Incidence of malignant neoplasm of the skin in Paraíba

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ABSTRACT

Cancer is a complex public health problem both in Brazil and around the world, affecting approximately one in five people throughout their lives. However, it is estimated that at least a third of cancer cases could be prevented. Skin cancer is categorized into melanoma and non-melanoma, the latter being the most common, but with low lethality (AMERICAN CANCER SOCIETY, 2020). Basal cell and squamous cell carcinomas are the most frequent subtypes of non-melanoma skin cancer, while melanoma, although rarer, has a significant mortality rate, with a significant increase in its incidence over time (ALBERTO J. A. WAINSTEIN, TCBC-MG., 2004; FRANCIS A. BELFORT., 2004). Light-skinned individuals who burn easily when exposed to the sun, with phototypes I and II, have a higher risk of developing the disease, which can also manifest itself in black individuals or those of higher phototypes, more rarely. Therefore, the early diagnosis of melanoma is fundamental.

Keywords: Cancer, Skin cancer, Basal cell carcinoma, Squamous cell carcinoma.

1 INTRODUCTION

Cancer is a complex public health problem both in Brazil and around the world, affecting approximately one in five people throughout their lives. However, it is estimated that at least a third of cancer cases could be prevented. Skin cancer is categorized into melanoma and non-melanoma, the latter being the most common, but with low lethality (AMERICAN CANCER SOCIETY, 2020). Basal cell and

squamous cell carcinomas are the most frequent subtypes of non-melanoma skin cancer, while melanoma, although rarer, has a significant mortality rate, with a significant increase in its incidence over time (ALBERTO J. A. WAINSTEIN, TCBC-MG., 2004; FRANCIS A. BELFORT., 2004). Light-skinned individuals who burn easily when exposed to the sun, with phototypes I and II, have a higher risk of developing the disease, which can also manifest itself in black individuals or those of higher phototypes, more rarely. Therefore, the early diagnosis of melanoma is fundamental.

It is of paramount importance to implement effective measures aimed at reducing the risks generated by prolonged exposure to radiation, providing adequate protection to the population, such as the use of primary protective measures, such as encouraging the use of sunscreens with high regularity, wearing hats and caps, limiting exposure to the sun at times considered undue.

2 GOAL

To analyze the incidence of skin neoplasms in the state of Paraíba in the last ten years.

3 METHODOLOGY

In this project was inserted a methodological proposal of a retrospective, descriptive and quantitative study. The study was developed using secondary data from the public domain related to the state of Paraíba, which has databases of information regarding cancers registered in the state and categorizes them into types, incidence, mortality, aggravating factors, population and phototype most affected.

The data needed for the study consisted of the total incidence of skin cancer between the years 2010 and 2022 in the state of Paraíba, in addition to the stratification of this index by sex and age group. It was also necessary to collect information on the total number of individuals who underwent treatment for this pathology in the period in question. Thus, it was possible to evidence the validity and reliability of the study through the data obtained. These data were collected from information systems provided by eSUS, within DATASUS and TABNET, in which the time until oncological treatment – PANEL – oncology was used. To record the collected data, a script prepared by the researchers themselves was used, containing the following variables: incidence of neoplasia per year, by sex, by age group and performance of treatment.

4 DEVELOPMENT

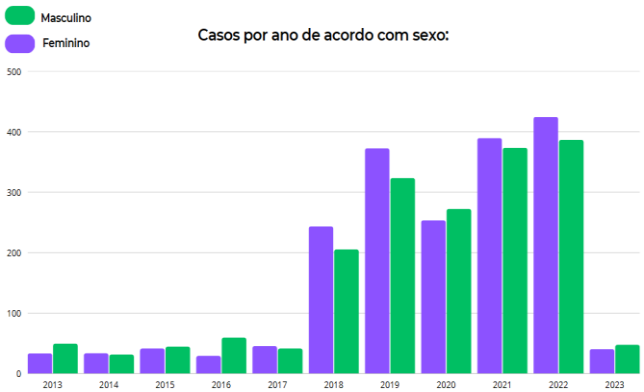
Cancer diagnosis in Brazil had a significant increase in the years 2018, of 84%, and of 2019, of 66%. In this way, it was no different with non-melanoma skin cancer. Since it is the most frequent cancer in the country, there were records of about 410,386 cases and 9,218 deaths during the period from 2009 to 2019. In addition, it is worth mentioning that, according to the National Cancer Institute (INCA), already in the period from 2010 to 2014, there was an evident increase in the number of new cases of these

neoplasms in the Brazilian territory, given that in 2010 there were 114 thousand new cases and the dating of 182 thousand new cases in 2014, that is, an increase of 59.6% in the number of cases in the four-year period. It is also worth mentioning that, according to the DATASUS Oncology Panel, in 2019, non-melanoma skin cancer represents 11.39% of the 147 specific diagnoses, while in 2017 this number was only 1.37%, evidencing once again the progressive increase in skin cancer cases in Brazil over the years.

The analysis made in relation to sex indicates that, among the Brazilian regions and cities, male individuals had this disease with a higher incidence having registered 212,925 cases, while women affected by this type of cancer had several 197,461 cases between the years 2009 to 2019. The percentage increase of non-melanoma skin cancer in the Brazilian male population was 954% in 2018 and 115% in 2019. The female population showed a significant increase of 1,160% in 2018 and 126% in 2019. Therefore, the female sex was the most affected in absolute numbers when evaluating these last two years. Also, it is necessary to emphasize that, among the number of deaths mentioned, the male sex was the most affected, presenting about 5,487 deaths, while the remaining 3,731 deaths were women.

When there is analysis according to sex in the state of Paraíba, melanoma and non-melanoma skin cancer, according to the DATASUS Oncology Panel, had a significant change in relation to the period from 2013 to 2023 and the data attest that the difference between cases of men and women is 0.039%, being, therefore, less prevalent in males with 1,830 cases in total, instead of the female sex that has 1,902 diagnosed cases, something that diverges from what is seen in a perspective of the Brazilian territory in general. In 2013, there were 49 male and 33 female cases. As of 2022, 386 men and 424 women have been diagnosed with skin cancer. Therefore, once again, there is a higher incidence of this cancer in Paraíba in recent years among females, since there is a progressive increase in diagnoses from the year 2017, an example of this was the increase of women diagnosed with this neoplasm in 440% from 2017 to 2018.

Figure 1. Cases per year of diagnosis according to sex in Paraíba of malignant melanoma and other skin neoplasms in the years 2013 to 2023.



Source: Ambulatory Information System (SIA), through the Individualized Outpatient Production Bulletin (BPA-I) and the High Complexity Procedure Authorization; Cancer Information System (SISCAN).

The significant increase in the number of cases of both cancer in general, as well as non-melanoma skin cancer and melanoma from 2017 to 2018 and from 2018 to 2019 is, above all, a milestone of better monitoring of cancer cases in Brazil, once underreported. As of 2018, the José de Alencar Gomes da Silva National Cancer Institute (INCA), through the Early Detection Division, developed together with the Department of Informatics of the Unified Health System (DATASUS) the platform of the Oncology Panel, which allowed the provision of a better elaborated database, previously incipiently made by the Health Information Systems (SIS) in the Unified Health System (SUS) (Atty, Garden, Dias, Migowski, & Tomazelli, 2020).

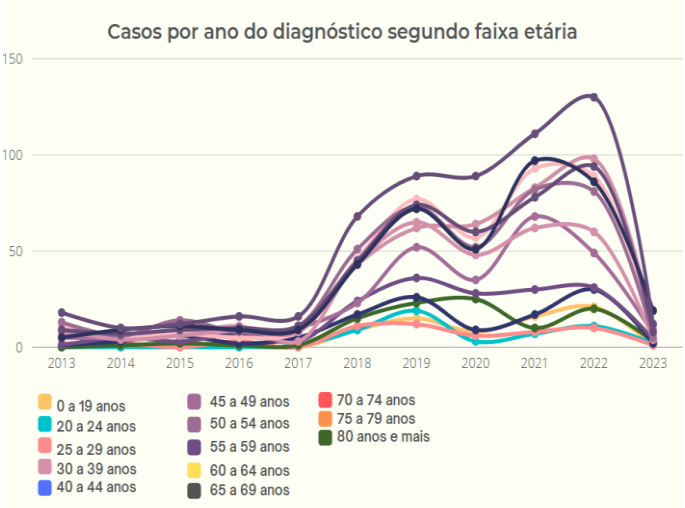
However, through the statements of the SBD, the state presents a problem of underreporting, since there are recurrent complications in the registration of the pathology. In this sense, it is evident the scarcity of data about the number of Paraibans who had effective treatment against skin cancer, since only after 2018 the Oncology Panel Brazil changed the criteria for registering cases. Thus, the evaluation prior to such a period is made only by estimates.

In Brazil, the female population represents about 51.8% of Brazilians. This is equal to a total of 97,348,809, against 93,406,990 of the male population. The 31,021 cases of NMSC in 2019 represent 31.8 cases/100,000 women; In the male population, its 27,909 cases represent 29.8 cases/100,000 men. It is noticed that there is not a very significant difference in the involvement of non-melanoma skin neoplasms between men and women, although they present more cases. However, the second most common type of NMSC, squamous cell carcinoma, tends to strike twice as many men when compared to women (Soares, Mendes & Sampaio, 2021).

It is also possible to see a greater decrease in cases in the period of 2020, given that during the same period there was quarantine because of the large cases of covid-19 worldwide. In 2020, 525 new cases of melanomas and other skin neoplasms were seen in the state of Paraíba, but this data is 32.38% lower than those collected in 2019, and 45.14% lower than the data collected in 2021.

It is possible to affirm that one of these consequences is the impact on the care of people with chronic diseases, which is mainly justified by social isolation, used as a measure to control the spread of SARS-CoV-2 infection; the decrease in the supply of certain health-related services, with the objective of making them available for the management of patients with COVID-19; the generalized fear of the population to seek health services, even when necessary; in addition to the difficulty of access to care and elective procedures for the chronically ill. Studies reveal the potential impact on the diagnosis and treatment of clinical conditions due to the COVID-19 pandemic. (BORGES, K. N. G. et al. 2020).

Graph 2: Cases per year of diagnosis of melanoma and other malignant neoplasms of the skin according to age group and sex in the state of Paraíba.



Source: Ambulatory Information System (SIA), through the Individualized Outpatient Production Bulletin (BPA-I) and the High Complexity Procedure Authorization; Cancer Information System (SISCAN).

From the perspective of Paraíba, between 2013 and 2023, the age group with the lowest prevalence is from 0 to 49 years with several 828 cases diagnosed, with 22.18% of the total cases registered. On the other hand, the age group composed of Paraibans aged 50 years or older had 2904 (77.81%) of the number of cases, the most significant and progressive increase with an average of cases diagnosed over 70 years in 1,387 of the 3,732 total cases. Thus, Paraíba follows the panorama of diagnosis of melanoma and non-melanoma skin cancer like the rest of Brazil.

Considering the age group with the highest incidence of people with NMSC, data from Datasus state that people aged 50 years and above have a 3.5-fold increase compared to people under 50 years. And according to the author Guimarães in the state of Paraíba, the age group with the second highest incidence of cases is that of patients over 70 years of age, resulting in a total of 1387 cases (37.16%) and the first highest risk group are those affected between the ages of 50-69 years with an incidence of 1517 cases (40.64%).

This greater number of older people is due to continuous and cumulative exposure to ultraviolet radiation (UVR) throughout life and causes DNA damage. In an elderly organism, often this damage is not possible to be repaired. There is also a decrease in the function of melanocytes, allowing a penetration of more intense ultraviolet B (UVB) radiation, and decreased immunity and Langerhans cells. According to Perrotta, 2011, the immune system also ages and creates opportunity for the appearance of neoplasms. T cells, especially CD28 cells, are involved in this senescence of the immune system. The effects are similar to those of immunosuppressive drugs. The presence of receptor-binding cancer antigen (RCAS1) is a

marker of advanced cases of CPB. This receptor is a membrane protein that favors the increase of neoplasia by inhibition of clonal cells of the immune system.

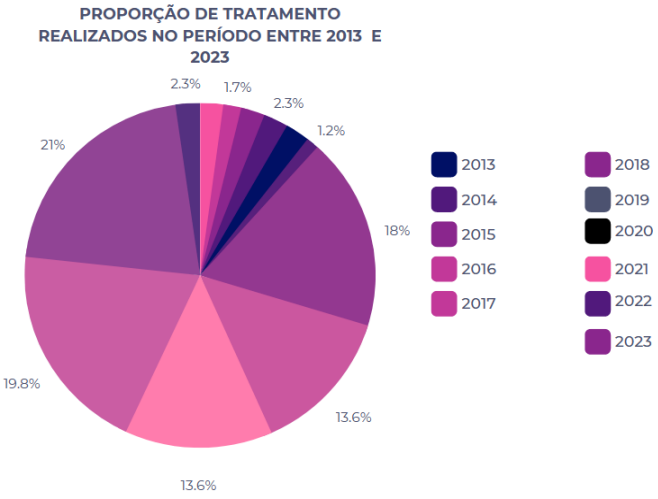
The aggravating factor is that they are carriers of a deficient immune system, in addition to suffering the consequences of the environmental factors to which they have been subjected throughout their lives. Knowledge of risk factors is necessary, as well as adherence to protective measures, so that there is less chance of developing neoplasms, since solar radiation is cumulative.

Table 1: cases per year of treatment of melanoma and other malignant neoplasms, according to treatment time in Paraíba.

Ano do tratamento	Até 30 dias	31 - 60 dias	Mais de 60	Sem informação de tratamento	Total
Total	325	111	571	2.725	3.732
2013	3	18	25	0	46
2014	16	16	37	0	69
2015	17	10	45	0	72
2016	15	12	45	0	72
2017	9	16	69	0	94
2018	92	9	56	0	157
2019	77	5	62	0	144
2020	14	11	61	0	86
2021	30	7	68	0	105
2022	48	7	91	0	146
2023	4	0	12	0	16
Sem informação de tratamento	0	0	0	2.725	2.725

Source: Ambulatory Information System (SIA), through the Individualized Outpatient Production Bulletin (BPA-I) and the High Complexity Procedure Authorization; Cancer Information System (SISCAN).

Graph 3: cases per year of treatment of melanoma and other malignant neoplasms, according to treatment time in Paraíba.



Source: Ambulatory Information System (SIA), through the Individualized Outpatient Production Bulletin (BPA-I) and the High Complexity Procedure Authorization; Cancer Information System (SISCAN).

According to the graph and table it is possible to see a greater demand for treatment in the period that lasted more than 60 days, totaling 15.30% of the cases of melanomas and other skin neoplasms that were registered in the period from 2013 to 2023, on the other hand the cases that were treated in up to 60 days did not reach the mark of 12%. Therefore, we can reach a conclusion that the long delay is due to a delay in the waiting lines or the acceptance of the patients themselves with their condition.

The term "delay" is used by some authors to express the time interval between the onset of symptoms and the first consultation. Delay at the port of entry (primary care) when related to the time between the first appointment and referral for investigation by a specialist. Delays also related to secondary care (in the case of a hospital or clinic where the investigation is taking place), which refers to the interval between the first consultation in secondary care until the diagnosis of the disease (ESTEVA et al., 2007; NEAL & ALLGAR, 2005; ROBERTSON et al., 2004).

According to the listed, in 2012, Brazilian cancer patients won an important right for their medical treatment. This is Law 12,732 - also called the 60-Day Law - which guarantees cancer patients the start of medical treatment within 60 days of the pathological diagnosis. This becomes extremely important, especially for patients with melanoma, whose disease detected early and treated in a timely manner substantially favors the prognosis (KITTLER et al., 2002, WRIGHT et al., 2011; BRAZIL, 2012).

Although this law has already entered into force, it is known that it is not the reality of Brazil. Factors related to delay, diagnosis and treatment, are of crucial importance for the improvement of the individual, malignant neoplasms require a dynamism, from when the initial signs/symptoms are observed until the moment of diagnosis and treatment of the patient in a timely manner (PAIVA et al., 2015).

Thus, it is undoubtedly that this problem is an impasse for Brazilian public health, in which individuals may be vulnerable to skin cancer, especially fair-skinned people.

5 FINAL CONSIDERATIONS

Given the scenario indicated by the secondary data collected, it is perceived that women are the most affected by malignant neoplasms in Paraíba from the period of 2018. However, it is notorious the low number of men who seek diagnosis and treatment for this disease and this comes from a cultural resistance. It is worth mentioning that the largest risk group are those affected between the ages of 50-69 years.

Thus, it can be assimilated that from these data to three factors: first that over the years the high sun exposure and lack of protection against UV rays, expose the individual to diseases; and a second place is linked to the aging of the population, data indicate that the aging of Brazil is one of the biggest causes of cancer in the Brazilian territory. Because the aging of the cells and the immune system, are causing the greatest chances of failure in the processes of G1, S0 and G2, thus causing various problems in the human body. In third point there is the great difference in the time of treatment, and the delay for the completion

of the same, going against the law 12.732 of 2013, which guarantees cancer patients the beginning of medical treatment in up to 60 days.

The SARS-CoV-2 pandemic that occurred in the 2020s, and its high infection rate led to the need for the isolation of all individuals, so many who were on treatments or needed to go to periodic appointments, in the case of individuals who had a higher age group, thus preferred to stay at home for fear of contracting the virus, For this reason there was a significant decline in the diagnosis of skin cancer in this period.

In addition, it is valid to address that non-melanoma skin cancer had a high incidence in the periods analyzed, and a significant increase in the years 2017 to 2018, this occurs there is an intensification of the work of the (INCA), in which there are recurrent pathologies in the registration of this. As well, it should be noted that according to the data of the treatments against skin cancer is mostly assisted by the health systems, because such a problem must be diagnosed early and the delayed start of treatment.

Thus, it is concluded that the results found in the research serve as a warning for the awareness of the population and governments, to promote events that encourage the use of primary protection measures, and especially sunscreen, which is one of the main forms of prevention, since skin cancer has a direct relationship with sun exposure, thus avoiding its main cause.

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