen at a cancer reference hospital in the State of Rondônia, Brazilian Amazon, for a period of 1 (one) year.

Block 1: Sociodemographic profile of men with cancer in rondônia

Sociodemographic profile of men diagnosed with cancer among the 10 main neoplasms in Rondônia: Age is still one of the most important risk factors for cancer in men. Incidence rates rise rapidly after age 40. In Rondônia, the age group of cancer in the age group of 50 to 79 years old reaches 77% of the 10 main types of cancer in men, with respectively 24.7% (age between 50 and 59 years), 28% (between 60 and 69 years) and 24.4% (between 70 and 79 years).

Prostate cancer has a high frequency in the age group of 50 to 59 years, with 30 new cases (18.1%), 64 (38.6%) new cases (age 60 to 69 years) and 54 (32.5%) new cases (age 70 years). Non-melanoma skin cancer is the second most common in men with 30 (27.5%) new cases (60 to 69 years), 64 (58.7%) new cases (70 to 79 years) and 54 (49.5%) new cases (over 80 years). Stomach cancer is more common in men over 40 years of age. Stomach cancer has a frequency of 16.1% (between 40 and 49 years), 19.4% (between 50 and 59 years), 28.6% (between 60 and 69 years) and 26.8% (age between 70 and 79 years). Colon cancer has a high incidence in the 30 to 39 age group (15.4%), reaching its highest frequency (23.1%) in the 50 to 59 age group. Colon cancer has a high incidence in the age group of 30 to 39 years (15.4%), reaching its highest incidence (23.1%) in the age group of 50 to 59 years, remaining in high incidence (19.2%) in the 60 to 69 age group and (15.4%) between 70 and 79 years. Bronchial and lung cancer in men is more prevalent in the age group of 60 to 69 years (45.8%), with a significant occurrence also in the age groups of 50 to 59 years (20.8%) and 70 to 79 years (16.7%). Kidney cancer is concentrated in the average age group 29.2% in the age group 40 to 49 years and 25% in the age group 50 to 59 years. Bladder cancer maintains an average of 21.3% of the age group from 50 years old to over 80 years old, distributed in the following order, 27.3% (50 to 59 years old), 18.2% (60 to 69 years old), 27.3% (70 to 79 years) and 18.2% in patients over the age of 80 years, while esophageal cancer concentrates the highest incidence of the 50 to 59 years old age group (27.3%) and 70 to 79 years old (27.3%). Liver cancer and intrahepatic bile ducts are concentrated in the age group of 50 to 59 years (55%) and rectal cancer in two age groups, 25% (40 to 49 years) and 30% (between 60 to 69 years old). (Table 1).
One hundred and five (105) (ignored) cases were excluded due to inconsistency in the patient's medical record, that is, 21.4% of the 10 main types of cancer in men related by ethnicity / color. This is a reflection of the failure in the health information system in Brazil. Therefore, the analysis of the distribution of the 10 main neoplasms in men considered only the medical records correctly filled in all mandatory fields. Table 2 shows the distribution of the 10 main neoplasms in men in the State of Rondônia by Ethnicit / Color. Neoplasms diagnosed in brown (64.2%) and white (28.3%) men are more frequent than in other ethnicities, such as: black, yellow and indigenous. Of the 10 main types of cancer in men, brown color predominated, in the following decreasing order: kidney (73.7%), esophagus (73.7%), colon (68.4%), stomach (66.7%), non-melanoma skin (65.9%), prostate (62.8%), bronchi and lungs (62.5%), rectal cancer (62.5%) and liver (61.5%). The only exception was bladder cancer, which predominated in white people (47.4%). (Table 2).

Two hundred and fifty-six (256) cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 52% of the 10 main types of cancer in men related to educational level were disregarded. Once again, the health information system in Brazil demonstrates failures caused by the carelessness of health professionals who do not correctly complete medical and hospital records. Therefore, the analysis of the distribution of the 10 main neoplasms in men considered only the medical records correctly filled in all mandatory fields.The education of men diagnosed with cancer is 26.1% illiterate, 44% with incomplete primary education, 15% with complete primary education, 13.2% with secondary education and 1.7% with complete higher education.

It is possible to identify that the cancer rate in men with less education is much higher than the cases diagnosed in men with more education. Understanding this information is an effective way to prevent and treat disease. Prostate cancer concentrates its highest incidence in patients with low education (81.1%), thus distributed by level of education, 21.2% illiterate, 42.3% incomplete elementary school and 17.6% complete elementary school, as table 3. The same situation occurs with non-melanoma skin cancer (72.2%) of patients with low education, distributed as follows, 25% illiterate and 47.7% of patients with incomplete primary education. In this same trend of low schooling, stomach cancer patients with 42.8% illiterate and 37.1% of patients with incomplete elementary education. In patients with bronchial and lung cancer, 46.7% were illiterate and 46.7% with incomplete primary education. They remain in the same condition as patients with low schooling, patients with esophageal cancer with 30% illiterate and 50% with incomplete elementary school, colon cancer with 44.4% incomplete elementary school and 33.3% with complete elementary school, cancer of bladder with 60% of patients with incomplete elementary school and kidney cancer with 55.5% of patients with incomplete elementary school. Fifty percent of liver cancer patients have completed elementary school and 36.4% of rectal cancer patients have completed high school. (Table 3).

Two hundred and twenty-three (223) cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 45.5% of the 10 main types of cancer in men related to men by marital status. The analysis of the distribution of the 10 main neoplasms in men considered only the medical records correctly filled in all mandatory fields. The distribution of the 10 main types of cancer in men shows that married people have the highest frequencies (74.9%). According to the marital status of each patient, it is possible to notice a difference between the diagnoses of cancer in married men when compared to single men and other conjugated states. The highest frequencies of cancer in men were found in married men, without exception, distributed as follows: rectal cancer (90%), kidney (87.5%), esophagus (80%), prostate (77.2%), non-melanoma skin (76.4%), colon (75%), stomach (73.7%), liver (66.7%), bronchi and lungs (60%) and bladder (60%). (Table 4). One hundred and twenty-four cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 25% of all new smoking-related cancer cases were discarded. The relative incidence of men who declared smokers was 18.6% and 15.3% ex-smokers. 50% of patients with esophageal cancer are smokers and 25% ex-smokers, while patients with bronchial and lung cancer 28.6% are smokers and 47.6% are ex-smokers. Liver cancer also has a very high frequency of smokers (33.3%) and ex-smokers (33.3%), stomach cancer 23.4% smokers and 21.3% ex-smokers, colon cancer (22.7%) smokers and (18.2%) ex-smokers, bladder with 16.7% smokers and 22.2% ex-smokers and rectal cancer with 15.4% smokers. 15.5% of patients with prostate cancer are smokers and 4.6% are ex-smokers, with kidney cancer (11.1%) are smokers and 5.5% are ex-smokers. (Table 5). One hundred and twenty-five cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 26% of the 10 main types of cancer in men related to alcohol consumption were discarded. According to table 6, considering all types of cancer in men, alcoholism tends to be a determining factor for cancer in men in the state of Rondônia.Of the men diagnosed with cancer, 17.5% use alcoholic beverages and 12.9% are ex-consumers. The frequency of men who have never consumed alcoholic beverages is 69.6%. As a negative aspect, there are men diagnosed with cancer who consume alcoholic beverages, distributed in decreasing order: esophageal cancer (35.3%), bronchi and lungs (27.8%), liver cancer (26.7%), colon (23.8%), stomach (23.4%), kidney (15.8%), prostate (14.7%) and non-melanoma skin (11.8%). (Table 6).

Three hundred and twenty-nine (329) cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 67% of the 10 main types of cancer in related men, by occupation, were discarded.Men working in agriculture represent 67.7% of the cases diagnosed with cancer, followed by men occupying the occupations of commerce, banks, transport and others with 26.7%, public agent with 1.9% and independent professional, teacher or technical with 1.9%. The proportional distribution of cancer in men by occupational activity is very well defined with agricultural activity, where cancer of the bronchi and lungs (88.9%), bladder and esophagus with (80%) each, prostate and kidney (66.7%) each, non-melanoma skin cancer (63.3%), colon (30%) and liver (55.5%) are the most frequent. Among men working in commerce, banks, transportation and others, colon cancer (50%), rectal cancer (50%), liver (44.5%), stomach, kidneys and non-melanoma skin (33.3%) each, and prostate cancer with 16.4%**,** are the most frequent. (Table 7).

Thirty-two (32) cases were excluded (ignored) due to inconsistency in the patient's medical record of the 10 main types of cancer in related men, by origin of birth. Patients born in the State of Rondônia are predominant and contributed with 69 new cases (15.5%), followed by patients born in the State of Paraná (South Region) with 59 new cases (13.2%), in the State of Minas Gerais (Southeast Region) with 52 new cases (11.6%), and the State of São Paulo (Southeast Region) with 49 new cases (11%). Patients born in other states in Brazil correspond to 48.7%. Patients born in Rondônia represent 10% of patients diagnosed with prostate cancer, 14% with non-melanoma skin cancer, 19.4% with stomach cancer, 18.7% with colon cancer, 37.5% with cancer of kidney, 20.8% esophageal cancer, liver and rectal cancer, respectively. Excluding Rondônia and those born in the states of Paraná, Minas Gerais and São Paulo, the other Brazilian states add up to the relative frequency of 50% of cancers of the prostate, non-melanoma skin, stomach, colon, bronchi and lungs, kidney, bladder, esophagus, liver and rectal cancer. (Table 8).From a sample universe of 490 patients (new cases of cancer), the city of Porto Velho is responsible for 40.8% (200) cases of all patients among the 10 main neoplasms in Rondônia. Adding to the municipalities of Vilhena, Ariquemes and Ji-Paraná, the relative frequency reaches 58.4%. The remaining 48 municipalities in Rondônia, together, reach a relative frequency of 41.6% of cancer cases. The municipality of Porto Velho accounts for 66.7% of all cases of kidney cancer (54.5%), esophageal cancer (54.5%), liver cancer (52.4%), bladder cancer (50%), colon cancer (46.1%), stomach cancer (41.1%), prostate cancer (37.9%), non-melanoma skin cancer (36.7%), rectal cancer (30%) and bronchi and lungs (25%) of new cases. (Table 9).

Table 1: Distribution of the 10 main neoplasms of men in the State of Rondônia by age at diagnosis of cancer

Age Range Cancer Diagnosis	<29 years	30 – 39	40 – 49	50 – 59	60 – 69	70 – 79	> 80 years	Ignored	Fa*
Prostate	0	3	3	30	64	54	11	1	**166**
Non-melanoma skin	4	4	18	35	19	24	5	0	**109**
Stomach	0	3	9	11	16	15	2	0	**56**
Colon	1	4	5	6	5	4	1	0	**26**
Bronchi and lungs	0	0	3	5	11	4	1	0	**24**
Kidney	3	2	7	6	1	3	2	0	**24**
Bladder	1	0	1	6	4	6	4	0	**22**
Esophagus	0	0	2	9	7	4	0	0	**22**
Liver	0	0	2	11	4	3	1	0	**21**
Rectal cancer	1	2	5	2	6	2	2	0	**20**
Fa*	**10**	**18**	**55**	**121**	**137**	**119**	**29**	**1**	**490**
Fr%	**2.0**	**3.7**	**11.2**	**24.7**	**28.0**	**24.3**	**5.9**	**0.2**	**100**

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

Table 2: Distribution of the 10 main neoplasms in men, by ethnicity / color

Ethnicity / Color	Brown	White	Black	Yellow	Indigenous	Fa*
Prostate	86	41	10	0	0	**137**
Non-melanoma skin	56	24	5	0	0	**85**
Stomach	28	8	5	0	1	**42**
Colon	13	4	2	0	0	**19**
Bronchi and lungs	10	5	0	1	0	**16**
Kidney	14	3	2	0	0	**19**
Bladder	8	9	1	1	0	**19**
Esophagus	14	4	1	0	0	**19**
Liver	8	5	0	0	0	**13**
Rectal cancer	10	6	0	0	0	**16**
Fa*	**247**	**109**	**26**	**2**	**1**	**385**
Fr%	**64.2**	**28.3**	**6.8**	**0.5**	**0.2**	**100**

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

Table 3: Distribution of the 10 main neoplasms in men by level of education.

Degree of Education	Illiterate	Incomplete elementary school	Complete elementary school	Complete high school	Graduated	Fa*
Prostate	18	36	15	14	2	**85**
Non-melanoma skin	11	21	6	5	1	**44**
Stomach	15	13	3	3	1	**35**
Colon	1	4	3	1	0	**9**
Bronchi and lungs	7	7	1	0	0	**15**
Kidney	1	5	2	1	0	**9**
Bladder	2	6	0	2	0	**10**
Esophagus	3	5	1	1	0	**10**
Liver	1	2	3	0	0	**6**
Rectal cancer	2	4	1	4	0	**11**
Fa*	**61**	**103**	**35**	**31**	**4**	**234**
Fr %	**26.1**	**44.0**	**15.0**	**13.2**	**1.7**	**100**

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

Table 4: Distribution of the 10 main neoplasms in men by conjugal status

Marital Status	Married	Single	Widowed	Separated / Divorced	Consensual Union	Fa*
Prostate	71	6	10	3	2	**92**
Non-melanoma skin	42	7	3	1	2	**55**
Stomach	28	4	3	0	3	**38**
Colon	9	2	1	0	0	**12**
Bronchi and lungs	12	4	2	1	1	**20**
Kidney	7	1	0	0	0	**8**
Bladder	6	1	1	2	0	**10**
Esophagus	8	0	0	1	1	**10**
Liver	8	3	0	1	0	**12**
Rectal cancer	9	0	0	0	1	**10**
Fa*	**200**	**28**	**21**	**8**	**10**	**267**
Fr%	**74.9**	**10.5**	**7.9**	**3.0**	**3.7**	**100**

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

Table 5: Distribution of the 10 main neoplasms in men by smoking.

Smoking	Yes	Ex-consumer	Never	Fa*
Prostate	20	6	103	**129**
Non-melanoma skin	6	11	50	**67**
Stomach	11	10	26	**47**
Colon	5	4	13	**22**
Bronchi and lungs	6	10	5	**21**
Kidney	2	1	15	**18**
Bladder	3	4	11	**18**
Esophagus	8	4	4	**16**
Liver	5	5	5	**15**
Rectal cancer	2	1	10	**13**
Fa*	**68**	**56**	**242**	**366**
Fr%	**18.6**	**15.3**	**66.1**	**100**

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

Table 6: Distribution of the 10 main neoplasms in men due to alcoholism

Alcoholism	Yes	Ex-Consumer	Never	Fa*
Prostate	19	4	106	**129**
Non-melanoma skin	8	12	48	**68**
Stomach	11	8	28	**47**
Colon	5	3	13	**21**
Bronchi and lungs	5	6	7	**18**
Kidney	3	3	13	**19**
Bladder	2	4	11	**17**
Esophagus	6	3	8	**17**
Liver	4	2	9	**15**
Rectal cancer	1	2	11	**14**
Fa*	**64**	**47**	**254**	**365**
Fr%	**17.5**	**12.9**	**69.6**	**100**

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

Table 7: Distribution of the 10 main neoplasms in men, by occupation

Professional occupation / Cancer	Agriculture	Industry	Commerce, Bank, Transport and Others	Public agent	Independent Professional, teacher or technician	Works at Home	Fa*
Prostate	42	1	9	1	2	0	**55**
Non-melanoma skin	19	0	10	0	1	0	**30**
Stomach	16	0	8	0	0	0	**24**
Colon	3	0	5	1	0	1	**10**
Bronchi and lungs	8	0	1	0	0	0	**9**
Kidney	2	0	1	0	0	0	**3**
Bladder	8	0	1	0	0	1	**10**
Esophagus	4	0	1	0	0	0	**5**
Liver	5	0	4	0	0	0	**9**
Rectal cancer	2	0	3	1	0	0	**6**
Fa*	**109**	**1**	**43**	**3**	**3**	**2**	**161**
Fr%	**67.7**	**0.6**	**26.7**	**1.9**	**1.9**	**1.2**	**100**

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

Table 8: Distribution of the 10 main neoplasms in men by birth origin

Birth Origin	Rondônia	Paraná	Minas Gerais	São Paulo	Other states	Fa*
Prostate	14	15	20	21	70	**140**
Non-melanoma skin	16	19	9	13	57	**114**
Stomach	7	3	4	4	18	**36**
Colon	6	6	2	2	16	**32**
Bronchi and lungs	2	5	6	0	13	**26**
Kidney	9	1	1	1	12	**24**
Bladder	0	1	3	3	7	**14**
Esophagus	5	4	2	1	12	**24**
Liver	5	3	4	0	12	**24**
Rectal cancer	5	2	1	4	12	**24**
Fa*	**69**	**59**	**52**	**49**	**229**	**458**
Fr%	**15.5**	**13.2**	**11.6**	**11.0**	**48.7**	**100**

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

Table 9: Distribution of the 10 main neoplasms in men by municipality of origin in the State of Rondônia

Municipality of origin in Rondônia	Porto Velho	Vilhena	Ariquemes	Ji-Paraná	Another 48 municipalities	Fa*
Prostate	63	9	5	8	81	**166**
Non-melanoma skin	40	4	13	7	45	**109**
Stomach	23	3	5	2	23	**56**
Colon	12	1	3	2	8	**26**
Bronchi and lungs	6	1	2	2	13	**24**
Kidney	16	0	0	1	7	**24**
Bladder	11	2	1	3	5	**22**
Esophagus	12	0	1	3	6	**22**
Liver	11	0	1	1	8	**21**
Rectal cancer	6	3	1	2	8	**20**
Fa*	**200**	**23**	**32**	**31**	**204**	**490**
Fr%	**40.8**	**4.7**	**6.5**	**6.4**	**41.6**	**100**

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

Table 10: Proportional distribution of the 10 most frequent neoplasms in men

Primary Tumor Location	Fa*	Fr%
Prostate	166	33.9
Non-melanoma skin	109	22.2
Stomach	56	11.4
Colon	26	5.3
Bronchi and lungs	24	4.9
Kidney	24	4.9
Bladder	22	4.5
Esophagus	22	4.5
Liver	21	4.3
Rectal cancer	20	4.1
TOTAL	**490**	**100%**

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

Table 11: Distribution of the 10 main neoplasms in men by type of treatment

Treatment Type	Surgery	Chemotherapy	Radiotherapy	Other therapeutic procedures	No treatment	Ignored	Fa*
Prostate	20	5	3	90	48	0	**166**
Non-melanoma skin	25	7	0	41	35	1	**109**
Stomach	12	2	0	30	12	0	**56**
Colon	8	1	1	9	7	0	**26**
Bronchi and lungs	2	5	1	11	5	0	**24**
Kidney	6	1	2	14	1	0	**24**
Bladder	8	0	0	8	6	0	**22**
Esophagus	1	2	1	8	10	0	**22**
Liver	3	1	0	14	3	0	**21**
Rectal cancer	4	0	0	9	7	0	**20**
Fa*	**89**	**24**	**8**	**234**	**134**	**1**	**490**
Fr%	**18.2**	**4.9**	**1.6**	**47.8**	**27.3**	**0.2**	**100**

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

Table 12: Distribution of the 10 main neoplasms in men by family cancer history

Family Cancer History	Yes	Not	Fa*
Prostate	35	95	130
Non-melanoma skin	17	52	69
Stomach	21	23	44
Colon	9	11	20
Bronchi and lungs	6	8	14
Kidney	4	14	18
Bladder	5	8	13
Esophagus	10	5	15
Liver	7	7	14
Rectal cancer	8	8	16
Fa*	**122**	**231**	**353**
Fr%	**34.6**	**65.4**	**100**

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

Table 13: Distribution of the 10 main neoplasms in men by death / cancer.

Death / Cancer	Yes	Not	Fa*
Prostate	5	161	166
Non-melanoma skin	5	104	109
Stomach	13	43	56
Colon	2	24	26
Bronchi and lungs	4	20	24
Kidney	2	22	24
Bladder	1	21	22
Esophagus	6	16	22
Liver	6	15	21
Rectal cancer	0	20	20
Fa*	**44**	**446**	**490**
Fr%	**9.0**	**91.0**	**100**

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

In this study, 490 new cases of cancer were diagnosed in men. Table 10 shows the distribution of the 10 neoplasms with the highest incidence in men by location of the primary tumor, in the State of Rondônia. Following the trend in Brazil in relation to cancer in men, prostate cancer (33.9%) is the one with the highest number of new cases registered in the State of Rondônia during the studied period. Prostate cancer is more common with 33.9% relative frequency, followed by non-melanone skin cancer, with 22.2% and stomach cancer, with 11.4%. Cancer of the colon (5.3%), bronchi and lungs (4.9%), kidney (4.9%), bladder (4.5%), esophagus (4.5%), liver (4.3%) and rectal (4.1%) fill in a list of the 10 types of cancer with the highest relative frequency. (Table 10). The analysis of the distribution of the 11 main neoplasms in men, according to the type of treatment, considered only the medical records correctly filled in all mandatory fields. Among the types of treatment and therapeutic procedures, “Other isolated therapeutic procedures” prevailed, with an absolute prevalence of 234 cases (47.8%) of the 1st treatment received by the male patient. The second highest frequency was surgery with 89 (18.2%) procedures, followed by chemotherapy with 4.9% and radiation therapy with 1.6% of the first treatments received by men diagnosed with cancer. It is worth mentioning that 134 patients did not receive any type of therapeutic treatment, that is, 27.3% of patients, even after diagnosis, did not receive treatment. (Table 11).

One hundred and thirty-seven (137) cases were excluded (ignored) due to inconsistency in the patient's medical record, that is, 28% of the 10 main types of cancer in related men, due to family history of cancer. The analysis of the distribution of the 10 main neoplasms in men considered only the medical records correctly filled in all mandatory fields. Among the 10 main neoplasms in men with a family history of cancer, 34.6% of men with cancer have a family cancer history. Fifty percent of men with liver and rectal cancer have a family history of cancer. The greatest evidence of cancer with a family history was found in esophageal cancer, where 66.7% of patients have a family history of cancer. All 10 main types of cancer in men are related to family history of cancer, in the following order: stomach (47.7%), colon (45%), bronchi and lungs (42.8%), bladder (38.5%), prostate (26.8%), non-melanone skin cancer (24.6%) and kidney (22.2%). (Table 12). It was possible to analyze 490 cases of cancer among the 10 main types of cancer in men. Of this sample, 44 men, that is, 9% of men diagnosed with cancer in Rondônia, died from the disease. The main victims of deaths were men with liver cancer (28.6%), esophagus (27.3%) and stomach (23.2%). Bronchi and lungs with 16.7%, kidney with 8.3% and colon with 7.7% also have a significant frequency of death. Cancers of non-melanoma with 4.6% and prostate with 3% complete the list of types of cancer that led men to death. (Table 13).

DISCUSSION

The objective of the present study was to analyze the sociodemographic and clinical profile of men with cancer treated at a hospital in the city of Porto Velho, Rondônia, Western Amazon (Brazil), in a period equivalent to 1 (one) year. The research was carried out with a database organized by the Núcleo Hospitalar de Epidemiologia - NHE of the largest public reference hospital in the state of Rondônia, with a sample of 490 men diagnosed with cancer in Rondônia. According to IPEA [17], the sociodemographic aspects and their indicators make it possible to know the characteristics of a specific population and its evolution over time in the territory. For the health sector, according to [17] and [18], this information supports the decision-making process, as it helps in the knowledge about health conditions, mortality and morbidity, risk factors, population; gender ratio; demographic conditions, among others [19].

Sociodemographic profile of men with cancer in Rondônia

Age is still one of the most important risk factors for cancer in men. Incidence rates increased rapidly after the age of 40. In Rondônia, the age group of cancer in the age group of 50 to 79 years old reaches 70% of the 10 main types of cancer in men. These findings are corroborated by Paraguassu-Chaves et al [6] and Paraguassu-Chaves et al [19]. In the study by Paraguassu-Chaves et al [6], there was a predominance in the profile of male patients aged between 55 and 74 years (54.5%).

In another study by Paraguassu-Chaves et al [19], there was a predominance of cancer in men, aged between 55 and 59 years (14.6%), 60 to 64 years (14%), 65 to 69 years (12.2%), 70 to 74 years old (12%) and extends to 75 to 79 years old (11.3%). The distribution of the main types of cancer in men in relation to the patient's age shows the highest frequency in people in adulthood, mainly from the age of 50, regardless of cancer. The only study identified in Rondônia, for reference, was that of Paraguassu-Chaves et al [5], which found similar results for 9 of the 10 types of cancer in this research. Neoplasms diagnosed in brown (64.2%) and white (28.3%) men are more frequent than in other ethnicities. In practically all types of cancer, there was a predominance of brown patients justified by the fact that Rondônia has the majority of the population of that color. Patients represented by white skin color in general are migrants, born in other states of Brazil and residing in Rondônia.

The frequency of low education predominates regardless of the type of cancer. Prostate cancer, for example, concentrates its highest incidence in patients with low education (81.1%). In the study by Paraguassu-Chaves et al [6], in the same place of this research, regarding the level of education, it was possible to observe, in general, low education. The frequency of illiterates, incomplete elementary education and complete elementary education reaches 71.3% of patients. 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% [19]. The highest frequencies of cancer in men were found in married men, without exception, distributed as follows: rectal cancer (90%), kidney (87.5%), esophagus (80%), prostate (77.2%), non- melanoma skin (76.4%), colon (75%), stomach (73.7%), liver (66.7%), bronchi and lungs (60%) and bladder (60%). Married patients have a higher 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 on marital status correspond to 12.3%. These results were found by Paraguassu-Chaves et al [17] in 2 years of studies in Rondônia. The relative incidence of men who declared smokers was 18.6% and 15.3% ex-smokers. Smoking was identified in patients of all neoplasms. Fifty percent smokers and 25% ex-smokers in patients with esophageal cancer, 28.6% smokers and 47.6 ex-smokers with bronchial and lung cancer, 33.3% smokers and 33.3% ex-smokers (liver cancer), 23.4% smokers and 21.3% ex-smokers (stomach cancer), 22.7% smokers and 18.2% ex-smokers (colon cancer), 16.7% smokers and 22.2% ex-smokers (bladder cancer) are the most frequent. Smoking as a risk factor for some types of cancer has been identified in the Amazon. The studies by Paraguassu-Chaves et al [6], [7] have already shown smoking as a direct and indirect factor for 5 neoplasms in Rondônia.

The study shows the consumption of alcoholic beverages. Of the men diagnosed with cancer, 17.5% use alcohol and 12.9% are ex-consumers. 35.3% of patients with esophageal cancer consume alcoholic beverages, bronchi and lungs (27.8%), liver (26.7%), colon (23.8%), stomach (23.4%), kidney (15.8%), prostate (14.7%) and skin without melanoma (11.8%) are consumers. of alcoholic beverages. These findings are corroborated by Paraguassu-Chaves et al [6], [7]. Men who work in agriculture represent 67.7% of the cases diagnosed with cancer, followed by men who occupy the professions of commerce, banks, transport and others with 26.7%. The proportional distribution of cancer in men by occupational activity is very well defined with agricultural activity, where cancer of the bronchi and lungs (88.9%), bladder (80%), esophagus with (80%), prostate (66.7%), kidney (66.7%), non-melanoma skin (63.3%), colon (30%) and liver (55.5%) are the most frequent. Among men working in commerce, banking, transportation and others, colon cancer (50%), rectal cancer (50%), liver (44.5%), stomach (33.3%), kidney (33.3%), non-melanoma skin (33.3%) and prostate cancer with 16.4% are the most frequent. According to Paraguassu-Chaves et al [19] of the 1.434 cases with information on patient occupation, workers in agricultural activities predominate, with 662 cases (43.4%). The main hypothesis for the high frequency of cancer in agricultural workers is due to the fact of the economic vocation (agricultural activities) of the State of Rondônia. Which should lead public health authorities to prioritize protection and assistance policies for this population group.

Patients born in the State of Rondônia are predominant and contributed with 15.5% of new cases, State of Paraná (13.2%), State of Minas Gerais (11.6%), State of São Paulo (11%) and patients born in other states of Brazil (48.7%). There are no major variations in the type of cancer in relation to the place of birth, except in cases of non-melanoma skin cancer, prostate and bronchi and lungs. In the results of a study by Paraguassu-Chaves et al [19] patients born in the state of Rondônia are predominant and contributed with 22.6% of new cases, Minas Gerais (11.6%), Paraná (11.4%) and Amazonas (7.4%). The other states in Brazil contributed 26.1% and foreign patients with 0.9%. Rondônia is a Brazilian state formed by migrants from all regions of Brazil. Therefore, it would be common to find this diversity of people born in other States and Regions. Four (4) municipalities (Porto Velho, Vilhena, Ariquemes and Ji-Paraná) are responsible for 58.4% of the frequency of cancer in men. The remaining 48 municipalities in Rondônia, together, reach a relative frequency of 41.6% of cancer cases. Only Porto Velho is responsible for 66.7% of all kidney cancer cases, 54.5% of esophageal cancer, 52.4% of liver cancer, 50% of bladder cancer, 46.1% of cancer colon cancer, 41.1% stomach cancer, 37.9% prostate cancer, 36.7% non-melanoma skin cancer, 30% rectal cancer and 25% bronchial and lung cancer. These findings are in line with the estimate [1] and [3], where Porto Velho figures as the main municipality in cancer incidence in Rondônia. Therefore, the highest concentration of cancer in Rondônia is located in the municipality of Porto Velho.

Clinical profile of men with cancer in Rondônia

In this research, prostate cancer is more common in 33.9% of new cases, followed by non-melanone skin cancer in 22.2% of cases and stomach cancer in 11.4% of cases. Among the 10 types of cancer with the highest relative frequency are colon cancer (5.3%), bronchi and lungs (4.9%), kidney (4.9%), bladder (4.5%), esophagus (4.5%), liver (4.3%) and rectal cancer (4.1%). Paraguassu-Chaves et al [6] have already reported that, 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 the 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. As for the 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. 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 third in the proportional order of cancer cases by location of the primary tumor, stomach cancer (C16) appears with 6.4% of all cancers and is responsible for 8.8% of cases in men. 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, as stated by Paraguassu-Chaves et al [10].

“Other isolated therapeutic procedures”, prevailed with 47.8% of the 1st treatment received by the patient. The second highest frequency was surgery with 18.2% of procedures, followed by chemotherapy with 4.9% and radiation therapy with 1.6%. 27.3% of patients, even after diagnosis, did not receive treatment. Among the first procedures received by patients, “Other isolated therapeutic procedures” stands out, with a frequency of 44.4% [19]. A negative highlight is that 27% of patients who did not receive any therapeutic treatment procedure. These findings are also corroborated by Paraguassu-Chaves et al [6]. 34.6% of men with cancer have a family history of cancer. 55% with liver and rectal cancer have a family history of cancer. The greatest evidence of cancer with a family history was found in esophageal cancer (66.7%). All 10 major types of cancer in men are related to family history of cancer. 9% of men diagnosed with cancer in Rondônia, died from the disease. The main victims of deaths were men with liver cancer (28.6%), esophagus (27.3%), stomach (23.2%), bronchi and lungs (16.7%), kidney (8.3%) and colon (7.7%). These findings are corroborated by Paraguassu-Chaves et al [5], [6] and [7]. According to the research results, prostate cancer is the most prevalent in Rondônia. The world estimate points to prostate cancer as the second most common cancer in men in the world [1]. For Stewart and Wild [20] prostate cancer is a highly prevalent disease. It occupies the second position among malignant neoplasms that affect men, worldwide, behind lung cancer only. Bray el al [4] in "Global Cancer Statistics in 2018: Globocan Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries" and Ferlay et al [2] in "Incidence and Mortality from Cancer Worldwide ", estimated 1,280 thousand new cases of prostate cancer, or the equivalent of 7.1% of all cancer values considered.

In Brazil, prostate cancer is the cancer with the highest incidence among men (except non-melanoma skin cancer) [21], [22], [23]. According to Ferlay et al [24], [25] the overall incidence rate can vary more than 25 times. This can be attributed, according to [24], [25] in part, to screening strategies, carrying out a prostate specific antigen test (PSA) and subsequent biopsy, as it allows the identification of small, latent or staged tumors initial growth. According to INCA [26] in Brazil, in 2017, there were 15,391 deaths from prostate cancer, equivalent to the risk of 15.25 / 100 thousand men. The main risk factor is age and its incidence increases significantly after the age of 50 [27]. Howlader et al [28], in the “SEER Cancer Statistics Review”, confirm that advancing age comprises a well-established risk factor, since incidence and mortality increase after 50 years. According to the American Cancer Society [29], other known risk factors that increase the risk of the disease are: family history, hereditary genetic factors (for example, Lynch syndrome and mutations in BRCA1 and BRCA2). Maule and Merletti [30] in “cancer transition and priorities for cancer control” recognize smoking and excess body fat as risk factors. Exposure to aromatic amines, arsenic and petroleum products are also risk factors [27]. Chan, Stampfer, Giovannucci [31] in “What causes prostate cancer? A brief summary of epidemiology” corroborates the relationship between prostate cancer and family history. For these authors, family history in the first degree (father, siblings or children) has a positive association to increase the risk of developing this neoplasm. For Nakandi et al [32] in “Knowledge, attitudes and practices of men in Uganda in relation to prostate cancer”, skin color / ethnicity is relevant in the etiology of prostate cancer. There are other associations of controversial risk factors, such as sex hormones, elitism, eating patterns and obsedity [20], [28], [33]. Mortality rates from prostate cancer are higher in low-income countries when compared to high-income countries [32]. For Howlader et al [28], prostate cancer is a neoplasm with a good prognosis and its probability of five-year survival is over 80%, varying according to clinical, genetic, socioeconomic and environmental factors.

According to Bray et al [4] and Ferlay et al [2] of all malignant neoplasms diagnosed in the world, non-melanoma skin cancer is the most common type in both sexes. According to INCA [13] skin cancers are more common in people with fair skin over 40 years of age, except for those already with skin diseases. In 2018, 1.04 million (5.8%) new cases of non-melanoma skin were estimated worldwide, with 640 thousand new cases in men (16.6 / 100 thousand) [1]. In Brazil, 1,301 deaths from non-melanoma skin cancer occurred in men in 2017. This value corresponds to the risk of 0.92 / 100 thousand [26]. Non-melanoma skin cancer is the most common tumor among men and women in Brazil, according to the INCA [13], [35] in its publication "Monitoring of skin cancer control actions". According to the American Cancer Society [29] the main risk factors for skin cancer are prolonged exposure to the sun (ultraviolet rays - UV), especially in childhood and adolescence, exposure to tanning beds and family history of cancer of skin. This statement is corroborated by INCA [3]. In addition to these, there are also environmental and occupational factors. In Rondônia, workers who carry out their outdoor activities, such as construction workers, farmers, fishermen, health workers, among others, are at increased risk of non-melanoma skin cancer. According to INCA [1], it is difficult to estimate non-melanoma skin cancer, as not all cancer records are collected. INCA [35], when studying the types of cancer, explains that, despite the low lethality, its high incidence is the cause of the occurrence of deaths from non-melanoma cancer, almost identical to melanoma skin cancer. For Ferlay et al [24], [25] of all cancers that occur in the world, stomach cancer occupies the fifth place. Stewart and Wild [20] observed the differences between the sexes, being twice as frequent in men than in women. According to these authors, stomach cancer corresponds to 8.5% of the total cancer in men, occupying a position in the ranking of the most common tumors in comparison to women (4.8%). When analyzed in its territorial and continental distribution, prostate cancer is more frequent in countries with low or medium human development index (HDI). Ferlay et al [25] and Forman et al [36] make this analysis. Stomach cancer in both sexes is the third leading cause of death worldwide, with 8.8% of all deaths. According to INCA [26], in Brazil, in 2017, there were 9,206 deaths from stomach cancer in men, these values corresponded to the risk of 9.12 / 100 thousand.

Chang et al [37] in “Association between Helicobacter pylori infection and the risk of gastric cancer in the Korean population: a prospective case-controlled study”, Diaconu et al [38] in “Helicobacter pylori infection: old and new” and Stewart and Wild [20] in "World Cancer Report", that a Helicobacter Pylori infection comprises a cause more strongly associated with the risk of developing stomach cancer. Stewart and Wild [20] highlight the importance of environmental and social factors, which include nutritional habits, such as diets rich in smoked foods or preserved in salt, obesity, alcohol and tobacco consumption, enquanto Wang et al [39] in “Consumption of fruit, but not vegetables, may reduce risk of gastric cancer: results from a meta-analysis of cohort studies” report that eating fruits and vegetables, cereals and seafood are considered a protective factor against stomach câncer. Stewart and Wild [20] also reported an intake of fruits and vegetables, cereals and seafood as a protective factor. These two authors also point out that hereditary factors such as previous family history contribute to a lesser extent to the burden of this type of cancer. Study by Alicandro et al [40] "Educational inequality in cancer mortality: a record linkage study of over 35 million Italians" and Reques et al [41] "Educational differences in mortality and the relative importance of different causes of death: a 7-year follow-up study of Spanish adults" conclude that the incidence of stomach cancer may be affected by the development of the Region and that the level of education appears to be associated with risk; therefore, more advanced levels of education can be a protective factor. Colon and rectal cancer has epidemiological relevance worldwide. Colon and rectal cancer includes tumors that start in the part of the large intestine (called the colon) and in the rectum (the end of the intestine, just before the anus) and anus. It is also known as colorectal cancer. It is amenable to treatment and, in most cases, it is curable when detected early and has not yet reached other organs [1]. According to 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. According to Ferlay et al [2] and [24] the pattern of incidence of colon and rectal cancer differs between the sexes, with much higher rates for men. In the study by Center, Jemal and Ward [42] "International Trends in Colorectal Cancer Incidence Rates. Epidemiology, Biomarkers and Cancer Prevention" was observed a wide geographical variation of colon and rectal cancer in the world. Among his observations are the high rates of this disease in more developed countries when compared to less developed countries. Colon and rectal cancer incidence and mortality rates vary widely around the world. This variation follows the Human Development Index (HDI). This is what Arnold et al [43] presents in their study "Global patterns and trends in colorectal cancer incidence and mortality".

According to the American Cancer Society [44], INCA [1] and Paraguassu-Chaves et al [19], the main factors related to the increased risk of developing cervical and rectal cancer are: age equal to or greater than 50 years, obesity, physical inactivity, prolonged smoking, high consumption of processed meat, low calcium intake, excessive alcohol consumption and a diet low in fruits and fiber. Boyle and Leon [45] in "Epidemiology of colorectal cancer" and Sandler [46] in "Epidemiology and risk factors for colorectal cancer" argue that colon and rectal cancer is a multifactorial disease influenced by genetic, environmental and style-related factors of life. The studies by Bouvard et al [47] "Carcinogenicity of the consumption of red and processed meat", Fedirko et al [48] "Alcohol consumption and colorectal cancer risk: a general meta-analysis and dose response of published studies", Harriss et al [49] "Lifestyle factors and colorectal cancer risk: a systematic review and meta-analysis of associations with leisure-time physical activity" and Walter [50] "Smoking and survival of colorectal cancer patients: systematic review and meta-analysis", are references in the international literature on risk factors for colon and rectal cancer.

According to INCA [1], in the world, lung cancer is among the main incidences, occupying the first position among men. In 2018, lung cancer represented 1.37 million new cases in men, corresponding to an estimated risk of 35.5 / 100 thousand men. In Brazil, in 2017, there were 16,137 deaths from lung cancer in men, values that represent an estimated risk of 15.98 / 100 thousand men [26]. Smoking and passive tobacco exposure are the main risk factors for the development of lung cancer. 85% of diagnosed cases are associated with tobacco use [27], that is, smoking and passive exposure to tobacco are the main risk factors for the development of lung cancer. For the American Cancer Society [51] in "Cancer Facts and Figures" and Canadian Cancer Statistics [52], smoking is the leading cause of lung cancer. Other risk factors are occupational exposure to chemical or physical agents (asbestos, silica, uranium, chromium and radon) and high doses of beta-carotene supplements in smokers and ex-smokers [27] and [29].

According to Ferlat et al [2] the pattern of the occurrence of this type of neoplasia, in general, reflects the cigarette consumption in your Region. In most populations, tobacco-related lung cancer cases account for approximately 85% of that câncer. Stewart and Wild [20] observed in their study that lung cancer is one of the most aggressive types of cancer, having an M / I ratio of approximately 0.87. According to INCA [3] due to its high lethality, the geographic profile of the incidence can be observed by mortality, especially in places where there is no information on new cases (incidence). Five-year survival is low in most populations worldwide, averaging 10% to 15%. This is because, in general, this type of cancer is detected in advanced stages, since symptoms are not observed in its initial stages [20].

Kidney cancer is a relatively common form of cancer, responsible for about 3% of all cases of malignancies in men and women. The most common histological type is clear cell carcinoma corresponding to approximately 90% of cases. Kidney cancer is usually an asymptomatic disease in the early stages, which means that 1 in 4 patients only discover the tumor in very advanced stages, with no possibility of treatment in order to cure it. Most kidney cancer patients also do not usually have symptoms. When this occurs, the disease is already in a metastatic state. In an epidemiological analysis, it can be estimated that in Brazil, the annual incidence of kidney cancer is 1 case for every 10,000 inhabitants. Kidney cancer is more common in patients over 50 years of age, with the average age at diagnosis at around 64 years of age. This type of cancer is uncommon in people under 40 years of age. Men are 50% more at risk of developing this type of tumor [53]. In 2018, about 3,760 new cases of kidney cancer were diagnosed in men in Brazil. Kidney cancer is among the 10 most common types among men and women. Overall, the lifetime risk of developing kidney cancer in men is about 1 in 46 (2%). Most kidney tumors are diagnosed at an early stage, when they are still confined to the kidney, which increases the chances of cure. About 20% are locally advanced (affects lymph nodes - regional ganglia close to the kidney) and 25% present metastases to other organs, mainly to the lungs, liver and bones. The most frequent histological type is clear cell carcinoma (85%) [54] and [5]. In Brazil, 1.7% of kidney cancer diagnoses are in men and kidney cancer mortality reaches 54%, slightly above the 42.54% that occurs in the world. According to Globocan, the kidney cancer mortality rate in Brazil is 54%, that is, for every two patients diagnosed, there is one patient already diagnosed with the disease that dies. This indicates that cases in Brazil tend to have a later diagnosis, when the disease is more advanced. A study by the Brazilian Society of Urology pointed out that almost 40% of kidney cancer cases are diagnosed when the tumor is in stages 3 or 4, considered advanced and with little chance of cure.

Several factors (described in risk factors for kidney cancer) also affect a person's risk. For reasons that are not entirely clear, the rate of new kidney cancers has been increasing since the 1990s, although this appears to have stabilized in recent years. Part of this increase was probably due to the use of more recent imaging tests, such as CT scans, which detected some types of cancer that might never be found. Mortality rates from these cancers have remained stable for many years.

According to INCA [35] the biggest causes or predisposing factors for kidney cancer are well known. Among these risk factors for kidney cancer are men over 50, smoking, obesity, high blood pressure, family history of kidney cancer, clinical syndromes (genetic predisposition - Von Hippel-Lindau disease), chronic renal failure on hemodialysis, prolonged use of non-steroidal drugs, painkillers, frequent occupational exposure to toxic substances, such as asbestos, cadmium and petroleum products, other causes such as chronic hepatitis C, sickle cell anemia.

Bladder cancer is one of the most common cancers of the urinary tract, being more common in men than in women. Incidence rates are much more frequent in men, two to four times higher than in women [20]. According to INCA [1] the most recent world estimate points out that bladder cancer was the sixth most frequent, with an estimate of 424 thousand new cases, with an estimated risk of 11.0 / 100 thousand men. According to Freedman et al [55] in "Association between smoking and risk of bladder cancer among men and women" in recent decades, a significant increase in the incidence of bladder cancer has been observed in the literature worldwide, and this may be a consequence of effects of smoking, which is recognized as an important risk factor for cancer. Its incidence increases with age in both sexes, being 2.5 times more common among men than in women [56]. According to the Brazilian Society of Urology [57], although it can occur at any age, bladder cancer is diagnosed more frequently in the 6th and 7th decades of life. Filho et al [58] in "Clinical-epidemiological profile of patients with bladder cancer undergoing radial cystectomy" found patients aged between 45 and 75 years, with a higher incidence in the age group of 50 to 59 years, with an average age of 58 years. Studies by Tanagho [59], Brazilian Society of Urology [57] and Wein [60] found the highest incidence in patients aged 60 to 70 years, while Kim et al [61] identified the average age between 66 to 68 years. According to Thun et al [62] in "Cancer epidemiology and prevention", the main risk factor for bladder cancer is smoking and is associated with the disease in 50% to 70% of cases. And for Stewart and Wild [20] the risk of developing this disease among smokers was two to six times higher compared to nonsmokers. According to INCA [3], there is also an association with risk factors related to occupational and environmental exposure that increase the risk of developing the disease, as in Rondônia, for agricultural workers, workers who manipulate and expose themselves to pesticides, workers in civil construction, rural workers, foundry workers, mineral extraction and fishermen, truck drivers, wall painters, car painting and repair workshops (car painting), hairdressers etc [63]. Without considering non-melanoma skin tumors, bladder cancer in men ranks 11th in the Northern Region of Brazil (1.63 / 100 thousand). According to INCA [26] in 2017 in Brazil, there were 3,021 deaths from bladder cancer (2.99 / 100 thousand).

According to the Canadian Cancer Society [54] and INCA [3] the esophagus is an organ of the digestive system that is part of the gastrointestinal tract (tube that connects the throat to the stomach), the most frequent cancer in this location is squamous squamous cell carcinoma , responsible for 96% of cases. Another type of cancer that has been increasing significantly is adenocarcinoma. According to INCA [1], the world estimate pointed to 572 thousand new cases of esophageal cancer in the world, the incidence being twice as high in men than in women. Thus, in men, 400 thousand new cases were registered, occupying the seventh position among all cancers, with an estimated risk of 10.4 / 100 thousand men. According to Bray et al [4] and Ferlay [55] approximately 70% of cases occur in men. The observed incidence and mortality rates are very close, of intermediate magnitude. However, according to Stewart and Wild [20] esophageal cancer is considered a disease of low prevalence and relatively poor survival. According to Ferlay et al [24], Howlader et al [28], Canadian Cancer Society [64] and Jemal et al [65] esophageal cancer in general is diagnosed in late stages and of an extremely aggressive nature, compromising survival of around 15% to 25%. It comprises the sixth leading cause of cancer death worldwide [2] and [20]. According to INCA [26] in Brazil in 2017, there were 6,647 deaths from esophageal cancer with a crude mortality rate of 6.58 / 100 thousand in men. According to INCA [3] and Thun et al [62], excessive consumption of alcoholic beverages and smoking are the main risk factors for esophageal cancer. These two literatures warn that in South America (for example, in Uruguay, Brazil and Argentina), people who frequently consume very hot drinks such as chimarrão, tea and coffee, at a temperature of 65ºC or more, can increase the risk of esophageal cancer.

Authors such as Bray et al [4], Domper Arnal, Ferrández Arenas and Lanas Arbeloa [66], and INCA [3] list risk factors that are associated with the development of esophageal cancer. Among them are obesity, Barret's syndrome (due to gastroesophageal reflux disease), hereditary tylosis syndrome (thickening of the skin on the palms and soles of the feet), achalasia (lack of relaxation of the sphincter between the esophagus and the stomach), causal lesions (burns) in the esophagus and Plummer-Vinson syndrome (iron deficiency). The authors cited also highlight other relevant risk factors, such as a diet with low intake of fruits, vegetables and whole fiber, consumption of processed meats and the risk factors associated with occupational exposure such as construction dust, coal and metal, vapors fossil fuels, mineral oil, herbicides, sulfuric acid and carbon black.

Liver cancer is a malignant tumor that originates from cells that make up the liver. Since the liver is made up of several different types of cells, several types of tumors can grow in the organ. Hepatocarcinoma is the most common form of liver cancer in adults. According to the American Cancer Society [44] the incidence of liver cancer has more than tripled since the 1980s. Liver cancer mortality rates have increased by almost 3% a year since 2000. Liver cancer is diagnosed more frequently in men than in women. More than 700,000 people are diagnosed with liver cancer each year worldwide. Liver cancer is also a leading cause of cancer deaths worldwide, accounting for more than 600,000 deaths annually. According to Ferlay et al [67] liver and biliary tract cancer represents today the third group of cancer topographies that kills the most in the world, being the fifth most prevalent among men. For Bray et al [68] and Clegg et al [69] it is a cancer quite characteristic of developing countries, as well as other cancers associated with infectious etiology, such as cervical cancer, head and neck cancer and gastric cancer. In consultation with the mortality information system in Brazil, Guimarães et al [70] found the number of deaths recorded, where about 60% were among men and, highlight the high lethality of liver cancer, although the estimate prepared by the National Institute of Cancer does not present estimation data for liver and bile duct cancer in its report. In the Northern Region of Brazil, liver and biliary tract cancer has remained in the group of the five topographies that kill the most, both among men and among women, with rates higher than national averages [71]. The study by Mcglynn et al [72] in "International trends and patterns of primary liver cancer" attributes chronic hepatitis as the main risk factors, mainly caused by the B (HBV) and C (HCV), Mazieiro and Bersot [73] in "Mycotoxins in foods produced in Brazil" and Rodríguez-Amaya and Sabino [74] in

"Mycotoxin research in Brazil: the last decade in review" attribute exposure to aflatoxin (more common in African countries) and alcohol consumption as a factor risk factors [72]. Ximenes et al [75] (2010) report in relation to the prevalence of infection by hepatitis B and C in Brazil, the estimated values are approximately 0.6% and 1.6%. The Brazilian Ministry of Health [76] estimates that 18% of the Brazilian population is an alcohol abuser. The estimates and scenarios of cancer in Brazil do not differ much from those found in this study.

CONCLUSION

The present study concludes that the 490 male patients diagnosed with cancer in a referral hospital for cancer treatment in the city of Porto Velho, for a period of 1 (one) year, there was a predominance in the age group of 50 to 79 years (70%), brown skin color (64.2%), low education, married, smokers (18.6%) and ex-smokers (15.3%), users of alcoholic beverages (17.5%) and ex-alcohol consumer (12.9%). In all types of diagnosed cancer, there is a relationship with smoking and alcohol consumption. In esophageal cancer, 50% of patients were smokers and 25% were ex-smokers, bronchial and lung cancer, 28.6% were smokers and 47.6 were ex-smokers, liver cancer, 33.3% smokers and 33.3% ex-smokers, stomach cancer 23.4% smokers and 21.3% ex-smokers, colon cancer 22.7% smokers and 18.2% ex-smokers and bladder cancer 16.7% smokers and 22.2% ex-smokers. 35.3% of patients with esophageal cancer consume alcoholic beverages, bronchi and lungs (27.8%), liver (26.7%), colon (23.8%), stomach (23.4%), kidney (15.8%), prostate (14.7%) and skin without melanoma (11.8%). Men working in agriculture represent 67.7% of the cases diagnosed with cancer, followed by men occupying the professions of commerce, banking, transport and others with 26.7%. In agricultural activity, bronchial and lung cancers (88.9%), bladder (80%), esophagus (80%), prostate (66.7%), kidney (66.7%), skin without melanoma (63.3%), colon (30%) and liver (55.5%) are the most frequent.

Patients born in the State of Rondônia are predominant and contributed with 15.5% of new cases, State of Paraná (13.2%), State of Minas Gerais (11.6%), State of São Paulo (11%) and patients born in other states of Brazil (48.7%). Four (4) municipalities (Porto Velho, Vilhena, Ariquemes and Ji-Paraná) are responsible for 58.4% of the frequency of cancer in men. The remaining 48 municipalities in Rondônia, together, reach a relative frequency of 41.6% of cancer cases. Porto Velho is responsible for 66.7% of all kidney cancer cases, 54.5% of esophageal cancer, 52.4% of liver cancer, 50% of bladder cancer, 46.1% of cancer of colon, 41.1% stomach cancer, 37.9% prostate cancer, 36.7% non-melanoma skin cancer, 30% rectal cancer and 25% cancer bronchi and lungs. In this research, prostate cancer is more common in 33.9% of new cases, followed by non-melanone skin cancer in 22.2% of cases and stomach cancer in 11.4% of cases, colon cancer (5.3%), bronchi and lungs (4.9%), kidney (4.9%), bladder (4.5%), esophagus (4.5%), liver (4.3%) and rectal cancer (4.1%). "Other isolated therapeutic procedures", prevailed with 47.8% of the 1st treatment received by the patient. 27.3% of patients, even after diagnosis, did not receive treatment. 34.6% of all men diagnosed with cancer have a family history of cancer. The greatest evidence of cancer with a family history was found in esophageal cancer (66.7%). All 10 major types of cancer in men are related to the family history of cancer. 9% of men diagnosed with cancer in Rondônia died of the disease. The main victims of death were men with liver cancer (28.6%), esophagus (27.3%), stomach (23.2%), bronchi and lungs (16.7%), kidney (8.3%) and colon (7.7%). The estimates and scenarios of cancer in Brazil do not differ much from those found in this study. The results presented are close to the data of most studies carried out by Paraguassú-Chaves et al [5], [6], [7], [11] and [19] in Rondônia. The Cancer Registry Information System regarding the collection, registration, information and monitoring of patients diagnosed with cancer, despite the efforts of the teams of hospital professionals, is still very deficient. At least what is expected is that this work will serve as a reference for planning, executing and evaluating actions to promote, prevent, control and treat cancer within the scope of public health policies. It is recommended that healthcare professionals be careful when filling out patients' medical records. The records and all medical and hospital information of the patients must guarantee safe and complete information, under penalty of compromising any analysis or interpretation with more security and reliability.

REFERENCES

[1] INCA. Instituto Nacional de Câncer. Estimativa 2020: incidência de câncer no Brasil / Instituto Nacional de Câncer José Alencar Gomes da Silva. Rio de Janeiro: INCA, 2019.

[2] Ferlay J et al. Estimating the global cancer incidence and mortality in 2018: GLOBOCAN sources and methods. International journal of cancer, New York, v. 144, n. 8, p. 1941-1953, Apr. 2019

[3] INCA. Instituto Nacional de Câncer. Estimativa 2018: incidência de câncer no Brasil / Instituto Nacional de Câncer José Alencar Gomes da Silva. Coordenação de Prevenção e Vigilância. Rio de Janeiro: INCA, 2017.

[4] Bray F et al. Global cancer statistics. 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians, Hoboken, v. 68, n. 6, p. 394-424, nov. 2019.

[5] Paraguassu-Chaves CA et al. Perfil Epidemiológico de Rondônia. 1ª ed. Editora AICSA, Porto Velho, 2015.

[6] Paraguassu-Chaves CA et al. Perfil epidemiológico do câncer em Rondônia: Amazônia brasileira. Porto Velho: AICSA, 2015.

[7] Paraguassu-Chaves CA et al. Epidemiologia do câncer em Rondônia. Porto Velho: AICSA, 2017.

[8] Paraguassu-Chaves CA. Diagnóstico de Câncer em Mulheres em Rondônia: Estudo da Geografia Médica. Editora AICSA, Porto Velho, 2016.

[9] Paraguassú-Chaves CA et al. Analysis of histological frequency and pediatric cancer in Rondônia, Western Amazonia (Brazil). International Journal of Advanced Engineering Research and Science (IJAERS). [Vol-5, Issue-7, July- 2018]. p.60-66.

[10] Paraguassu-Chaves CA et al. Analysis of the frequency of pediatric cancer in the Western Amazon (Brazil): the case of Rondônia. International Journal for Innovation Education and Research, v. 5, p. 479-497, 2020.

[11] Paraguassu-Chaves CA et al. Sociodemographic and clinical profile of women from Rondônia, Western Amazon (Brazil), diagnosed with the main types of

cancer. International Journal of Advanced Engineering Research and Science, v. 7, p. 352-374, 2020.

[12] Guerra MR, Moura GCV, Mendonça GAS. Risco de câncer no Brasil: tendências e estudos epidemiológicos mais recentes. Ver. Bras. cancer. 2005; 51(3):227-34.

[13] INCA. Instituto Nacional de Câncer José Alencar Gomes da Silva Estimativa 2010: incidência de câncer no Brasil. Rio de Janeiro: INCA; 2009. 98 p.

[14] Brasil. Ministério da Saúde. Guia de Vigilância Epidemiológica/MS/SVS – 7ª edição – Brasília: Ministério da Saúde, 2009.

[15] Brasil. Ministério da Saúde. Política Nacional de Atenção Integral à Saúde do Homem: princípios e diretrizes. Brasília: MS, 2009.

[16] Brasil. Ministério da Saúde. Política Nacional de Atenção Integral à Saúde do Homem: Plano de Ação Nacional. Brasília: MS, 2009.

[17] IPEA. Instituto de Pesquisa Econômica Aplicada. Políticas sociais: acompanhamento e análise. Política Social – Periódicos. I. Instituto de Pesquisa Econômica Aplicada. Diretoria de Estudos e Políticas Sociais. ISSN: 15184285, 2011.

[18] Rouquayrol MZ, Almeida Filho N. Epidemiologia & saúde. 6 eds. Rio de Janeiro: MEDSI, 2006.

[19] Paraguassu-Chaves CA et al. Epidemiological and sociodemographic characterization of women and men with cancer in a State in the Brazilian Amazon. International Journal for Innovation Education and Research. 2020. Prelo.

[20] Stewart BW, Wild CP. (Ed.). World Cancer Report: 2014. Lyon: IARC, 2014.

[21] INCA. Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2018-2019: incidência de câncer no Brasil. Rio de Janeiro: INCA; 2017.

[22] Brasil. Ministério da Saúde. Instituto Nacional de Câncer. Estimativa 2014: Estimativa de Câncer no Brasil. Brasília: MS; 2014.

[23] Brasil. Ministerio da Saude. Departamento de Informatica do SUS. Sistema de informações sobre mortalidade. Brasilia, DF, 2017. Disponivel em: <http://www.datasus. gov.br>. Acesso em: 22 set. 2019.

[24] Ferlay J et al. Globocan 2012 v1.0, cancer incidence and mortality worldwide. Lyon, France: IARC, 2013. (IARC CancerBase, 11). Disponivel em: <http://globocan.iarc.fr>. Acesso em: 14 set. 2019.

[25] Ferlay J et al. Cancer incidence and mortality worldwide: sources, methods and major patterns in Globocan 2012. International Journal of Cancer, Geneve, v. 136, n. 5, p.359-386, 2015.

[26] INCA. Instituto Nacional de Câncer José Alencar Gomes da Silva. Atlas on-line de mortalidade. Rio de Janeiro: INCA, 2014. 1 banco de dados. Acesso restrito.

[27] INCA. 2019. Instituto Nacional de Câncer José Alencar Gomes da Silva. Tipos de câncer. Rio de Janeiro: INCA, 2019. Disponível em: https://www.inca.gov.br/tipos-de-cancer. Acesso em: 30 nov. 2019.

[28] Howlader N et al. (Ed.). SEER Cancer Statistics Review, 1975-2014. Bethesda: National Cancer Institute, 2017. Disponivel em: <https://seer.cancer.gov/csr/1975_2014/>. Acesso em: 1 dez. 2019.

[29] American Cancer Society. Cancer facts & figures 2019. Atlanta: American Cancer Society, 2019.

[30] Maule M, Merletti F. Cancer transition and priorities for cancer control. The Lancet. Oncology, London, v. 13, n. 8, p. 745-746, Aug. 2012.

[31] Chan JM, Stampfer MJ, Giovannucci E L. What causes prostate cancer? A brief summary of the epidemiology. Seminars in cancer biology, London, v. 8, n. 4, p. 263-273, 1998.

[32] Nakandi H et al. Knowledge, attitudes and practices of Ugandan men regarding prostate cancer. African Journal of Urology, Cairo, v. 19, n. 4, p. 165-170, 2013.

[33] Hernandez BY et al. Relationship of body mass, height, and weight gain to prostate cancer risk in the multiethnic cohort. Cancer Epidemiology, Biomarkers and Prevention, Philadelphia, v. 18. n. 9, p. 2413-2421, 2009.

[34] INCA. Instituto Nacional de Cancer José Alencar Gomes da Silva. Monitoramento das ações de controle do câncer de pele. Informativo Detecção Precoce, ano 7, n. 3, 2016. Disponivel em: <http://www1.inca.gov.br/inca/Arquivos/informativo_deteccao_precoce_03_2016.pdf>. Acesso em: 20 set. 2019.

[35] INCA. Instituto Nacional de Câncer José Alencar Gomes da Silva. Tipos de câncer. Rio de Janeiro, 2017b. Disponivel em: < http://www2.inca.gov.br/wps/wcm/connect/tiposdecancer/site/home >. Acesso em: 20 nov. 2019.

[36] Forman D et al. (Ed.) Cancer Incidence in five continents: vol X. Lyon: IARC, 2014. (IARC Scientific Publications, n. 164).

[37] Chang WK et al. Association between Helicobacter pylori infection and the risk of gastric cancer in the Korean population: prospective case-controlled study. Journal of gastroenterology, Tokyo, v. 36, n. 12, p. 816-822, 2001.

[38] Diaconu S et al. Helicobacter pylori infection: old and new. Journal of Medicine and Life, Bucharest, v. 10, n. 2, p. 112-117, 2017.

[39] Wang Q et al. Consumption of fruit, but not vegetables, may reduce risk of gastric cancer: results from a meta-analysis of cohort studies. European Journal of Cancer, Oxford, v. 50, n. 8, p. 1498-1509, 2014.

[40] Alicandro G. et al. Educational inequality in cancer mortality: a record linkage study of over 35 million Italians. Cancer Causes Control, Oxford, v. 28, n. 9, p. 997-1006, 2017.

[41] Reques L. et al Educational differences in mortality and the relative importance of different causes of death: a 7-year follow-up study of Spanish adults. Journal of Epidemiology and Community Health, London, v. 68, n. 12, p. 1151-1160, 2014.

[42] Center MM, Jemal A, Ward E. International Trends in Colorectal Cancer Incidence Rates. Cancer Epidemiology, Biomarkers and Prevention, Philadelphia, v. 18, n. 6, p. 1688-1694, 2009.

[43] Arnold M et al. Global patterns and trends in colorectal cancer incidence and mortality. BMJ, London, 2016. No prelo. Disponivel em: < http://www-dep.iarc.fr/includes/Gut-2016-Arnold-gutjnl-2015-310912.pdf >. Acesso em: 30 nov. 2019.

[44] American Cancer Society. Cancer facts & figures 2019. Atlanta: American Cancer Society, 2019a.

[45] Boyle P, Leon ME. Epidemiology of colorectal cancer. British Medical Bulletin, London, v. 64, n. 1, p. 1-25, 2002.

[46] Sandler RS. Epidemiology and risk factors for colorectal cancer. Gastroenterology Clinics of North America, Philadelphia, v. 25, n.4, p.717-735, 1996.

[47] Bouvard V et al. Carcinogenicity of consumption of red and processed meat. The Lancet. Oncology, London, v. 16, n. 16, p. 1599-1600, 2015.

[48] Fedirko V. et al. Alcohol drinking and colorectal cancer risk: an overall and dose-response meta-analysis of published studies. Annals of Oncology, Dordrecht, v. 22, n. 9, p. 1958-1972, 2011.

[49] Harriss DJ et al. Lifestyle factors and colorectal cancer risk (2): a systematic review and meta-analysis of associations with leisure-time physical activity. Colorectal disease, Oxford, v. 11, n. 7, p. 689-701, 2009.

[50] Walter V. Smoking and survival of colorectal cancer patients: systematic review and meta-analysis. Annals of Oncology, Dordrecht, v. 25, n. 8, p. 1517-1525, 2014.

[51] American Cancer Society. Cancer facts & figures 2015. Atlanta, 2015. Disponivel em: <http://oralcancer foundation.org/wp-content/uploads/ 2016/03/Us_Cancer _Facts. pdf>. Acesso em: 29 nov. 2019.

[52] Canadian Cancer Society. Canadian cancer statistics 2015. Toronto, 2015.

[53] Abreu T. Oncomed oncology. Rio de Janeiro. 2020.

[54] American Cancer Society. Cancer facts & figures 2018. Disponivel em: <https://www.cancer.org/content/ dam/ cancer-org/research/cancer-facts-and-statistics/annual-cancer-acts-and-figures/2018/cancer-facts-and-figures-2017.pdf>. Acesso em: 11 nov. 2019.

[55] Freedman ND et al. Association between smoking and risk of bladder cancer among men and women. Journal of the American Medical Association, Chicago, v. 306, n. 7, p. 737-745, 2011.

[56] Greenlee RT, Murray T, Bolden S, Wings PA. Cancer statistics, 2000. CA Cancer J. Clin. 2000;50(1):7-33.

[57] Sociedade Brasileira de Urologia. Diretrizes de tratamento do câncer urológico, 1 ed. Rio de Janeiro: Ed. DOC; 2009.

[58] Filho FAA et al. Perfil Clínico-Epidemiológico de Pacientes Portadores de Câncer de Bexiga Submetidos à Cistectomia Radial. Revista Paraense de Medicina - V.27 (4) outubro-dezembro 2013.

[59] Tanagho EA. Urologia Geral de Smith, 16 ed. Barueri, SP: Ed. Manole; 2007.

[60] Wein AJ. Campbell-Walsh urology, 9 ed. Philadelphia: Ed. Saunders Elsevier; 2007.

[61] Kim YB, Hong SJ, Yang SC, Cho JH, Choi YD, Kim GE, Rha KH, Han WK, Cho NH, Oh YT. Pattern of failure in bladder cancer patients treated with radical cystectomy: rationale for adjuvant radiotherapy. J Korean Med Sci. 2010;25(6):835-40.

[62] Thun MJ et al. (ed.). Cancer epidemiology and prevention. 4th ed. New York: Oxford University Press, 2017.

[63] Paraguassu-Chaves CA. Amazonian Studies of Medical and Health Geography. 1ª ed. Editota Temática. Porto Velho, 2019.

[64] Canadian Cancer Society. Esophageal cancer. Toronto: Canadian Cancer Society, c2019. Available at: https://www.cancer.ca/en/cancer-information/cancer-type/esophageal/esophageal-cancer/the-esophagus /?region=ab. Access in: 30 Nov. 2019.

[65] Jemal A et al. Annual Report to the Nation on the Status of Cancer, 1975–2014, Featuring Survival. Journal of the National Cancer Institute, Bethesda, v. 109, n. 9, 2017.

[66] Domper Arnal MJD, Ferrandez Arenas A, Lanas Arbeloa A. Esophageal cancer: Risk factors, screening and endoscopic treatment in Western and Eastern countries. World Journal of Gastroenterology, Beijing, v. 21, n. 26, p. 7933-7943, 2015.

[67] Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin DM. Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. Int J Cancer. 2010 Dec;127(12):2893-917

[68] Bray F et al. Global cancer transitions according to the Human Development Index (2008-2030): a population-based study. Lancet Oncol. 2012 Aug;13(8):790-801.

[69] Clegg LX, Reichman ME, Miller BA, Hankey BF, Singh GK, Lin YD, et al. Impact of socioeconomic status on cancer incidence and stage at diagnosis: selected findings from the surveillance, epidemiology, and end results: National Longitudinal Mortality Study. Cancer Causes Control. 2009 May;20(4):417-35.

[70] Guimarães RM et al. Tendência para o câncer de fígado e vias biliares na Região Norte do Brasil. Revista Pan-Amazônica de Saúde. v.6 n.1 Ananindeua mar. 2015.

[71] Ministério da Saúde (BR). Instituto Nacional de Câncer. Atlas de mortalidade por câncer, 2014. Disponíveem: https://mortalidade.inca.gov.br/MortalidadeWeb/pages/Modelo01/consultar.xhtml;jsessionid=FE30DC3679AE0607C3D40FF095FEA76F.

[72] Mcglynn KA, Tsao L, Hsing AW, Devesa SS, Fraumeni Jr JF. International trends and patterns of primary liver cancer. Int J Cancer. 2001 Oct;94(2):290-6.

[73] Maziero MT, Bersot LS. Micotoxinas em alimentos produzidos no Brasil. Rev Bras Prod Agroindustriais. 2010;12(1):89-99.

[74] Rodríguez-Amaya DB, Sabino M. Mycotoxin research in Brazil: the last decade in review. Bra J Microbiol. 2002 Jan;33(1):1-11.

[75] Ximenes RAA, Pereira LMMB, Martelli CMT, Merchán-Hamann E, Stein AT, Figueiredo GM, et al. Methodology of a nationwide cross-sectional survey of prevalence and epidemiological patterns of hepatitis A, B and C infection in Brazil. Cad Saude Publica. 2010 Sep;26(9):1693-704.

[76] Ministério da Saúde (BR). Secretaria de Vigilância em Saúde. Secretaria de Gestão Estratégica e Participativa. Vigitel Brasil 2010: vigilância de fatores de risco e proteção para doenças crônicas por inquérito telefônico. Brasília: Ministério da Saúde; 2011.

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