



ISSN: 2230-9926

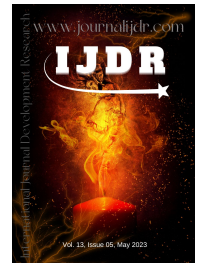
Available online at <http://www.journalijdr.com>

IJDR

International Journal of Development Research

Vol. 13, Issue, 05, pp. 62741-62743, May, 2023

<https://doi.org/10.37118/ijdr.26766.05.2023>



RESEARCH ARTICLE

OPEN ACCESS

ANALYSIS OF THE CLINICAL, EPIDEMIOLOGICAL AND MORTALITY PROFILE OF GASTRIC CANCER IN BRAZIL

Gabriela Sayuri Bertolazo Koyama^{1*}; Lívia Carvalho Encinas¹; Érica Barreta Dal Bem¹; Vitória Maria Nicolau de Santana¹; Christian José Fernandes Ferramosca¹; Patrícia Rubinho Brandini¹; Fausto Henrique Raposo Gentilin²; Hugo Soares de Souza Bellece³; Gabriella Glioche Miranda³; Carolina Pinto Araújo³; Ana Clara Poyares de Mello Bhering³; Sofia Brito Lourenço³; Vinícius Lopes de Menezes³; Thais da Silva Costa⁴; Joao Victor Monfardini Pereira⁴; Rafaela Leal Carvalho da Costa⁴; Daniela Bierhals⁵ and Talles Ayres Lima⁵

¹Medical student at the Centro Universitário de Adamantina – UNIFAI –SP –Brazil; ²Medical student at the Centro Universitário das Américas– FAM – SP –Brazil; ³Medical student at the Universidade Federal do Rio de Janeiro – UFRJ – Brazil; ⁴Medical student at the Universidade Iguazu – UNIG – RJ– Brazil; ⁵Medical student at the Universidade Estácio de Sá – UNESA – RJ –Brazil

ARTICLE INFO

Article History:

Received 14th March, 2023

Received in revised form

20th April, 2023

Accepted 26th April, 2023

Published online 30th May, 2023

KeyWords:

Gastric cancer; epidemiological profile; Morbidity and mortality.

*Corresponding author:

Gabriela Sayuri Bertolazo Koyama

ABSTRACT

Introduction: Gastric cancer is one of the most prevalent, both in women and in men, worldwide, including in Brazil, being considered a condition that causes more morbidity and mortality. **Objective:** To describe the clinical, epidemiological and mortality profile of gastric cancer in Brazil from 2010 to 2020, as well as the prevalence and risk factors involved in the development of this disease. **Methodology:** To prepare the study, a bibliographic survey was carried out, through research in the LILACS, Scielo and MEDLINE databases, using descriptors. Strings were made with the words using the Boolean operator (AND): gastric cancer AND epidemiology AND morbidity and mortality AND public health. **Results:** Morbimortality was higher for gastric cancer in men, predominantly aged over 60 years, white. It was found that gastric cancer had the highest number of cases registered in the year 2019 (32,876 cases) and a significant drop in the year 2020 (12,495 cases). The southeast region of the country was the one that obtained the highest number of diagnoses, on the other hand, the northeast region was the one that least diagnosed this disease. The risk factors most described in the literature are: *H. pylori* infection; eating habits; excess salt in food and genetic factors. **Conclusion:** We can infer that gastric cancer remains a serious public health problem in Brazil, and it is important to restructure strategies adopted for prevention and early diagnosis in all states and regions in order to optimize the treatment of the disease in order to enable its cure and improve patients' quality of life.

Copyright©2023, Gabriela Sayuri Bertolazo Koyama et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Gabriela Sayuri Bertolazo Koyama; Lívia Carvalho Encinas; Érica Barreta Dal Bem; Vitória Maria Nicolau de Santana et al. 2023. "Analysis of the clinical, epidemiological and mortality profile of gastric cancer in Brazil". *International Journal of Development Research*, 13, (05), 62741-62743.

INTRODUCTION

980s, it was the most prevalent cancer in the world. In 2018, the worldwide incidence of the disease was almost 1 million new cases, accounting for more than 700,000 deaths in the year on the planet.^{1,2} According to the National Cancer Institute (INCA), in 2023 stomach cancer was the fourth most incident in men and the sixth in women. It is responsible for 5.6% of malignant tumors reported in Brazil.

According to population-based records, 95% of cases are adenocarcinoma, other types such as sarcoma and lymphoma represent 2% and 3% of cases of gastric cancer, respectively.^{2,3} Worldwide, the risk factors that may contribute to the development of gastric cancer are: genetic predisposition, previous or recurrent development of *H. pylori*, individual's lifestyle and eating habits, among others. Family lineage should also be taken into account as a risk factor, as the population of European ancestry is more susceptible to the development of this neoplasm.^{3,4} On the national scene, several

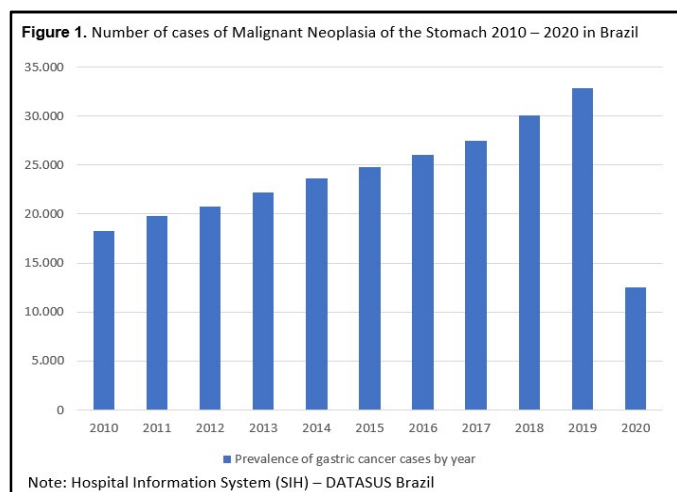
aggravating factors of these risk factors are widely disseminated in the daily life of Brazilian citizens: inadequate eating habits, predominant consumption of processed foods, insufficient intake of whole fibers, exacerbated alcohol consumption, persistence of smoking habits, added to the high prevalence of a sedentary lifestyle, in addition to *H. pylori*, which is the main risk factor for this disease.⁴ In addition, a considerable portion of the population is exposed to carcinogens in their work environment, such as agricultural workers — who handle pesticides — and rubber tappers.^{5,6} In Brazil, diagnostic investigation is recommended in patients who present with dyspepsia and are over 45 years old or have some alarm signal, such as weight loss, anemia, dysphagia or family history of the neoplasm. Cancer has fatal potential, but it can also be curative, especially if diagnosed in the early stages of the disease.^{2,7} In this sense, the objective of this study is to describe the clinical, epidemiological and mortality profile of gastric cancer in the period from 2010 to 2020 in the Brazilian population, as well as its risk factors.

METHODS

This is a cross-sectional epidemiological study based on secondary data regarding the clinical and epidemiological profile of gastric cancer cases diagnosed between 2010 and 2020 in Brazil. For the construction of the proposed study, a bibliographical survey was carried out, through research in the LILACS, Scielo and MEDLINE databases, using descriptors. Strings were made with the words using the Boolean operator (AND): gastric cancer AND epidemiology AND morbidity and mortality AND public health. In addition, data were also collected in the Hospital Information System (SIH) of the Ministry of Health and on the DATASUS page (SUS Department of Informatics), being processed in Excel spreadsheets and used in the form of graphs and tables, through of statistical analysis.

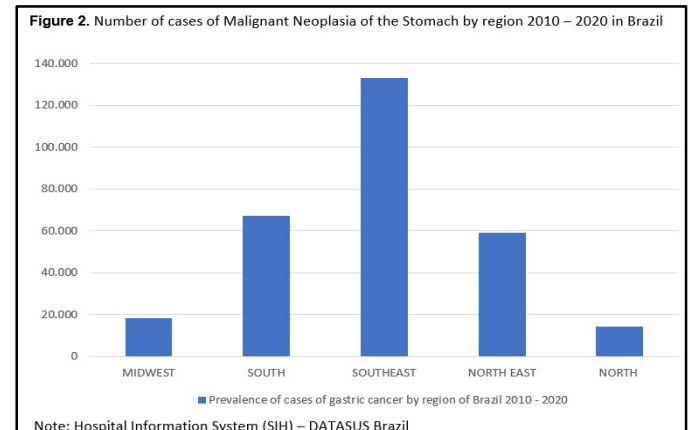
RESULTS AND DISCUSSION

The number of gastric cancers in Brazil has progressively increased from 2010 to 2020 and had the highest number recorded in 2019, with 32,876 cases. In contrast, the lowest rate was recorded in 2020, with 12,495 cases — a drop of 38% from one year to the next (Figure 1).

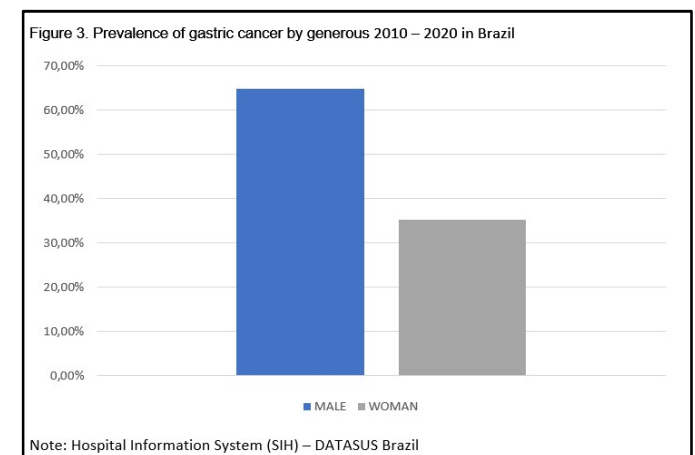


As this is a cross-sectional study, it was not possible to infer the causes of this discrepancy, however, in the context of the Pandemic, in which it was declared a public health emergency of international importance by the World Health Organization (WHO), on 30 January 2020, it was already expected to significantly affect the numbers of patients diagnosed with cancer in general. With a large part of the population postponing medical procedures considered elective, such as consultations and screening tests and early diagnosis. Therefore, with the end of the pandemic already established in 2023, the numbers are expected to increase in the coming years. In Brazil, there are considerable differences between the absolute data of the different regions of the national territory. The region with the highest

prevalence of gastric cancer was the southeast region, with 133,028 registered cases. One of the factors that must be taken into account for this region to be the one with the highest prevalence is the fact that it is the most populous in the national territory — about 89 million inhabitants (Figure 2).



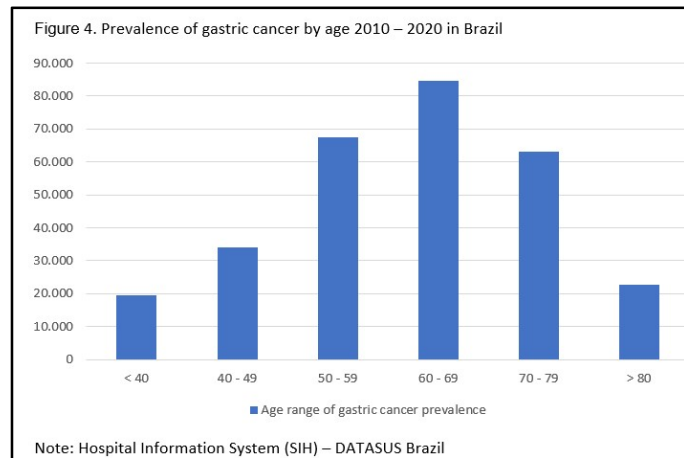
The factors related to the higher prevalence in this region are the lifestyle and eating habits of the population. In the cities of São Paulo and Belo Horizonte — cities with the highest numbers of diagnoses of this disease — a large part of the population eats away from home, either through sausages or fast food. It is noteworthy that balanced nutrition in quantity and quality is a strategy to prevent gastric cancer.⁸ With regard to the comparison between the sexes, due to the fact that the hormonal profile in women is hypothesized as a protective factor, this may explain the difference in the incidence rates of gastric cancer between women and men.^{9,10} In view of this study, the prevalence of males (64.73%) in relation to females (35.27) was evident (Figure 3).



According to the American Society, the average risk of a man developing stomach cancer in his lifetime is about 1 in 95, while for women, this risk is 1 in 154. Factors that may be associated with higher prevalence in males are: food, smoking and alcoholic beverages. Men tend to have diets with high concentrations of sodium chloride, nitrites and nitrates in industrialized foods, in addition to consuming fried foods and alcoholic beverages more frequently and using tobacco more strongly, when compared to women. As for smoking, a systematic review that analyzed 42 articles showed a relative risk (RR) of 1.62 in men and 1.2 in women.¹¹ Smoking not only influences the incidence, but also changes the prognosis of the disease, increasing in 43% recurrence and mortality (HR 1.43, 95% CI: 1.08-1.91, P = 0.01).¹¹⁻¹³

Regarding age group, stomach cancer is more prevalent among the population over 50 years old, with emphasis on the age group 60-69 years old, followed by 50-59 years old and 70-79 years old (Figure 4). The two regions with the highest life expectancy in the country –

South and Southeast – have the highest number of cases of the disease in question. Allied to the aforementioned factors, it is thus possible to also establish a causal relationship between longer life expectancy and a higher prevalence of stomach cancer. This nexus has also been exposed by other studies that show that not only does the risk of developing the disease increase with age, but also mortality is proportionally related.



Thus, in reverse, the prevalence of stomach cancer would also tend to be lower in regions with lower life expectancies, however, demographic and socioeconomic factors associated with a shorter or longer life expectancy also impact on factors associated with quality and accessibility to health services, in addition to greater susceptibility to underreporting, which ends up making such a causal establishment more complex.

CONCLUSION

At the end of the study, it was possible to trace the clinical epidemiological profile and mortality of gastric cancer, where the number of cases was higher in the year 2019, with the period from 2010 to 2020 analyzed, with a higher prevalence in men; age group over 60 years; factors related to eating habits, such as excess salt and nitrate in the water; hereditary factors; and the main cause of risk: the *H. pylori* bacteria, the factors being even more potentiated when there is a history of smoking or alcoholism, enabling the onset of earlier cancer, whose risk is higher.

REFERENCES

- AMERICAN CANCER SOCIETY. statistics for stomach cancer. Available at: <<https://www.cancer.org/cancer/types/stomach-cancer/about/key-statistics.html>>
- BARCHI, L.C. et al. II Brazilian consensus on gastric cancer carried out by the Brazilian association of gastric cancer. *ABCD, arch. Bras. Cir. Dig., São Paulo*, v.33, n.2. 2020.

- BENARROZ, M. Diet and stomach cancer prevention. *NaInternMed*, v. 9, p.118, 2017.
- BRAY, F. et al. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *Cancer journal for clinicians*, v. 68, n. 6, p. 394-424, 2018.
- CURADO, MP, et al. Disparities in Epidemiological Profile of Gastric Adenocarcinoma in Selected Cities of Brazil. *Asian Pac J Cancer Prev*. v.20 ; n 8, p. 2253–2258, 2019.
- DE MORAIS, B.C.F. et al. Socio-demographic and clinical profile of patients with Gastric Cancer treated at a reference hospital in the interior of Minas Gerais. *Rev Med Minas Gerais*, v.30, 2020.
- FRAZÃO, G.A.P, et al. Epidemiological profile of gastric cancer cases in Brazil CPAQV Magazine – Center for Advanced Research in Quality of Life, v.13, n°. 1, 2021.
- GUIMARAES R. P.; MUZI, C. D. Trends in gastric cancer mortality rates in Brazil and regions over a 30-year period (1980-2009). *Arch. Gastroenterol. São Paulo*, v.49, n.3, p.184-188, 2012.
- INCA –NationalCancerInstitute. Stomach cancer. 2023. Available at: <<https://www.inca.gov.br/en/taxonomy/term/751>>
- ISLAMI, F. et al. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *Hoboken*, v. 68, n. 1, p. 31-54, 2018.
- LATORRE, M. R. D. O. Stomach cancer mortality in Brazil: analysis of the period from 1977 to 1989. *Cad Public Health*. v.13 (Suppl 1) p. 67-78, 1997.
- MELO, M. M.; NUNES, L. C.; LEITE, I. C. G. Relationship between dietary and anthropometric factors and gastrointestinal tract neoplasms: investigations conducted in Brazil. *Brazilian Journal of Cancerology*, v.58, n.1, p. 85-95, 2019.
- MERCHÁN-HAMANN, E. TAUIL, P. L. Proposed classification of different types of descriptive epidemiological studies. *Epidemiol. Serv. Saúde* n.30, v.1, p.1-13, 2021.
- PLUMMER, M. et al. Global burden of gastric cancer attributable to *Helicobacter pylori*. *International journal of cancer*, New York, v. 136, n. 2, p. 487-490, 2015.
- RAMOS, M. F. K. P. et al. Surgical treatment of gastric cancer: 10-year experience in a large teaching hospital. *ClinicsGastric*, Sao Paulo, v. 73, suppl. 1, 2018
- SABISTON, D. C. Jr. Et al. Textbook of Surgery – The Biological Basis of Modern Surgical Practice. Ed: Guanabara Koogan; 20ª edição, Rio de Janeiro, 2019.
- SILVA, B. A. Analysis of stomach cancer mortality rate between 2000 and 2015 in Paraíba, Brazil. *Health Sciences Archives*, [S.l.], v. 25, no. 3, p. 18-21, 2018.
- SOUZA, B. B. et al. Advanced gastric cancer: accuracy of endoscopic biopsy. *Thats. Science average Biol.*, Salvador, v.12, n.3, p.299-305, 2013.
- VANNI, G. L. et al. Breast Cancer Diagnosis in Coronavirus-Era: Alert From Italy. *Front. Oncol*. 2020.
