

BIBLIOGRAPHIC INFORMATION SYSTEM

Journal Full Title: Journal of Biomedical Research & Environmental Sciences

Journal NLM Abbreviation: J Biomed Res Environ Sci

Journal Website Link: <https://www.jelsciences.com>

Journal ISSN: 2766-2276

Category: Multidisciplinary

Subject Areas: Medicine Group, Biology Group, General, Environmental Sciences

Topics Summation: 128

Issue Regularity: Monthly

Review Process type: Double Blind

Time to Publication: 7-14 Days

Indexing catalog: [Visit here](#)

Publication fee catalog: [Visit here](#)

DOI: 10.37871 ([CrossRef](#))

Plagiarism detection software: iThenticate

Managing entity: USA

Language: English

Research work collecting capability: Worldwide


Organized by: [SciRes Literature LLC](#)

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Manuscript should be submitted in Word Document (.doc or .docx) through

Online Submission

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MINI REVIEW

The Brazilian Increase in Cases of Lung Cancer and COVID-19, Can They be related?

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Abstract

Last year in Brazil, lung cancer was the third most common tumor in men and the fourth in women, without counting non-melanoma skin cancer. It is the first in the world in incidence among men and the third among women. When we talk about mortality, it is the first among the male audience and the second among the female audience. But what are its main causes? Did COVID-19 contribute to the increase in cases of this neoplasm?

Introduction

Since the 1960s, changes have been observed in the profile of diseases that affect human populations. Infectious and parasitic diseases ceased to be the main cause of death and were replaced by diseases of the circulatory system and cancers [1].

Smoking is, without a doubt, an important risk factor for the development of lung cancer. For this reason, quitting smoking is essential, the risk factor does not decrease immediately, but it gets smaller over time, studies have shown that ex-smokers always have a slightly higher risk than those who have never smoked, but even so, it is much lower than for people who continue to smoke. In addition to smoking, there are other possible causes of lung cancer, such as environmental pollution, exposure to radiation and genetic issues.

In 2022, cases of lung cancer in Brazil had the following proportions: 18.020 new cases in men, representing 7.5% of all cancers and 14.540 new cases in women, which represented 6.0% of all cancers. In 2018, pre-COVID-19, that number was 6.042 for men and 4.747 for women, a 33% increase for both [2]. Nowadays, the question is: With the pandemic, people smoked more or less? COVID-19 helped to increase cases?

What about COVID-19?

COVID-19 emerged in China in late 2019 and quickly reached pandemic status and studies have shown that smoking could be a risk factor for severe manifestations of COVID-19, other studies have shown that lung cancer patients are four times more likely to die if they are infected with COVID-19 [3].

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DOI: 10.37871/jbres1731

Submitted: 27 March 2023

Accepted: 15 April 2023

Published: 17 April 2023

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Keywords

- Lung cancer
- COVID-19
- Smoking
- Cancer

MEDICINE GROUP

CANCER

PULMONOLOGY

PUBLIC HEALTH

VOLUME: 4 ISSUE: 4 - APRIL, 2023



It is still being discussed whether, due to the pandemic, people smoked more or less. There are different studies that defend both sides. On the one hand, some experts say that COVID caused stress and the patient, because he stayed at home more, ended up smoking more. Others argue that, due to fear of a worse prognosis in smokers, individuals ended up quitting smoking. So, it is still not a conclusive analysis and it may change from country to country. But an increase of 88% of new cases of lung cancer is expected in Brazil for the 2023-2025 triennium [4].

COVID-19 ended up playing an ambiguous role in relation to lung cancer. It is not the cause, but it contributed too many people having exams to investigate respiratory diseases during this time, thus, they had the opportunity to discover nodules and some were lung cancer. On the other hand, the infection delayed many checkups and individuals who were not infected by the disease did not have their routine exams, so they did not have the chance to find the neoplasm early, this is what happened in Northeast Brazil [5].

Does the COVID-19 Vaccination Play a Role in the Rise in Cancer Cases?

Cases of Idiopathic Pulmonary Fibrosis (IPF) have been found in some patients who have taken the COVID-19 vaccine. IPF is a fatal interstitial lung disease characterized by progressive scar tissue formation, according to Lee, lung cancer occurs more frequently in patients with IPF [6]. However, there is no direct correlation between vaccination and the development of lung cancer, immunization against COVID-19 remains recommended in vulnerable patients, especially those with lung cancer. In Brazil, patients diagnosed with this disease received 4 doses of the vaccine by the year 2022, and the country, in general, had a high rate of vaccination against COVID-19 by patients considered at risk, such as patients with lung diseases.

What are the Main Recommendations and the Most Common Signs and Symptoms?

According to Brazilian Cancer Institute, the earlier detection is still the best strategy used to find a tumor, and thus, provide a greater chance of successful treatment. It can be done through investigation with clinical, laboratory, endoscopic or radiological examinations, of people with signs and symptoms suggestive of the disease or of people without signs

or symptoms, but belonging to groups with a greater chance of having the disease, like patients who smoke a reasonable amount of cigarettes or who stopped smoking less than fifteen years ago or patients with a family history should also undergo routine assessments [7].

The Cancer Institute also reveals that, in most cases, the symptoms presented are not caused by cancer itself, but it is important that they are investigated by a doctor, especially if they do not improve in a few days, among them: persistent cough and hoarseness, bleeding from the airways, chest pain, difficulty breathing, weakness and weight loss without apparent cause [7].

Advances in Treatment

Some treatments are indicated for lung cancer, such as surgeries, including robotics. Also the stereotactic radiotherapy which is really a safer method with fewer side effects. There are still immunotherapies and targeted therapies, which have fewer adverse effects and are more tolerable, besides they have very good efficacy. There are also several new drug strategies, either as an isolated treatment or combined with surgery or radiotherapy [7].

Every day there is more research because lung cancer is very common and has a high lethality. So, discovering it early and treating it aggressively is a greater chance that the patient will be cured of this disease.

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