

HELICOBACTER PYLORI AS A RISK FACTOR FOR THE DEVELOPMENT OF GASTRIC ADENOCARCINOMA

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Abstract: **Introduction:** Gastric adenocarcinoma, the most common and malignant type of stomach cancer, is divided into intestinal and diffuse subtypes. Helicobacter pylori infection, advanced age, family history, diet, smoking and alcohol consumption are associated with its development. The goal is to explore these relationships to improve prevention and treatment. **Goal:** To investigate the relationship between risk factors, including Helicobacter pylori infection, advanced age, family history, diet, smoking and alcohol consumption, and the development of gastric adenocarcinoma, aiming to improve prevention and treatment strategies for this disease. **Method:** This is an integrative review study carried out in July 2023 from PUBMED. A combination of the terms “Stomach Neoplasms” AND “Adenocarcinoma” **Results:** The results of the investigation revealed that gastric adenocarcinoma, being the most prevalent and malignant type of stomach cancer, is associated with multiple risk factors, including Helicobacter pylori infection, advanced age, family history, diet, smoking and alcohol consumption. To understand these associations is essential for the development of effective prevention and early detection strategies. Early identification of these risk factors allows for a more assertive approach to treatment, resulting in better prognosis and quality of life for patients affected by this disease. **Conclusion:** In conclusion, the relationship between gastric adenocarcinoma and risk factors such as Helicobacter pylori infection and alcohol consumption emphasizes the need for preventive measures and early diagnosis. In-depth knowledge of these associations is crucial to enhance the therapeutic approach and improve clinical outcomes for patients affected by this challenging disease. **Keywords:** Adenocarcinoma. Helicobacter pylori. Stomach Neoplasms

INTRODUCTION

Comprising more than 90% of gastric cancers, adenocarcinoma is the most common malignant type of the stomach. Regularly divided into two types, intestinal and diffuse, which respectively form bulky, well-defined masses, associate strongly with *Helicobacter pylori* and which infiltrate walls diffusely with a greater propensity for metastatic spread. It presents itself as a significant challenge in the health area, with a high geographic incidence and diagnostic rates in advanced stages.

The main risk factor for the development of gastric adenocarcinoma includes bacterial infection by *Helicobacter Pylori*, however advanced age, family history, genetic predisposition, diet, smoking and high alcohol consumption are contributors to the progression of this neoplasm. Understanding the mechanism involved and the prevention strategy outlines the path to improving the outcome and quality of life for affected patients.

METHOD

This is an integrative review study carried out in July 2023 from PUBMED. We used the combination of the terms “Stomach Neoplasms” AND “Adenocarcinoma” AND “*Helicobacter pylori*” defined by the DeCS/MeSH system including full text articles, in English. Duplicate articles were excluded, which were outside the theme and which did not respond to the objective of the study aligned with the proposal of the review.

RESULTS AND DISCUSSION

Helicobacter Pylori is a gram-negative bacterium, with a spiral shape containing 4 to 6 polar flagella that enable motility in the mucus layer of the gastric lumen, its route of infection is common among people and is particularly related to sanitation conditions in childhood, since that its route of transmission

occurs through the fecal-oral, oral-oral route, sources of untreated water and poorly cooked food. Consequently *H. pylori* is the main cause of gastritis being presented as a grade 1 carcinogen for the development of gastric cancer with the determinants of disease progression imperfectly understood.

Gastric adenocarcinoma is the most prevalent and malignant type of stomach cancer, corresponding to more than 90% of cases, morphologically separated into intestinal and diffuse, it is the most deadly neoplasm since its diagnosis is usually made in advanced stages, since in the At the onset of *H. pylori* infection, the majority of patients remain asymptomatic, and the diagnosis is only possible through endoscopic examination, where the location can be determined and a biopsy can be sent for histological confirmation.

Intestinal adenocarcinoma has the ability to form voluminous and well-defined masses, being strongly associated, in the literature, with *Helicobacter Pylori* infection, which makes an antral presentation together with gastritis that, as its progression occurs, involves the body and gastric fundus, consequently, mucosal atrophy, reduced parietal cell mass, increased acid secretion and intestinal metaplasia, leading to an increased risk of gastric adenocarcinoma. It must also be remembered that gastric cancer due to *H. pylori* infection is associated with genetic polymorphism, which results in increased expression of tumor necrosis factor (TNF), cytokines and interleukins, in addition to the development of atrophy and subsequent gastric cancer. It is noteworthy that a diet rich in foods containing high amounts of sodium, lipids, smoking and excessive alcohol consumption are also associated with a higher risk of developing cancer.

CONCLUSION

Helicobacter pylori infection emerges as a crucial risk factor for the development of adenocarcinoma, especially in the intestinal subtype, and represents a significant public health challenge. Understanding the pathogenic mechanisms involved in the relationship between the bacteria and the progression to cancer is of paramount importance for the prevention and proper management of patients at risk.

It is essential that the medical community and society in general are aware of the risk factors associated with gastric adenocarcinoma, such as *H. pylori* infection, and adopt adequate preventive and screening

measures for its early detection. In addition, the implementation of effective strategies to improve sanitation conditions in childhood can help to reduce the incidence of this infection and, consequently, of gastric cancer.

Continued efforts to promote a healthy lifestyle, which includes a balanced diet and the reduction of smoking and excessive alcohol consumption, are essential in mitigating the risk of gastric adenocarcinoma. Awareness of the importance of early diagnosis, based on endoscopic examinations and biopsies, can also improve the chances of successful treatment and better prognosis for affected patients.

REFERENCES

VADUGANATHAN, Muthiah; et al. **ACE-Is, ARBs, or their combination in patients with COVID-19**. *The Lancet*, v. 396, n. 10255, p. 330-331, 1 ago. 2020. Disponível em: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31288-5/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31288-5/fulltext). Acesso em: 13 jul. 2023.

FERNANDES, Gabriel Silva et al. **TLR4 as a Therapeutic Target for COVID-19-Induced Cytokine Storm**. *International Journal of Molecular Sciences*, v. 21, n. 11, p. 4012, 5 jun. 2020. Disponível em: <https://www.mdpi.com/1422-0067/21/11/4012>. Acesso em: 13 jul. 2023.

GASTROENTEROLOGY CLINICS OF NORTH AMERICA. **Gastroenterology Clinics of North America**, [S.l.], v. 50, n. 2, abr. 2021. Disponível em: <https://www.sciencedirect.com/journal/gastroenterology-clinics-of-north-america/vol/50/issue/2>. Acesso em: 15 jul. 2023.

SUZUKI, Sho; KUSANO, Chika; HORII, Toshiki; ICHIJIMA, Ryoji; IKEHARA, Hisatomo. **The Ideal Helicobacter pylori Treatment for the Present and the Future**. *Digestion*, [S.l.], v. 103, n. 1, p. 62-68, jan. 2022. DOI: 10.1159/000519413. Disponível em: <https://doi.org/10.1159/000519413>. Acesso em: 15 jul. 2023.

CORREA, P; PIAZUELO, M. B. **Helicobacter pylori Infection and Gastric Adenocarcinoma**. *US Gastroenterol Hepatol Rev*, [S.l.], v. 7, n. 1, p. 59-64, jun. 2011. PMID: 21857882; PMCID: PMC3158605. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158605/>. Acesso em: 21 jul. 2023.